

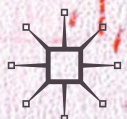
HENRI B. MEIER
JOHN E. MARTHINSEN
PASCAL A. GANTENBEIN
SAMUEL S. WEBER

SWISS FINANCE

BANKING,
FINANCE,
AND
DIGITALIZATION

SECOND EDITION

OPEN ACCESS



Swiss Finance

“*Swiss Finance* provides a comprehensive, thoughtful, and thought-provoking assessment of Switzerland’s role in global finance. It strikes a smart balance between Swiss self-confidence and pride grounded in stellar achievements as well as humility and respect in light of past failures and serious challenges ahead.”

—Dr. Peter Wuffli, *Founder and Chairman elea Foundation; Honorary Chairman, IMD; Former CEO, UBS Group*

“*Swiss Finance* provides an excellent overview of the Swiss Financial Market Infrastructure and its relevance for the continued success of Switzerland by connecting the real economy with the financial industry – in the past, today and in the future.”

—Daniel Schmucki, *CFO, SIX Group; Former CFO of Flughafen Zürich*

“Thanks to the authors for this valuable tool which for me as a banker is most useful as a book of reference, thanks to its systematic approach.”

—Karl Reichmuth, *Founder and long-term Head of Bank Reichmuth*

“*Swiss Finance* is an outstanding guide to the strengths and weaknesses of the Swiss financial value chain. One of the major challenges here and throughout continental Europe is the lack of risk capital for young innovative firms. With great expertise and passion, this book calls for joint efforts of politics and finance to create new chances for innovation and economic growth in global competition. A must read!”

—Prof. Heinz Riesenhuber, *Former Federal Minister of Research Germany; Member of German Parliament*

“Switzerland has always been a haven of stability and security. But the Swiss financial marketplace is in the midst of immense changes brought on by the changing global environment. Whether you are a Swiss banker or a Swiss banking client, this book will serve you as an indispensable companion and guide to the Finanzplatz Schweiz.”

—Guy Spier, Value investor, *Founder of Aquamarine Fund, Author of The Education of a Value Investor*

Henri B. Meier · John E. Marthinsen ·
Pascal A. Gantenbein · Samuel S. Weber

Swiss Finance

Banking, Finance, and Digitalization

Second Edition

palgrave
macmillan

Henri B. Meier
Buonas, Switzerland

Pascal A. Gantenbein
Business and Economics
University of Basel
Basel, Basel Stadt, Switzerland

John E. Marthinsen
International Business
Babson College
Babson Park, MA, USA

Samuel S. Weber
SSW, Independent Wealth Manager
Zug, Switzerland



ISBN 978-3-031-23193-3 ISBN 978-3-031-23194-0 (eBook)
<https://doi.org/10.1007/978-3-031-23194-0>

This book is an open access publication.

2nd edition: © The Editor(s) (if applicable) and The Author(s) 2023

Open Access This book is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this book are included in the book's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the book's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors, and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, expressed or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Cover designed by Isaac Soler

This Palgrave Macmillan imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

This book is dedicated to future generations in the hope that well-functioning Swiss financial markets will allow them to reap the fruits of today's investments.

Preface

It has been a decade since the first edition of *Swiss Finance* was published. You would be deceived if you believed that publishing a new edition ten years later would simply be a matter of updating exhibits and refreshing a few dates.

During the past ten years, the transformation of Switzerland's financial marketplace has been remarkable. In the 2013 *Introduction* of this book, we viewed its contents as "a few significant frames in the middle of a long and interesting movie." Nothing could have been more accurate. The revolution in Swiss and global financial markets has continued unabated, and there seems to be no end in sight.

Among the changes and new challenges during the last decade have been

- Digitalization;
- Cryptocurrencies, blockchain, decentralized digital ledgers, and central bank digital currencies;
- The FinTech and the collaborative economy revolution, making Switzerland's financial environment more competitive and increasingly complex;
- Automatic exchanges of information between nations' governments, leading to the abolition of Switzerland's bank secrecy protections for non-Swiss residents;
- Recovery from the US-led financial crisis, only to survive the European debt crises, Brexit, Russia's two-time invasion of Ukraine, pandemics, and the global increase in inflation during 2022;

- Massive expansion of exchange-traded funds (ETFs) from USD 1.8 trillion to more than 10 trillion, leading to intensified competition between private banks, chiefly among them the Swiss global leaders that are serving increasingly cost-conscious customers;
- The restructuring of Switzerland's financial regulatory and legal system, led by the Financial Markets Supervisory Authority (FINMA);
- The Swiss National Bank's continued efforts to keep the Swiss franc at reasonable levels without dramatically increasing the potential for inflation;
- The Swiss government's and SNB's struggle to thoughtfully manage the activities of financial institutions that have become "too big to fail,"; and
- Switzerland's unceasing need to funnel crucial financial resources of institutional investors, such as pension funds and insurance companies, into venture capital projects that will help unravel formidable challenges of the future.

Henri B. Meier, John E. Marthinsen, and Pascal A. Gantenbein are delighted to welcome Samuel S. Weber as a new co-author of this book. Based on a decade of experience in private wealth management, he is reliable, efficient, and a valuable source of information on Swiss financial markets.

As was the case ten years ago, we wrote this book to be approachable and user-friendly. If there is a bias, it is toward practitioners who need to understand the multifaceted dimensions of Switzerland's capital and money markets.

This book has benefited from the thoughtful feedback of numerous individuals. With heartfelt thanks, we acknowledge contributions from the following industry experts and leading academics, who read chapters of our book with care and took the time to provide us with insightful feedback:

- Alain Picard—Head Products, SIX Swiss Exchange
- Andreas Barfuss—Swiss Bankers Association
- Andreas Roher—Swiss Bankers Association
- Christian Reuss—Head SIX Swiss Exchange
- Dr. Christian Bahr—Head Index Services, SIX Swiss Exchange
- Dr. Christophe Volonté—University of Basel and Inrate AG
- Dr. Claudia Wöhle—Professor of Financial Management & Financial Services, University of Salzburg
- Daniel Schmucki—CFO, SIX Group
- Dominik Enz—CFA, Cross Asset Derivative Sales, Goldman Sachs
- Dr. Ernst Baltensberger—Professor Emeritus at the University of Bern, Switzerland

- Dr. Jan Weissbrodt—Swiss Bankers Association
- Karl Reichmuth—Ex-Chairman of the Board and founder of Reichmuth & Co. Banquiers, Luzern
- Marcel Bichsel—Head Group Strategy, SIX Group
- Dr. Markus Staub—Swiss Bankers Association
- Patrick Wright—Founder, Wright Capital Partners AG
- Sarah Suter—Analyst, Primary Markets, SIX Swiss Exchange
- Martin Hess—Swiss Bankers Association
- Dr. Sébastien Kraenzlin—Director of Banking Operations, Swiss National Bank, and Professor at the University of Basel
- Dr. Stephan Ph. Thaler—Director, Swiss Life Investment Foundation
- Dr. Thomas Ankenbrand—Professor, Lucerne University of Applied Sciences and Arts
- Ueli Goldener—Head Fixed Income, SIX Swiss Exchange.

Often in life, little things turn into big things and make an enormous, positive difference. While writing this book, we benefited from the assistance of an outstanding group of competent, dedicated, and highly likable research assistants. They provided us with thoughtful feedback and uncovered mountains of information in the nooks and crannies of government, association, and other Internet sites. We owe a debt of gratitude to them for their patience and determination to help. Among this group were:

- Colon Orino, Babson College
- Komal Desai, Babson College
- Luca Fedele, University of Basel
- Valerija Ilievska, Babson College
- Veni Sindhu Priya Bommareddy, Babson College
- Weiyi Hao, Babson College.

We also wish to thank Flavia Vender, administrative assistant to Henri B. Meier, and Patricia Berens, Content Management and Research Librarian at Babson College, for their helpful and tireless support.

Writing a book is a vast undertaking, which inflicts considerable stress, albeit unintentionally, on the loved ones surrounding its authors. We fully understand and take this opportunity to thank them all for their patience and kindness, both of which (we believe) are the keys to a lifetime of happiness.

We dedicate this book to future generations who will benefit from the impressive progress of their predecessors but also inherit their huge debt

burdens. We hope that returns on the assets created with this debt more than offset their costs. If not, we have no one to blame but ourselves.

Buonas, Switzerland
Babson Park, USA
Basel, Switzerland
Zug, Switzerland

Henri B. Meier
John E. Marthinsen
Pascal A. Gantenbein
Samuel S. Weber

About This Book

This book explains how Switzerland has transformed its disconnected assortment of trading, clearing, settlement, and payment systems into a wholly integrated, fully automated electronic securities trading and post-trading infrastructure. To do so, the country has overcome dramatic financial, economic, and social pressures such as:

- Increasing rivalry from Asian competitors and continuing pressures from financial giants, such as the United States and England;
- Competitive challenges caused by changes in Switzerland's banking secrecy laws and practices;
- The shifting tide of new wealth generation toward Asia (e.g., China, Singapore, and South Korea) and significant changes in private wealth administration;
- Switzerland's tight financial supervision and burdensome federal stamp and withholding taxes;
- Digitalization of the financial services industry, including cybersecurity, cryptocurrencies, smart contracts, central bank digital currencies, the FinTech revolution, and DLT applications.

Swiss Finance was written for practitioners, academics, and anyone interested in separating myth from reality concerning Switzerland's banking, debt, equity, and derivative markets.

Contents

1	Introduction	1
2	Finanzplatz Schweiz: <i>Finance Center Switzerland</i>	11
3	The Swiss Banking System	63
4	Swiss Bank (Customer) Secrecy and the International Exchange of Information	159
5	Swiss Financial Market Regulators & Laws	251
6	Swiss Institutional Investors	297
7	Swiss National Bank and Swiss Franc's Role in Global Financial Markets	335
8	Swiss Debt Markets	411
9	Swiss Equity Markets	455
10	Swiss Derivative Markets	501
11	Financial Digitalization, FinTech, and the Collaborative Economy	527
12	Swiss Taxes on Investment and Financing	549
13	Summary and Outlook	571
	Index	581

About the Authors

Henri B. Meier holds a Master's degree and Ph.D. in Economics and Business Administration from the University of St. Gallen. He also holds an Honorary Ph.D. from the University of Basel and is a Senator at the University of St. Gallen. He has founded 20 start-ups, including HBM Healthcare Investments, and numerous foundations, such as the HBM Foundation, Pestalozzi School Camps, and HBM Unternehmerschule at the University of St. Gallen. His work as the former Chairman of Givaudan AG and board member and Group Executive Committee member at Roche Holding Inc. earned him prestigious honors, including the "European CFO Excellence Award." In recognition of his lifetime achievements, he was recognized in 2021 as one of the 24 most outstanding managers in 160 years of Swiss history. He has worked as the chief accountant for Williams Brothers (Caracas, Venezuela), as an economist, financial analyst, investment officer, and division chief at the International Finance Corporation and the World Bank (Washington D.C.), and as an Executive Committee member and head of Investment Banking at Handelsbank National Westminster (Zürich, Switzerland).

John E. Marthinsen is a Professor of Economics and International Business at Babson College in Babson Park, MA, where he holds The Distinguished Chair in Swiss Economics. He is the recipient of multiple teaching awards and the author of many books and articles. His teaching and research focus on International Macroeconomics, Risk Management, International Finance,

and Cryptocurrencies. He has extensive consulting and business experience, working for domestic and international companies and the US government. He has served on the United Nations Association's Economic Policy Council and lectured at the Universities of Bern and Basel in Switzerland and the University of Nürnberg in Germany.

Pascal A. Gantenbein is the Henri-B.-Meier Professor of Financial Management at the University of Basel. He also serves as the Dean of Studies at University of Basel's Faculty of Business and Economics. His academic interests are in the areas of corporate finance and valuation, portfolio management and risk management, as well as real estate finance and venture capital. In addition, he gained valuable work experience in the insurance industry and as a financial advisor. Today, he acts as a board member in the financial sector.

Samuel S. Weber is an independent wealth manager based in Zug, Switzerland. He studied business administration, strategy, and international management at the Universities of Basel and St. Gallen. Since 2012, he has worked as an independent wealth manager, focusing on value investing (i.e., buying undervalued companies). This investment style's success in public stock markets has come from distinguishing risk, defined as the permanent loss of capital, from volatility. Furthermore, it focuses on business performance as the key driver of long-term stock market returns. As a member of the Board of Trustees of the HBM Foundation, he is also committed to the professional development of young people.

List of Figures

- Fig. 2.1 SIX Group shareholder structure in 2021 (*Source* SIX, ownership structure of SIX, <https://www.six-group.com/en/company/governance.html> [Accessed on June 17, 2022]. Due to rounding, the sum is slightly different from 100%) 14
- Fig. 2.2 Employee structure at SIX: number of employees and as percent of total (year end 2021) (*Source* SIX Group. 2022. *SIX Group Annual Report 2021*. https://reports.six-group.com/download/2021AR/en/SIX_Annual_Report_EN.pdf [Accessed on July 27, 2022]) 15
- Fig. 2.3 Operating income and business unit profit for the four business units (excluding corporates*): 2020 and 2021 (in CHF Million and as Percentage of Total) (**Note* Corporates are not included in the figures. This explains the difference in total operating income and the sum of business unit profits [i.e., operating profit] compared to Fig. 2.4. Corporates include Corporate IT services and activities that support the group as a whole: Risk Management, Legal and Compliance, Finance and Services, Human Resources, Marketing and Communications, as well as SIX Exchange Regulation; *Source* SIX Group. 2022. *SIX Group Annual Report 2021*. https://reports.six-group.com/download/2021AR/en/SIX_Annual_Report_EN.pdf [Accessed on July 27, 2022] and SIX Group. 2022. *Full-Year 2021 Financial Results*. <https://www.six-group.com/dam/download/company/report/annual/2021/six-fy-2021-media-presentation.pdf> [Accessed on June 27, 2022]) 18

Fig. 2.4	SIX Group’s major business areas (<i>Source</i> SIX, overview of SIX: integral structures ensure strategic success, https://www.six-group.com/en/company.html [Accessed on June 18, 2022])	19
Fig. 2.5	Top five exchanges in Europe: total equity market capitalization per end of May 2022 (In USD Billion) of companies that were listed on the respective exchange (<i>Source</i> Data from The World Federation of Exchanges. Statistics Portal. https://statistics.world-exchanges.org [Accessed July 26, 2022])	25
Fig. 2.6	SIC payment system number of transactions in CHF Millions and turnover (In CHF Billion): 2017–2021 (<i>Source</i> Data from SNB. Economic Data. Payment transactions via Swiss Interbank Clearing (SIC). https://data.snb.ch/ [Accessed on August 1, 2022])	40
Fig. 2.7	SIX Group value chain: trading, products, clearing, and settlement (<i>Source</i> SIX Swiss exchange, <i>clearing and settlement</i> , https://www.six-group.com/en/products-services/the-swiss-stock-exchange/trading/trading-provisions/clearing-and-settlement.html [Accessed on June 18, 2022])	44
Fig. 2.8	Annual trading turnover of tradable financial instruments on SIX Swiss exchange: 2017–2021 (In CHF Billion) (<i>Source</i> Data from SIX Swiss Exchange. Market Data. Statistics. Monthly Reports. https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/statistics/monthly-reports.html [Accessed on August 1, 2022])	51
Fig. 3.1	Swiss Bank assets: 1990–June 2022 (Millions of Swiss francs) (Consolidation level: Parent company) (<i>Source</i> Swiss National Bank, Monthly Banking Statistics, https://data.snb.ch/en/warehouse/BSTA#!/cube/BSTA@SNB.MONA_U.BIL.AKT.TOT?fromDate=1987-09&toDate=2021-09&dimSel=KONSOLIDIERUNGSSTUFE(U),INLANDAUSLAND(T),WAEHRUNG(T),BANKENGRUPPE(A40) [Accessed on August 26, 2022]. *See Table 3.8 in <i>Appendix</i> for data by the year)	107
Fig. 3.2	Staff at banks in Switzerland (domestic): 2010–2021 (total staff and percent by bank category) (<i>Source</i> Swiss Bankers Association, Swiss Banking: Banking Barometer 2022, Number of Staff at Banks in Switzerland, Undated, https://publications.swissbanking.ch/banking-barometer-2022/number-of-staff-at-banks-in-switzerland (Accessed on August 30, 2022). The original data is sourced from the Swiss National Bank. *See Table 3.9 in <i>Appendix</i> for data by the year)	114

- Fig. 3.3 Net income by banking activity (percent and Swiss franc total): 2005–2021 (*Source* Swiss Bankers Association, Swiss Banking: Banking Barometer 2022, Net Income, <https://publications.swissbanking.ch/banking-barometer-2022/net-income> [Accessed on August 30, 2022]. The original data is sourced from the Swiss National Bank. Figures prior to 2011 come from Henri B. Meier, John E. Marthinsen, and Pascal A. Gantenbein, *Swiss Finance: Capital Markets, Banking, and the Swiss Value Chain*, John Wiley & Sons, 2012. *See Table 3.10 in *Appendix* for data by the year) 115
- Fig. 3.4 Portion of total bank assets by bank category: 2005–2021 (Parent company perspective [survey: comprehensive year-end statistics]) (*Source* Swiss National Bank, Balance Sheet Total, Development by Bank category, <https://data.snb.ch/en/topics/banken/chart/babilentbguach> [Accessed on August 26, 2022]. *See Table 3.11 in *Appendix* for data by the year) 117
- Fig. 3.5 Selected assets of banks in Switzerland: 2010–2021 (As a percentage of total assets) (*Source* Swiss National Bank, Selected Assets—Annual, <https://data.snb.ch/en/topics/banken/chart/babilaapouach> [Accessed on August 26, 2022]. *See Table 3.12 in *Appendix* for data by the year) 118
- Fig. 3.6 Bank shares of the mortgage market: 2021 (*Source* Swiss Bankers Association, Swiss Banking: Banking Barometer 2022, Balance Sheet, Shares of Domestic Mortgage Market in 2021, <https://publications.swissbanking.ch/banking-barometer-2022/balance-sheet> [Accessed on August 30, 2022]. The original data is sourced from the Swiss National Bank) 119
- Fig. 3.7 Swiss Bank mortgages, secured loans, and unsecured loans: 2021 (*Source* Swiss National Bank, Financial Stability Report: 2021, Domestic Bank Credit by Type of Borrower and Loan, p. 32, https://www.snb.ch/en/iabout/pub/oecpub/id/pub_oecpub_stabrep [Accessed on August 30, 2022]. *See Table 3.13 in *Appendix* for data by the sector and type of domestic bank credit) 120
- Fig. 3.8 Liabilities of banks in Switzerland: 2010–2021 (by bank category as a percentage of total liabilities) (*Source* Swiss Bankers Association, Swiss Banking: Banking Barometer 2022, Balance Sheet, Breakdown of Liabilities, <https://publications.swissbanking.ch/banking-barometer-2022/balance-sheet> [Accessed on August 30, 2022]. The original data is sourced from the Swiss National Bank. *See Table 3.14 in *Appendix* for data by the year) 121

Fig. 3.9	Assets under Management of Banks in Switzerland: Domestic and Foreign: 2010–2021 (Billions of Swiss francs) (<i>Source</i> Swiss Bankers Association, Swiss Banking: Banking Barometer 2022, Assets under Management, https://publications.swissbanking.ch/banking-barometer-2022/assets-under-management [Accessed on August 30, 2022]. The original data is sourced from the Swiss National Bank. *See Table 3.15 in <i>Appendix</i> for data by the year)	122
Fig. 3.10	Swiss fiduciary transactions by currency: 2005–2021 (billions of Swiss francs) (<i>Source</i> Swiss National Bank, https://data.snb.ch/en/topics/banken/chart/batreuhwuach [Accessed on August 29, 2022]. *See Table 3.16 in <i>Appendix</i> for data by the year)	124
Fig. 3.11	Outstanding derivative financial instruments: 2005–2021 (Billions of Swiss francs) (<i>Source</i> Swiss Bankers Association, Swiss Banking: Capital Market Products, Outstanding Derivative Financial Instruments, https://publications.swissbanking.ch/swiss-banking-trends-en/capital-market-products/ [Accessed on August 29, 2022]. The original data is sourced from Swiss National Bank. *See Table 3.17 in <i>Appendix</i> for data by the year)	127
Fig. 3.12	Asset composition of the Big banks: 2021 (<i>Source</i> Swiss National Bank, Supplementary Data on Banking Statistics, https://data.snb.ch/en/warehouse/BSTA/cube/BSTA@SNB.JAHR_K.BIL.AKT.FMI?facetSel=toz_bsta_bankengruppe(begriff_bg_g15)&dimSel=KONSOLIDIERUNGSSTUFE(K),INLANDAUSLAND(A,T,I),WAEHRUNG(CHE,JPY,EUR,T,U,USD),BANKENGRUPPE(G15) [Accessed on August 29, 2022])	132
Fig. 3.13	Asset composition of Cantonal banks: 2021 (<i>Source</i> Swiss National Bank, Supplementary Data on Banking Statistics, https://data.snb.ch/en/warehouse/BSTA/cube/BSTA@SNB.JAHR_K.BIL.AKT.TOT?facetSel=toz_bsta_bankengruppe(begriff_bg_g20)&fromDate=2015&toDate=2020&dimSel=KONSOLIDIERUNGSSTUFE(K),INLANDAUSLAND(T,I,A),WAEHRUNG(T,CHE,EM,EUR,JPY,USD,U),BANKENGRUPPE(G10) [Accessed on August 29, 2022])	135
Fig. 3.14	Asset composition of regional and savings banks: 2021 (<i>Source</i> Swiss National Bank, Annual Banking Statistics, https://data.snb.ch/en/warehouse/BSTA/facets?facetSel=toz_bsta_bankengruppe(begriff_bg_g20) [Accessed on August 29, 2022])	137

Fig. 3.15	Asset composition of Raiffeisen banks: 2021 (<i>Source</i> Swiss National Bank, Annual Banking Statistics, https://data.snb.ch/en/warehouse/BSTA/facets?facetSel=toz_bsta_bankengruppe(begriff_bg_g25) [Accessed on August 29, 2022])	139
Fig. 3.16	Asset composition of stock exchange banks: 2021 (<i>Source</i> Swiss National Bank, Annual Banking Statistics, https://data.snb.ch/en/warehouse/BSTA/facets?facetSel=toz_bsta_bankengruppe(begriff_bg_g35) [Accessed on August 29, 2022])	140
Fig. 3.17	Asset composition of “other banks”: 2021 (<i>Not including foreign banks</i>) (<i>Source</i> Swiss National Bank, Annual Banking Statistics, https://data.snb.ch/en/warehouse/BSTA/facets?facetSel=toz_bsta_bankengruppe(begriff_bg_g45) [Accessed on August 29, 2022])	141
Fig. 3.18	Composition of foreign banks’ assets: 2021 (<i>Source</i> Swiss National Bank, Annual Banking Statistics, https://data.snb.ch/en/warehouse/BSTA/cube/BSTA@SNB.JAHR_K.BIL.AKT.FMI?facetSel=toz_bsta_bankengruppe(begriff_bg_g20)&dimSel=KONSOLIDIERUNGSSTUFE(K),INLANDAUSLAND(T,I,A),WAEHRUNG(T,CHE,EUR,JPY,USD,U),BANKENGRUPPE(A25)&fromDate=2015&toDate=2020 [Accessed on August 29, 2022])	143
Fig. 4.1	Historic layers of privacy protection for Swiss residents (<i>Source</i> Authors’ representation)	164
Fig. 5.1	FINMA structure (<i>Source</i> FINMA, eight divisions, https://www.finma.ch/en/finma/organisation/finma-s-divisions/ [Accessed on August 3, 2022])	254
Fig. 6.1	Investment market intermediaries in Switzerland (<i>Source</i> Authors’ representation)	298
Fig. 6.2	Three-Pillar Concept of Social Security in Switzerland (<i>Note</i> EL = Supplementary benefits that cover the minimum costs of living where OASI and DI are not sufficient; AHV = Old Age and Survivors Insurance (OASI); IV = Disability Insurance (DI); EO = Loss of earnings insurance; ALV = Unemployment insurance; FZ = Family allowances; BVG = Law on Occupational Benefit (LOB); ZGB = Swiss Civil Code; OR = Swiss Code of Obligations. <i>Source</i> Authors’ representation)	303

Fig. 6.3	Net Assets of OASI, DI, and EO: 2005–2020 (Billions of Swiss Francs) (<i>Source</i> Authors' calculations based on data from Bundesamt für Sozialversicherungen, <i>Schweizerische Sozialversicherungsstatistik 2021</i> , https://www.bsv.admin.ch/bsv/de/home/sozialversicherungen/ueberblick/grsv/statistik.html ; <i>Schweizerische Sozialversicherungsstatistik 2022</i> , [Accessed on October 3, 2022])	305
Fig. 6.4	Assets of occupational pension funds (in CHF billion) (<i>Source</i> Bundesamt für Sozialversicherungen, <i>Schweizerische Sozialversicherungsstatistik 2021</i> , p. 67, https://www.bsv.admin.ch/bsv/de/home/sozialversicherungen/ueberblick/grsv/statistik.html [Accessed on October 3, 2022])	307
Fig. 6.5	Composition of occupational pension assets: 2005–2019 (in %) (<i>Source</i> Bundesamt für Sozialversicherungen, <i>Schweizerische Sozialversicherungsstatistik 2021</i> , p. 67, https://www.bsv.admin.ch/bsv/de/home/sozialversicherungen/ueberblick/grsv/statistik.html [Accessed on October 3, 2022])	307
Fig. 6.6	Total capital of Swiss state-run pensions (<i>Source</i> Authors' calculations based on data from: Bundesamt für Sozialversicherungen, <i>Schweizerische Sozialversicherungsstatistik 2021</i> , p. 28 https://www.bsv.admin.ch/bsv/de/home/sozialversicherungen/ueberblick/grsv/statistik.html [Accessed on July 8, 2022])	309
Fig. 6.7	Investment returns of life, non-life, and reinsurance companies 2008–2021 (<i>Source</i> FINMA, annual issues of <i>Bericht über den Versicherungsmarkt</i> [2008–2021], for 2021: https://www.finma.ch/de/-/media/finma/dokumente/dokumentencenter/myfinma/finma-publikationen/versicherungsbereich/20220909-versicherungsmarktbericht-2021.pdf [Accessed on October 3, 2022])	322

- Fig. 6.8 Structure of Swiss insurance companies' investments: 2021 vs. 2010 (*Note* Major shareholdings denote long-term equity holdings in other companies. *Source* Schweizerischer Versicherungsverband, *Prämienvolumen und Kennzahlen*, <https://www.svv.ch/de/der-svv/svv-publikationen/zahlen-und-fakten/zahlen-und-fakten/praemienvolumen-und-kennzahlen> [Accessed on October 3, 2022]; FINMA, *Bericht über den Versicherungsmarkt 2021*, <https://www.finma.ch/de/-/media/finma/dokumente/dokumentencenter/myfinma/finma-publikationen/versicherungsbericht/20220909-versicherungsmarktbericht-2021.pdf> [Accessed on October 3, 2022]. For 2010: FINMA, *Bericht über den Versicherungsmarkt 2010*, https://www.finma.ch/-/media/finma/dokumente/dokumentencenter/myfinma/finma-publikationen/versicherungsbericht/versicherungsreport-2010-d.pdf?sc_lang=de [Accessed on October 3, 2022]) 322
- Fig. 6.9 Solvency ratios of Swiss insurance companies (*Source* Schweizerischer Versicherungsverband, *Prämienvolumen und Kennzahlen*, <https://www.svv.ch/de/der-svv/svv-publikationen/zahlen-und-fakten/zahlen-und-fakten/praemienvolumen-und-kennzahlen> [Accessed on October 3, 2022]; FINMA, *Bericht über den Versicherungsmarkt 2021*, <https://www.finma.ch/de/-/media/finma/dokumente/dokumentencenter/myfinma/finma-publikationen/versicherungsbericht/20220909-versicherungsmarktbericht-2021.pdf> [Accessed on October 3, 2022]) 324
- Fig. 6.10 Domiciles of collective investment schemes (April 2022) (*Source* Staatssekretariat für Internationale Finanzfragen SIF, *Finanzstandort Schweiz—Kennzahlen April 2022*, <https://www.sif.admin.ch/sif/de/home/dokumentation/finanzstandort-schweiz-kennzahlen.html> [Accessed on July 25, 2022]) 327
- Fig. 6.11 Open collective capital investments (Mutual funds and investment companies) according to the federal act on collective investment schemes, 2005–2022 (CHF million) (*Source* Swiss National Bank, *Swiss open collective capital investments—By investment category*, <https://data.snb.ch/en/topics/finma/cube/capcolcat> [Accessed on July 25, 2022]) 328
- Fig. 6.12 Concentration of Swiss investment fund industry, June 30, 2022 (*Source* AMAS Marktkommentar/Swiss Fund Data AG, *Market Comments [June 2022]*, <https://www.swissfunddata.ch/sfdpub/fundmarket-statistics> [Accessed on July 25, 2022]) 330

- Fig. 7.1 Eligible reserve assets and minimum required reserves: January 2005 to June 2022 (*Source* SNB, SNB Data Portal, <https://data.snb.ch/en/topics/banken#!/cube/bamire> [Accessed on August 25, 2022]) 357
- Fig. 7.2 Swiss consumer price inflation: July 1944 to July 2022 (*Source* SNB, SNB Data Portal, <https://data.snb.ch/en/topics/uvo#!/cube/plkopr> [Accessed on August 25, 2022]) 360
- Fig. 7.3 Monetary aggregates: Monetary base (M0), M1, M2, and M3—1984 to July 2022 (*Source* SNB, SNB Data Portal, <https://data.snb.ch/en/topics/snb#!/cube/snbmonagg> [Accessed on August 25, 2022]) 362
- Fig. 7.4 Short-term and long-term Swiss interest rates: 1989 to June 2022 (*Source* Organization for Economic Co-operation and Development, Long-Term Government Bond Yields: 10-year: Main (Including Benchmark) for Switzerland [IRLTLT01CHM156N], retrieved from FRED, Federal Reserve Bank of St. Louis, <https://fred.stlouisfed.org/series/IRLTLT01CHM156N>, [Accessed on August 24, 2022]. Organization for Economic Co-operation and Development, 3-Month London Interbank Offered Rate [Libor], based on Swiss Franc [IR3TIB01CHM156N], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/IR3TIB01CHM156N>, [Accessed on August 24, 2022]) 364
- Fig. 7.5 The SNB's targeted three-month policy rate limits: January 2000 to December 2021 (*Source* SNB, SNB Data Portal, <https://data.snb.ch/en/topics/snb#!/cube/snbband> [Accessed on August 25, 2022]; Organization for Economic Co-operation and Development, 3-Month London Interbank Offered Rate [Libor], based on Swiss Franc [IR3TIB01CHM156N], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/IR3TIB01CHM156N>, [Accessed on August 25, 2022]) 367
- Fig. 7.6 SNB official reserves, Switzerland's monetary base, and Swiss three-month Libor: January 2008 to June 2022 (*Source* SNB, SNB Data Portal, <https://data.snb.ch/en> [Accessed on August 24, 2022]) 373
- Fig. 7.7 Quarterly growth of real GDP for Switzerland, the United States, and Euro Area: Q1 2020 to Q2 2022 (*Source* FRED, Federal Reserve Bank of St. Louis; Switzerland, <https://fred.stlouisfed.org/series/CLVMNACCSAB1GQCH> [was available only until Q1 2022]; Euro Area, , United States, [Accessed on August 22, 2022]) 379

- Fig. 7.8 Growth in SNB assets, liabilities, and provisions & equity: January 1, 2000–June 30, 2022 (*Source* SNB, SNB Data Portal, <https://data.snb.ch/en/topics/snb#!/cube/snbbipo> [Accessed on August 25, 2022]) 383
- Fig. 7.9 Annual growth rate of SNB assets: January 2000 to June 2022 (*Source* SNB, SNB Data Portal, <https://data.snb.ch/en/topics/snb#!/cube/snbbipo> [Accessed on August 25, 2022]) 384
- Fig. 7.10 SNB equity as a percent of assets: January 2000 to June 2022 (*Source* SNB, SNB Data Portal, <https://data.snb.ch/en/topics/snb#!/cube/snbbipo> [Accessed on August 25, 2022]) 385
- Fig. 7.11 Average monthly price of gold per ounce: January 1990 to December 2021 (*Source* ICE Benchmark Administration Limited (IBA), Gold Fixing Price 3:00 P.M. [London time] in London Bullion Market, based in U.S. Dollars [GOLDFMGBD228NLBM], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/GOLDFMGBD228NLBM>, July 23, 2021) 388
- Fig. 7.12 SNB gold and foreign currency assets: May 2000 to June 2022 (*Source* SNB, SNB Data Portal, [https://data.snb.ch/en/topics/snb#!/cube/snbimfra?fromDate=2000-05&toDate=2005-05&dimSel=D0\(T0,T1,T2,T3,DAEHS,T4,ZBIZIWF,T5,DNA,T6,DNS,2RIWF,3SSZR,T7,GF,T8,DF0,DNN,U0,T9,W,G0,D,DF1,G1,U1\),D1\(T0,T1\)](https://data.snb.ch/en/topics/snb#!/cube/snbimfra?fromDate=2000-05&toDate=2005-05&dimSel=D0(T0,T1,T2,T3,DAEHS,T4,ZBIZIWF,T5,DNA,T6,DNS,2RIWF,3SSZR,T7,GF,T8,DF0,DNN,U0,T9,W,G0,D,DF1,G1,U1),D1(T0,T1)) [Accessed on August 19, 2022]) 391
- Fig. 8.1 Shares of domestic and Short-Term Debt securities, by country: December 2021 (*Source* Bank for International Settlements (BIS), *Statistics Explorer*, <https://stats.bis.org/statx/srs/table/c1> [Accessed on August 20, 2022]. Full publications are available on the BIS website free of charge: <https://www.bis.org>) 413
- Fig. 8.2 Passive surpluses and deficits around a Short-Term Business Cycle (*Source* Authors' representation based on Swiss Federal Department of Finance, *The Debt Brake*, <https://www.efd.admin.ch/efd/en/home/fiscal-policy/the-debt-brake.html> [Accessed on July 10, 2022]) 415

- Fig. 8.3 Development of government Debt 2010–2020 (CHF billions) (*Source* Authors' calculations based on data available from the Federal Statistical Office, *Expenditure and debt*, <https://www.bfs.admin.ch/bfs/en/home/statistics/general-government-finance/expenditure-debt.html>, *Swiss public finances 2019–2022*, <https://www.bfs.admin.ch/bfs/en/home/statistics/general-government-finance/expenditure-debt.html>, *Switzerland's financial statistics for 2017*, <https://www.bfs.admin.ch/bfs/en/home/statistics/catalogues-databases/publications.assetdetail.10287487.html>, *Switzerland's financial statistics for 2013*, <https://www.bfs.admin.ch/bfs/en/home/statistics/catalogues-databases/publications.assetdetail.350884.html> [Accessed on July 12, 2022]) 416
- Fig. 8.4 Public Debt as % of GDP 1993–2020 and its moving 5-year average (dotted line) (*Source* Authors' representation and calculations based on data obtained from: Swiss Federal Department of Finance, <https://www.efv.admin.ch/efv/de/home/themen/finanzstatistik/daten.html#118810996> [Accessed on July 12, 2022]; Federal Statistical Office, *Bruttoinlandprodukt, lange Serie*, <https://www.bfs.admin.ch/bfs/en/home/statistics/national-economy/national-accounts/gross-domestic-product.assetdetail.18584979.html>; *Expenditure and debt*, <https://www.bfs.admin.ch/bfs/en/home/statistics/general-government-finance/expenditure-debt.html>; *Switzerland's financial statistics for 2017*, <https://www.bfs.admin.ch/bfs/en/home/statistics/catalogues-databases/publications.assetdetail.10287487.html>; *Switzerland's financial statistics for 2013*, <https://www.bfs.admin.ch/bfs/en/home/statistics/catalogues-databases/publications.assetdetail.350884.html> [Accessed on July 12, 2022]) 417
- Fig. 8.5 Publicly floated bonds of foreign borrowers (in CHF millions): By country group (2011 to 2021) (*Source* Authors' calculations based on data obtained from Swiss National Bank, *Capital market borrowing of Swiss franc bond issues*, [https://data.snb.ch/en/topics/finma/cube/capmabond?fromDate=2011-Q1&toDate=2022-Q1&dimSel=D1\(EU,UE,VSK,KZ,L,MOA,AN,E,T1\),D0\(E,R,NM\)](https://data.snb.ch/en/topics/finma/cube/capmabond?fromDate=2011-Q1&toDate=2022-Q1&dimSel=D1(EU,UE,VSK,KZ,L,MOA,AN,E,T1),D0(E,R,NM)) [Accessed on July 16, 2022]) 426

- Fig. 8.6 Publicly Floated Swiss franc bonds of foreign borrowers: By country group, 2021 (*Source* Authors' calculations based on data obtained from Swiss National Bank, *Capital market borrowing of Swiss franc bond issues*, [https://data.snb.ch/en/topics/finma/cube/capmabond?fromDate=2011-Q1&toDate=2022-Q1&dimSel=D1\(EU,UE,VSK,KZ,L,MOA,AN,E,T1\),D0\(E,R,NM\)](https://data.snb.ch/en/topics/finma/cube/capmabond?fromDate=2011-Q1&toDate=2022-Q1&dimSel=D1(EU,UE,VSK,KZ,L,MOA,AN,E,T1),D0(E,R,NM))) [Accessed on July 16, 2022] 426
- Fig. 8.7 Publicly Floated Swiss franc Bonds of Swiss Borrowers, by Issuer Group: 1999 to 2021 (CHF millions) (*Source* Swiss National Bank, *Capital market borrowing of Swiss franc bond issues*, [https://data.snb.ch/en/topics/finma/cube/capmabond?fromDate=2021-Q1&toDate=2022-Q1&dimSel=D1\(B0,K,G,P,VEGW,I,B1,V,UD,U,T0\),D0\(E,R,NM\)](https://data.snb.ch/en/topics/finma/cube/capmabond?fromDate=2021-Q1&toDate=2022-Q1&dimSel=D1(B0,K,G,P,VEGW,I,B1,V,UD,U,T0),D0(E,R,NM))) [Accessed on July 19, 2022] 427
- Fig. 8.8 Publicly Floated Swiss franc Bonds of Swiss Borrowers, by Issuer Group: 2021 (*Source* Swiss National Bank, *Capital market borrowing of Swiss franc bond issues*, [https://data.snb.ch/en/topics/finma/cube/capmabond?fromDate=2021-Q1&toDate=2022-Q1&dimSel=D1\(B0,K,G,P,VEGW,I,B1,V,UD,U,T0\),D0\(E,R,NM\)](https://data.snb.ch/en/topics/finma/cube/capmabond?fromDate=2021-Q1&toDate=2022-Q1&dimSel=D1(B0,K,G,P,VEGW,I,B1,V,UD,U,T0),D0(E,R,NM))) [Accessed on July 19, 2022] 428
- Fig. 8.9 Share of Foreign Bonds in Publicly Floated Swiss franc Bonds: 1990–2022 (*Source* Authors' calculations based on data obtained from Swiss National Bank, *Capital market borrowing of Swiss franc bond issues*, [https://data.snb.ch/en/topics/finma/cube/capmabond?fromDate=2021-Q1&toDate=2022-Q1&dimSel=D1\(B0,K,G,P,VEGW,I,B1,V,UD,U,T0\),D0\(E,R,NM\)](https://data.snb.ch/en/topics/finma/cube/capmabond?fromDate=2021-Q1&toDate=2022-Q1&dimSel=D1(B0,K,G,P,VEGW,I,B1,V,UD,U,T0),D0(E,R,NM))) [Accessed on August 21, 2022] 430
- Fig. 8.10 Composition of Swiss public bonds outstanding, June 2022 (*Source* Authors' calculations based on data obtained from SIX Group, *Bond Explorer*, Ibid. [Accessed on July 15, 2022]) 431
- Fig. 8.11 Composition of Public International Swiss franc Medium—and Long-Term Debt Outstanding by Instrument Type: End 2011 and Q1 2022 (*Source* Authors' calculations based on data obtained from Bank for International Settlements (BIS), *Statistics Switzerland Q1 2022*, <https://stats.bis.org/statx/srs/table/c3?c=CH&p=20221>) [Accessed on July 18, 2022]. Full publications are available on the BIS website free of charge: www.bis.org) 431

- Fig. 8.12 Composition of Swiss franc Note and Bond Issues, 1995 to 2021 (CHF millions) (*Source* Authors' calculations based on data obtained from Swiss National Bank, *Capital market borrowing of Swiss franc bond issues*, [https://data.snb.ch/en/topics/finma/cube/capmabond?fromDate=2010-Q1&toDate=2022-Q1&dimSel=D1\(T0\),D0\(E\)](https://data.snb.ch/en/topics/finma/cube/capmabond?fromDate=2010-Q1&toDate=2022-Q1&dimSel=D1(T0),D0(E)) [Accessed on July 18, 2022]) 432
- Fig. 8.13 Distribution of bond maturities at issuance in the Swiss franc bond market 1999–2022 (*Source* Authors' calculations based on data obtained from SIX Group, *Bond Explorer*, Ibid. [Accessed on July 15, 2022]) 433
- Fig. 8.14 Collateralization Provisions in the Swiss Pfandbrief Model (*Source* Authors' representation. The concept was adopted from Credit Suisse, *White Paper No. 9—Swiss Covered Bonds: Investors' Flight to Quality*, May 27, 2009, [https://pfandbriefbank.ch/sites/de/assets/File/Research_Berichte/20090527%20Investors%27%20flight%20to%20quality%20\(Credit%20Suisse%20AG\).pdf](https://pfandbriefbank.ch/sites/de/assets/File/Research_Berichte/20090527%20Investors%27%20flight%20to%20quality%20(Credit%20Suisse%20AG).pdf) [Accessed on July 28, 2022]) 445
- Fig. 8.15 Loans of the two Swiss Pfandbrief institutes by category of banks: 1995–2021, in CHF millions (*Note* Due to partly missing data for Cantonal Banks, Regional Banks and Savings Banks, and Raiffeisen Banks during 2011–2014, these datapoints were interpolated *Source* Authors' calculations based on data obtained from Swiss National Bank. For 2015–2021: *Loans from central mortgage bond institutions*, [https://data.snb.ch/en/warehouse/BSTA/cube/BSTA@SNB.JAHR_K.BIL.PAS.APF.DPZ?facetSel=toz_bsta_bankengruppe\(begriff_bg_a25\)&dimSel=KONSOLIDIERUNGSSTUFE\(K\),INLAND_AUSLAND\(T,I\),WAEHRUNG\(CHF,EUR,T\),BANKENGRUPPE\(A25\)\)](https://data.snb.ch/en/warehouse/BSTA/cube/BSTA@SNB.JAHR_K.BIL.PAS.APF.DPZ?facetSel=toz_bsta_bankengruppe(begriff_bg_a25)&dimSel=KONSOLIDIERUNGSSTUFE(K),INLAND_AUSLAND(T,I),WAEHRUNG(CHF,EUR,T),BANKENGRUPPE(A25))) [Accessed on July 28, 2022]) 449
- Fig. 8.16 Average issue sizes and median issue sizes (secondary axis) in CHF million (*Note* The bond universe is limited to bonds denominated in CHF, EUR, and USD. This corresponds to 92 percent of all bond securities issues on SIX Swiss Exchange *Source* Authors' calculations based on data available from SIX Group, *Bond Explorer*, Ibid. [Accessed on July 18, 2022]) 451
- Fig. 8.17 Sustainable Bonds by currencies (*Note* The bond universe is limited to bonds denominated in CHF, EUR, and USD. This corresponds to 92 percent of all bond securities issues on SIX Swiss Exchange *Source* Authors' calculations based on data obtained from SIX Group, *Bond Explorer*, Ibid. [Accessed on July 18, 2022]) 452

- Fig. 9.1 Correlation of Swiss stock and bond markets with the US and UK markets (*Source* Authors' calculations based on data obtained from Refinitiv Datastream) 458
- Fig. 9.2 All Swiss Listings between 2000 and mid-2022 (CHF millions) (*Note* For 2022, only the first half-year is reported. *Source* Authors' calculation based on data from SIX Group, *List of all Listings since 2000*, https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/shares/ipo-history.html#tfl_dlc19saXN0=/year/2022 [Accessed on July 13, 2022]) 463
- Fig. 9.3 All Swiss Equity issues 1982 to 2021 (CHF millions) (*Source* SIX Group, *Listings on the Swiss Stock Exchange*, https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/shares/ipo-history.html#tfl_dlc19saXN0=/year/2022 [Accessed on July 20, 2022]. Authors calculations based on data from Vontobel Equity Research Switzerland: *Aktienmarkt Schweiz—Kapitalmarkttransaktionen* (2008, 2009, 2010 editions), Bank Vontobel, Zurich. Data on SEOs received from Vontobel Capital Advisory [July 20, 2022]) 464
- Fig. 9.4 Swiss Equity-related capital flows 1996 to June 2022 (CHF billions) (*Source* Swiss National Bank, *Capital movements in the shares of domestic companies*, <https://data.snb.ch/en/topics/finma/cube/capmovshare> [Accessed on August 28, 2022]) 465
- Fig. 9.5 Number of listed securities on the SIX Swiss exchange: 2000, 2011, and 2022 (Structured products and warrants on secondary axis) (*Source* Authors' calculations based on data available from SIX Group, *Jahresstatistiken and Top Traded Securities—June 2022*, https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/statistics/monthly-reports.html#tfl_V0c19saXN0=/year/2022 [Accessed on July 11, 2022]) 472
- Fig. 9.6 Market capitalization of securities listed on the SIX Swiss Exchange (CHF billion): December 2000 to June 2022 (*Source* Authors' calculations based on data from SIX Group, *Bond Explorer*, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/bonds/bond-explorer.html> (for bonds) [Accessed on July 18, 2022]; SNB, <https://data.snb.ch/en/topics/finma/cube/capmovshareSIX> (for shares) [Accessed on August 23, 2022]) 474

- Fig. 9.7 Market value of securities listed on Swiss Stock Exchange: 1980 to 2022 (*Source* Authors' calculations based on data from SIX Group, *Bond Explorer*, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/bonds/bond-explorer.html> (for bonds) [Accessed on July 18, 2022]; SNB, <https://data.snb.ch/en/topics/finma/cube/capmovshareSIX> (for shares) [Accessed on August 23, 2022]) 474
- Fig. 9.8 Swiss listed Equity Market values by industry as of September 30, 2022 (*Source* SIX, *Swiss Performance Index SPI Total Return Factsheet*, <https://www.six-group.com/dam/download/market-data/indices/factsheets/six-factsheet-stat-sxge-en.pdf> [Accessed on October 15, 2022]) 475
- Fig. 9.9 Total Turnover per Year on SIX Swiss Stock Exchange: 2000 to mid-2022 (CHF millions) (*Source* Swiss National Bank, *Securities turnover on the Swiss stock exchange*, [https://data.snb.ch/en/topics/finma/cube/capweums?fromDate=2000-01&toDate=2022-06&dimSel=D0\(IT0,AT0,T0,IT1,AT1,T1,A,SPO,T2,ISMIT\)](https://data.snb.ch/en/topics/finma/cube/capweums?fromDate=2000-01&toDate=2022-06&dimSel=D0(IT0,AT0,T0,IT1,AT1,T1,A,SPO,T2,ISMIT)) [Accessed on July 28, 2022]) 479
- Fig. 9.10 Number of trades (Thousands): 2001, 2011, and 2022 (*Source* Authors' calculations based on data from SIX Group (*Annual Statistics*). For 2022: *Top Traded Securities—June 2022*, https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/statistics/monthly-reports.html#tfl_V0c19saXN0=/year/2022 [Accessed on July 11, 2022]) 480
- Fig. 9.11 Number of listed equities, ETFs, and Funds on the Swiss Stock Exchange 1877–2022 (*Source* Authors' calculations based on data from SIX Group, *Jahresstatistiken: Kotierte Wertpapiere und Emittenten*, 1995–2011. Also see Zürcher Börse, *Jahresbericht 1994*, Zurich. SIX Group, *Top Traded Securities—June 2022*, https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/statistics/monthly-reports.html#tfl_V0c19saXN0=/year/2022 [Accessed on July 11, 2022]. For investment funds, see <https://www.six-group.com/en/newsroom/news/the-swiss-stock-exchange/2022/six-sif-600.html>, for ETFs, see <https://www.six-group.com/dam/download/the-swiss-stock-exchange/trading/markets/etfs/market-report/market-report-etf-2022-q1-en.pdf> [Accessed on August 15, 2022]). 483

- Fig. 9.12 Number of shares included in the indices of the SIX Swiss Exchange (*Source* Authors' calculations based on data from SIX Group, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/indices/equity-indices.html>? [Accessed on July 11, 2022]) 486
- Fig. 9.13 SPI and sustainability, ESG, and Gender Equality sub-indices (*Note* Because of different base dates, all index values are standardized at 100 on March 20, 2015 *Source* Authors' calculations based on data from SIX Group, *Index Data Center*, https://www.six-group.com/exchanges/indices/data_centre/esg/spi_esg_baskets_en.html and <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/indices/equity-indices.html> [Accessed on July 16, 2022]) 488
- Fig. 9.14 SPI and SMI: Development of index values June 1988 to July 2022 (*Source* Authors' calculations based on data from SIX Group, https://www.six-group.com/exchanges/indices/data_centre/index_overview_en.html [Accessed on July 12, 2022]) 489
- Fig. 9.15 Nominal and real value of shares and bonds in Switzerland: 1925 to 2021 (*Source* Authors' calculations based on data obtained from Pictet Wealth Management: *Performance Update for Swiss Shares and Bonds, 1926–2021*, 21 February 2022. <https://www.group.pictet/media-relations/historical-performance-shares-and-bonds-switzerland> [Accessed on March 16, 2022]) 492
- Fig. 9.16 Number of listed foreign shares on the Swiss Stock Exchange, 1990 to 2022 (*Source* Author's calculations based on data from Zürcher Börse, *Jahresbericht 1994*; SIX Group, *Listed Securities and Issuers 1995–2011*; SIX Group, *Share Explorer*, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/shares/share-explorer.html> [Accessed on July 12, 2022]) 494
- Fig. 9.17 Number of listed foreign shares on the Swiss Stock Exchange by Country: 1995, 2012, and 2022 (*Source* Authors' calculation based on data from SIX Group (*Trading Participants*). For 2022: *Share Explorer*, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/shares/share-explorer.html> [Accessed on July 12, 2022]) 495

- Fig. 10.1 Daily Swiss Franc OTC Foreign Exchange and Interest Rate Derivatives: 1995–2022 *Figures for 2019 cannot be compared to previous years due to a change in the statistical collection. See footnote 23. *Source* Bank for International Settlements, Turnover in Foreign Exchange and Derivatives Markets in Switzerland—BIS Triennial Survey in 2019, https://data.snb.ch/en/topics/texts/doc/ddum_2019#umdev (Accessed on August 26, 2022). Bank for International Settlements, Triennial Survey Foreign Exchange and Over-the-Counter (OTC) Derivatives Markets in 2022 (Preliminary results) <https://www.bis.org/statistics/rpfx22.htm> (Accessed on November 3, 2022. Full publications are available on the BIS website free of charge: www.bis.org) 512
- Fig. 11.1 Business models in banking (*Note* Swiss companies (marked in bold) are allocated to the business models by the authors. *Source* Authors’ representation based on the concept adopted from M. Buermeyer, W. Weinrich, K. Heuschroök, O. Lehner, K. Holtkamp: *Retail banking business models—defining the future: Challenges and opportunities of new business models*, October 19, 2019, BankingHub by zeb, <https://www.bankinghub.eu/innovation-digital/retail-banking-business-models> [Accessed on July 17, 2022] 532
- Fig. 11.2 Number of FinTech companies in Switzerland (*Note* For each year, the left-side bars depict the “Product Areas” and the right-side bars depict the “Technology Areas.” The abbreviations for “Product Areas” are: Payment = Payment, D&L = Deposit & Lending, Inv. Mgt. = Investment Management, and Banking Infrastructure = Banking Infrastructure. The abbreviations for “Technology Areas” are: DLT = Distributed Ledger Technology, Analytics = Analytics, Big Data, AI, P/A/R = Process Digitalization, Automation, and Robotics. *Source* Authors’ representation based on data obtained from “IFZ Fintech Study 2022”, Hochschule Luzern, <https://craft.finnova.com/assets/download/IFZ-FinTech-Study-2022.pdf> [Accessed on July 18, 2022]) 537
- Fig. 12.1 Switzerland’s Top Corporate Tax Rates: 1981 to 2019 (*Source*: Tax Foundation, Taxes in Switzerland, <https://taxfoundation.org/country/switzerland/#corporate> [Accessed on September 13, 2022]) 551
- Fig. 12.2 How Does the Swiss Government Raise Revenues Relative to OECD Nations: 2020 (*Source* Tax Foundation, Sources of Revenue in Switzerland, <https://taxfoundation.org/country/switzerland/#sources> [Accessed on September 13, 2022]) 551

List of Tables

Table 2.1	SIX Group's consolidated income statement: 2020 and 2021	16
Table 2.2	Overview of regulatory services of SIX financial information	35
Table 2.3	Overview of SIX Group's Swiss major indices	36
Table 2.4	Tradable financial instruments by number: end of July 2022	50
Table 3.1	Description of digitalization terms	68
Table 3.2	Calculation of the SNB exemption threshold	98
Table 3.3	Brief descriptions of Switzerland's nine bank categories	111
Table 3.4	Number of banks in Switzerland: 2000–2021	113
Table 3.5	Assets and liabilities of banks in Switzerland: June 2022 (As a percent devoted to foreign business)	128
Table 3.6	Foreign offices of banks in Switzerland: 2000, 2010, 2020, and 2021	129
Table 3.7	Relative size of liquid assets for Switzerland's nine banking categories: 2015–2021 (as a percent of total liquid assets)	130
Table 3.8	Assets of banks in Switzerland: 1990–2022 June (millions of Swiss francs) (Consolidation level: Parent company)	148
Table 3.9	Staff at banks in Switzerland (domestic): 2010–2021 (total staff and percent by bank category)	149
Table 3.10	Net income by banking activity: 2005–2021 (percent and Swiss franc total)	150
Table 3.11	Portion of total bank assets by bank category: 2005–2021 (millions of Swiss francs) (Parent company perspective [survey: comprehensive year-end statistics])	151
Table 3.12	Selected assets of banks in Switzerland: 2010–2021 (millions of Swiss francs)	152

Table 3.13	Swiss mortgages, secured loans, and unsecured loans: 2021	153
Table 3.14	Liabilities of banks in Switzerland: 2010–2021 (millions of Swiss francs)	154
Table 3.15	Assets under Management of banks in Switzerland: domestic and foreign: 2010–2021 (billions of Swiss francs)	155
Table 3.16	Swiss fiduciary deposits by currency: 2005–2021 (billions of Swiss francs)	155
Table 3.17	Outstanding derivative financial instruments: 2005–2021 (millions of Swiss francs)	156
Table 4.1	Article 47: Swiss Federal Act on Banks and Savings Banks (<i>Status as of January 1, 2020</i>)	169
Table 4.2	Five settlement classes	246
Table 4.3	Swiss Banks Settlement Fund Distribution Statistics as of January 31, 2020 (Amounts Approved by the Court) <i>Holocaust Victim Assets Litigation Case No. CV 96-4849</i>	248
Table 5.1	Swiss financial market legislation: 1930–2022	260
Table 5.2	Legal basis for Switzerland's financial regulators and financial institutions	273
Table 6.1	Summary matrix: Swiss financial security system and financial intermediaries	301
Table 6.2	Insurance: International comparisons of premiums per capita: 2020	310
Table 6.3	Largest life insurance companies in the world 2022 (Ranked by market capitalization)	310
Table 6.4	Largest nonlife insurance companies and reinsurers in the world 2022 (Ranked by market capitalization)	311
Table 6.5	Premiums in the Swiss insurance market 2021	312
Table 6.6	The largest life insurance companies in Switzerland, 2021 vs. 2010 (Ranked by gross premium income)	313
Table 6.7	The largest non-life insurance companies in Switzerland: 2021 vs. 2010 (Ranked by gross premium income)	313
Table 6.8	The largest Swiss reinsurance companies: 2021 (Ranked by gross premium income)	314
Table 6.9	Swiss insurance segments and international distribution 2021	316
Table 6.10	Domestic and foreign premiums of Swiss insurance companies by source: 2010 and 2021 (Figures in billions of Swiss Francs)	316
Table 6.11	Investments of life, non-life, and reinsurance companies 2021 vs. 2010 (CHF billion)	321
Table 7.1	Summary of Swiss National Bank monetary targets since 1944	358
Table 8.1	Overview of the Swiss franc Debt Markets	412
Table 8.2	Swiss Government Borrowing Activity by Level of Government: 2013 to 2021	419

Table 8.3	Comparison of Borrowing Rates on SIX Exchange (Compagnie de Financement Foncier versus Valiant) as of October 28, 2022	424
Table 8.4	Top 15 Foreign Corporate Issuers of Swiss franc Debt, 2006 to July 2022 (CHF million)	425
Table 8.5	Outstanding Foreign Swiss franc Debt on SIX Swiss Exchange by Country as of June 30, 2022	434
Table 8.6	International Comparison of Gross Financial Liabilities Relative to GDP: 2021 versus 2011 (Percent of GDP, ranking based on 2021 figures)	441
Table 9.1	Types of Equity Investments	460
Table 9.2	Listed Swiss Shares by Type: May 2012 and June 2022	461
Table 9.3	Top 20 New Swiss Listings between 2000 and 2022	466
Table 9.4	Recognized Accounting Standards for Public Issuers Incorporated in Switzerland	470
Table 9.5	Number of Listed Structured Products February 2012 and May 2022	472
Table 9.6	20 SMI Companies and Index Weights as of September 30, 2022	476
Table 9.7	Index Comparison by Market Values: Data in July 2022	477
Table 9.8	Top Ten Traded Swiss Shares on SIX Swiss Exchange in June 2022	481
Table 9.9	Number of Listed Securities on the Swiss Exchange: 1994, 2011, and 2022	482
Table 9.10	Stock Performance 1990 to 2021 (average Total Returns)	490
Table 9.11	Financial Performance Data: 1990 to 2021	490
Table 9.12	Annual Performance of All Listed Stocks and Bonds: 1925–2021 (1925 = Base Year)	491
Table 9.13	Top 10 Foreign Companies on SIX with Secondary Listings (by Market Value) (Data as of July 2022)	493
Table 9.14	Top 10 Foreign Companies on SIX by Turnover as of July 2022	493
Table 10.1	Notional and Gross Value of Global Derivative Transactions by Product Group: 2020 & 2021	508
Table 10.2	Exchange-Traded Futures and Options: 2020 to 2022	509
Table 10.3	Daily OTC Swiss Franc Foreign Exchange and Interest Rate Derivatives by Product: 1995–2022	514
Table 10.4	Swiss Franc Exchange-Traded Futures and Options: 2020, 2021, and 2022	515
Table 10.5	SIX Structured Product Groups and Products	519
Table 10.6	Customer Demand for SIX Product Classes: 2020 and 2021	520
Table 10.7	Demand for Structured Product Groups: 2020 and 2021	520
Table 10.8	Currency Structure of SIX Structured Product Transactions: 2020 and 2021	520

Table 11.1	Cooperative efforts in banking and insurance in 2022	535
Table 11.2	Business Models of Swiss FinTech Companies (2021 vs. 2019)	538
Table 11.3	Business Models of Swiss and Global FinTech Companies (2021)	539
Table 11.4	Business Models of Swiss and European InsurTech Companies (2021)	542
Table 12.1	Overview of swiss taxes	553



1

Introduction

Switzerland was once one of the poorest countries in Europe because it had generally infertile agricultural land and neither mineral resources nor access to the sea. During the Middle Ages, the lack of investment opportunities induced capital exports, some of which financed European monarchies, the earliest signs of “Swiss Finance.” This state of development lasted until the age of enlightenment, when education, technical know-how, disciplined work, an orderly social framework, and political stability made it possible for the country to prosper. For 500 years following Switzerland’s declaration of neutrality after the Battle of Marignano, the nation became a safe haven, particularly for the French nobility, resulting in a steady flow of funds from France to Geneva.

Thanks to the Industrial Revolution, large capital inflows from abroad, mainly from Germany, the United Kingdom (UK), France, and the Netherlands, benefited from Switzerland’s hard-working local labor force, which before had looked for employment opportunities abroad, mainly in foreign military service.

During the seventeenth century, the Netherlands had already developed the joint-stock company, which was the ideal legal form to collect venture capital to finance shipping. The steam engine had already been invented in the UK when Switzerland’s first modern Constitution was established, providing the legal basis for the nation’s modern corporations, banks, and insurance companies. They were instrumental in collecting local savings and importing capital (mainly venture capital) to finance roads, railways, and industries. Modern learning centers, like the Federal Technical School (ETH) Zurich, educated engineers, managers, and other skilled workers. Stock

exchanges, the first founded in Geneva in 1850, collected and redirected capital flows. To facilitate cross-border transactions, Switzerland became a member of the Latin Currency Union in 1865.

The Industrial Revolution of the nineteenth century was market-driven, with little interference from the federal government, as evidenced by relatively liberal statutes for banks, insurance companies, stock exchanges, and savings institutions. It was only during the first decade of the twentieth century that Switzerland founded its central bank and created the nation's currency, the Swiss franc. The Latin Currency Union's collapse induced the start of a full-fledged national currency in 1927, the birthdate of what was to become the strongest currency in the world. The Swiss franc's first stern test was only a few years later when the world suffered severe recessions and depressions during the early 1930s. The Swiss economy absorbed competitive devaluations by some of Switzerland's major trading partners, and the Swiss National Bank (SNB) resisted devaluing the franc for almost half a dozen years at a high cost to the economy.

Thanks to the Bretton Woods gold-exchange standard, introduced after World War II, the Western World started its impressive economic recovery. Switzerland's stable monetary environment, functioning financial system, and an economy unharmed by the war were instrumental in allowing it to become one of the world's wealthiest and most prosperous countries. When President Richard Nixon cut the dollar's link to gold in 1971 and the Swiss franc was free to float, its exchange rate value strengthened materially. From a fixed value of CHF 4.30 to 1 US\$, the franc appreciated and became stronger than the dollar, reaching CHF 0.96 per US\$ 1.00 in August 2022.

Unfortunately, the Swiss franc's increasing strength, among other things, encouraged large Swiss banks to adopt Wall Street's casino mentality, tempted by the chance to make a quick buck. Huge losses materialized and led to the sacrifice of financial freedoms, which were hallmarks of Switzerland's financial, social, and economic systems. Swiss banks' misbehavior led to a massive wave of regulations, vast losses, and the imposition of foreign rules and regulations.

The first edition of *Swiss Finance* was published about a decade ago. At that time, its full name was *Swiss Finance: Capital Markets, Banking, and the Swiss Value Chain*. Albeit slightly, we changed the second edition's name to reflect the growing importance of digitalization. Think of how far we have come from the days when transferring information involved using hand-written messages that were copied with carbon paper and delivered by mail and, before that, by horse.

Digitalization has increased the efficiency, accuracy, and speed of financial transactions but has also amplified the risks of cyberattacks and industrial espionage. If financial success is based on “trustworthiness,” our new digital world with blockchain technology has stretched the boundaries of what might be considered “normal.” In the past, bills and coins were the trusted means of payment, with checks and credit cards following closely behind. Today, cryptocurrencies and tokens are becoming increasingly familiar as means of payment, units of account, and stores of value. Reacting to this development, central banks have entered this playing field by offering central bank digital currencies (CBDCs), which have the potential to replace banking as we know it. Even without central bank involvement, distributed ledger, blockchain, and related technologies have the power to cause paradigm changes in banking and financial interactions.

During the past decade, the world has faced considerable volatility due to:

1. China’s emergence as a candidate for becoming the world’s largest economy,
2. European debt crises,
3. Brexit,
4. Russia’s two-time invasion of Ukraine,
5. COVID-19 and other pandemics, and
6. Recent increases in global inflation.

For nearly a decade, central banks dramatically increased their nations’ or currency areas’ monetary bases to stave off recessions, but in 2022, inflation has reared its ugly head, forcing monetary authorities and governments to pivot, reversing or moderating their expansionary policies, with unknown consequences.

Currency values have fluctuated with intense pressures. As early as 2012, the euro crisis prompted Mario Draghi, European Central Bank President at the time, to say, “Within our mandate, the ECB is ready to do whatever it takes to preserve the euro. And believe me, it will be enough.”¹ After that, “whatever it takes” became a catchphrase for nations facing debt crises and central banks trying to save their currencies from staggering depreciations or appreciations. For Switzerland, the franc’s appreciation forced the SNB to face the difficult choice of intervening and causing rapid increases in the nation’s monetary base or allowing the franc to rise. Intervention to lower the franc’s

¹ European Central Bank, Verbatim of the Remarks Made by Mario Draghi, <https://www.ecb.europa.eu/press/key/date/2012/html/sp120726.en.html> (Accessed on August 30, 2022).

value would have increased potential inflationary threats, but allowing it to rise could have priced Swiss goods and services out of international markets.

As was the case a decade ago, we continue to believe that “unencumbered capital markets allocate financial resources to their best value-creating uses for the growth and prosperity of the world.” We agree that some restrictions must be placed on the actions of private financial market participants. We also believe that Swiss taxes and limitations on investments by pension funds, insurance companies, and mutual funds have diverted capital from areas that contribute most to Switzerland’s long-term growth and development. The economic value of “venture capital” and “start-ups” is now well-recognized, which is why these two expressions have become common household terms.

Ten years ago, we criticized Switzerland as a nation where economic and financial policies were reactive more often than proactive, “responding to urgent needs rather than anticipating them.” Critics may argue that the same is true now, but we believe Switzerland has made progress liberalizing access to its financial system, gaining entry to foreign financial systems, and taking a leading role in developing blockchain assets. Swiss banking secrecy, as the world once knew it, is gone for non-Swiss residents but remains vital for Swiss residents.

A decade ago, we described Switzerland as a nation “caught on the horns of a dilemma, forced to decide if it should stick with customs and practices that made it a financial powerhouse during the twentieth century or adapt to a new world paradigm.” We were wrong. The idea that Switzerland had a choice was overstated because the nation had little or no choice if it wanted to remain relevant. Given the size and force of international financial and trade flows, political or financial hesitation would have overwhelmed Switzerland, making it a backwater island for international trade and finance. The Swiss public has earned significant rewards from its world-class financial system. The benefits have been clear, but looking forward, so are the risks of not keeping pace with major global competitors, particularly with the significant growth of Asian countries.

Switzerland’s relatively high labor costs continue to force the nation toward goods and services that require technological innovations and away from unsophisticated bulk products. For this reason, we again stress the need for continued venture capital investments, understanding that patience is needed because their payoffs often come more than a decade in the future. Exposure to international competition has helped Switzerland increase the skills and competence of its financial institutions, but it has also led to the adoption of Casino-like mindsets that can lead to financial disasters.

During the past 20 years, global competition among banks, insurance companies, and broader capital markets has intensified. Financial intermediaries, such as banks and insurance companies, now offer similar products and merge, benefiting from each other's comparative advantages. Over-the-counter and exchange-traded financial derivatives compete with insurance companies and other financial institutions. Switzerland's banking, insurance, and capital markets bear strong witness to this worldwide convergence trend. Financial evolution has drawn together financial products and institutions and intensified competition among insurance/reinsurance companies, investment banks, commercial banks, and an array of shadow-banking institutions. Customized products have become more standardized, and standardized products have become more customized, leaving the competitive intersection up for grabs.

During the past four decades, Switzerland's financial system has been transformed from a disconnected assortment of trading, clearing, settlement, and payment systems into a wholly integrated and fully automated electronic securities trading and post-trading infrastructure operated and managed by the SIX Group.

Chapter 2: *Finanzplatz Schweiz (Finance Center Switzerland)* explains the origin, governance, and operation of the SIX Group, which is responsible for connecting financial market participants in Switzerland, Spain, and worldwide. It describes how the SIX Group's four major business areas (i.e., Exchanges, Security Services, Financial Information, and Banking Services) have fortified and enhanced Switzerland's domestic and international securities and payment value chain. Significant improvements have been made in trading, clearing, settlement, custody, security administration, payment transactions, debt instruments, derivatives, exchange-traded funds and products, sponsored funds, crypto-structured products, and tax services for equities. The SIX Group has encouraged financial innovations, reduced costs, improved market access, promoted collaborations, and created a shareholder structure based on the "user-owned, user-governed" principle. Chapter 2 highlights why "Finanzplatz Schweiz" (i.e., *Finance Center Switzerland*) is not a destination but a journey, which Switzerland began about four decades ago and continues today. It explains why keeping pace with changing global demographics, financial trends, and payment systems will take careful and concerted steps, particularly with the threat that DLT platforms could make existing fixed assets (e.g., buildings, computers, and software) and human resource skills obsolete.

Chapter 3: *The Swiss Banking System* focuses on recent events that have shaped the most visible part of Switzerland's financial sector. It discusses the

nine categories of Swiss banks and their structure, economic value-added, profitability, on- and off-balance-sheet activities, rivalries, universal banking system, structure, and relative international position. This chapter explains how Switzerland's financial system has overcome significant competitive challenges and why the future portends many more to come.

Chapter 4: *Swiss Bank (Customer) Secrecy & the International Exchange of Information* chronicles and describes the seismic changes that Switzerland made in its bank secrecy laws and practices—practices that can be traced back more than 300 years before Switzerland was a nation. Switzerland has moved from a time when information exchanges were based on bilateral double taxation treaties to multilateral disclosure agreements that provide for the automatic exchange of bank customer information. In 1934, Switzerland's *Banking Act* criminalized confidentiality breaches, but since then, the nation has moved decisively toward liberalization. This chapter explains how Switzerland's information disclosures to foreign tax authorities have been influenced by the interplay of its Constitution, laws governing the disclosure of bank customer information, and international pressures toward greater transparency and automatic information exchanges. The nation has aimed to balance an individual's right to privacy with the legitimate informational rights of society and third parties. These pressures culminated in 2015 when the Swiss government passed the *Federal Act on the International Automatic Exchange of Information in Tax Matters (AEOIA)*. The first exchange of information under this act occurred three years later.

Illicit use of Swiss laws was instrumental in the nation's decision to abolish banking secrecy protections for foreigners.² Tax evasion, money laundering, insider trading, market and price manipulation, organized crime, financing terrorism, and corruption (bribery) were central to these negotiations and consequent legislation. Also connected were discussions about the fair treatment of whistleblowers and the effects information disclosures might have on Switzerland's neutrality, particularly after Russia invaded Ukraine in February 2022.

Chapter 5: *Swiss Financial Market Regulators and Laws* focuses on two significant areas. First, it explains the mandate, scope, organizational structure, responsibilities, and functions of Switzerland's primary financial regulator, the Financial Markets Supervisory Authority (FINMA). Even though the SNB is not a major financial regulator, it has regulatory authority and functional obligations relative to Switzerland's financial institutions, which are also explained. The second focus of this chapter is explaining the legal

² Bank secrecy protections for Swiss residents remain.

basis for Switzerland's financial system at the federal level. Having fair, transparent, and effective financial laws is crucial for ensuring Switzerland maintains its reputation as a credible, safe, and stable destination for financial investments.

Chapter 6: *Swiss Institutional Investors* focuses on large financial intermediaries, such as insurance companies, pension funds, real estate funds, real estate investment companies, and mutual funds that have become enormous sources of investment capital. Important in this discussion is Switzerland's social security system and the three pillars on which it rests, which are (1) the state-run basic benefit plan, (2) the mandatory occupational pension scheme, and (3) private savings. Due to an aging Swiss population and global GDP growth, the pool of funds managed by institutional investors during the past 30 years has grown dramatically, with multi-trillions of Swiss francs invested domestically and globally. Their swift advance and sheer size have raised serious concerns about whether Switzerland's regulators and legal framework can properly regulate institutional investors' activities. The stakes are high because the power to invest is the power to influence (significantly) a nation's growth and prosperity. Funds directed toward plant, equipment, and technology investments are the basis for a nation's long-term prosperity. Switzerland's Parliament recognized this cause-and-effect relationship when it decided, in late 2013, to support the "Graber Motion," recommending the establishment of a fund that would allow Swiss pension funds to invest in venture capital. This chapter also covers the competitive environment facing institutional investors, which is becoming increasingly complex because financial intermediaries are crossing traditional lines in their search for new customers. Digitalization has upped the stakes significantly, increasing this new competition's speed, efficiency, and range.

Chapter 7: *Swiss National Bank & Swiss Franc's Role in Global Financial Markets* explains the many facets of Switzerland's independent central bank. For years, it has walked a razor's edge, trying to provide sufficient liquidity to the market on the one side and, on the other, keeping Swiss interest rates and the franc's international value at competitive levels. This chapter covers the SNB's mandate, goals, responsibilities, profitability, organization, monetary policy instruments, changing asset and liability structures, and strategies. In addition, it explores issues related to environmental sustainability, FinTech, financial institutions that are "too big to fail," and digitalization (including cryptocurrencies, central bank digital currencies). Chapter 7 summarizes the SNB's monetary targets from 1944 to July 2022. These changing targets reflect the SNB's goals of low inflation, with an eye toward exchange rate stability. They are aided by the nation's prohibition on the SNB lending

directly to the federal government, its intent to maintain political neutrality, and Switzerland's resolve to keep direct democracy, moderate taxes, and fiscally disciplined governments (federal, cantonal, and municipal).

Chapter 8: *Swiss Debt Markets* covers one of the traditionally largest segments of Switzerland's financial market. The combination of strong foreign capital inflows, a high national saving rate, restrained government borrowing, and a relative scarcity of domestic investment opportunities has caused Switzerland to develop world-class investment and diversification skills capable of redirecting surplus funds globally. For years, Switzerland's debt market has been slightly lopsided, tilted toward medium-to-long investments. The causes have been Switzerland's tax disincentives (e.g., federal stamp and withholding taxes). In the future, it will be crucial for the Swiss government to consider carefully addressing this issue. Chapter 8 explains the distinguishing features and composition of Switzerland's domestic and foreign debt markets and the most active Swiss-franc public issues.

Chapter 9: *Swiss Equity Markets* explains the growth and development of Switzerland's markets for bearer shares, registered shares, participation certificates, and non-voting equity shares, particularly during the past three decades. This period is characterized by increased global competition, delisted foreign securities on Swiss exchanges, increased concentration by Switzerland's largest companies, and the growth of structured products. Together, they have raised concerns about new risks and Switzerland's ability to maintain its strong position relative to competitor nations. Chapter 9 covers the major types of investors, transactions (e.g., IPOs, secondary issues, and going private, which involves delisting shares), and sectors responsible for most public offerings. It also discusses listing requirements for Swiss equities, trading activities, and stock market performance (absolute and relative to foreign nations). Venture capital is given prominence because we believe it is the source (often not appreciated) of Switzerland's ability to grow economically and stay relevant in global markets that are storming ahead.

Chapter 10: *Swiss Derivative Markets* describes Switzerland's over-the-counter and exchange-traded markets for financial derivatives. Focus is put on the Swiss SIX Exchange and German-based Eurex. The US-led financial crisis from 2007 to 2009 dramatically influenced Switzerland's derivative markets' evolution. Chapter 10 explains the primary drivers of this growth and the major federal acts that regulate Swiss derivative activity. It highlights the most active derivatives in OTC- and exchange-traded markets. Derivatives have helped to tear down traditional walls that separated banking, insurance, and capital market transactions. Securitization has allowed customized contracts

to be bundled, packaged, tranced, and sold in the capital markets as standardized financial instruments. They have allowed individuals facing credit risks to reduce risks by transferring them to those (hopefully) better suited to carry them. Plain vanilla debt instruments have been combined with puts and calls to create financial products with insurance-like features. Unfortunately, the growth of derivatives and structured products has also enabled companies with little or no risk exposures to increase them, resulting in the creation of financial products that bear no relationship to value creation.

Chapter 11: *Financial Digitization, FinTech, and the Collaborative Economy* addresses one of the newest and most dynamic segments of Switzerland's financial markets. Digitalization, artificial intelligence, big data, machine learning, smart contracts, data analytics, distributed ledger technologies, robotics, biometrics, and gamification are just a few ingredients spurring the FinTech revolution and breaking up existing value chains. Open banking, open finance, and embedded finance are how these ingredients have been integrated into products and services, enabling customers to slice, dice, and customize them to satisfy the full range of their needs. The result has been innovative cross-selling opportunities, collaborations, outsourcing, mergers, and acquisitions that are changing the traditional structure of Swiss and global financial markets. Today, discussions of FinTechs, InsurTechs, and RegTechs are commonplace in business periodicals. Not only do customers of financial institutions have a new array of products and services available, but they also have the flexibility to decide when and how to access them. Chapter 11 identifies seven business model archetypes for the banking sector, four archetypes of strategic positioning, four key product areas, and three categories of technological approaches. The matrix of possible combinations and how they have changed over time provide a glimpse into the directions in which Swiss finance is moving. Switzerland's 2021 launch of the SIX Digital Exchange (SDX), the first regulated digital exchange worldwide, is proof of the nation's seriousness regarding this financial sector. SDX has been used to test central bank digital currencies and eNotes, which are short-term debt instruments based on a blockchain infrastructure.

Chapter 12: *Swiss Taxes on Investments and Financing* draws readers' attention to the nation's three-level tax system, federal, cantonal, and municipal, each getting about a third of the country's total taxable income. Because cantonal and municipal taxes are such large portions of an individual's tax bill, there can be considerable differences in the tax burden, depending on one's residence within the country. Focus is put on the nation's taxes affecting the finance markets:

- Federal withholding taxes,
- Federal and cantonal stamp duties,
- Personal income and capital gains taxes,
- Corporate income and capital gains taxes, and the
- Value-added tax.

This book describes Switzerland's financial markets as they exist today but refers again and again to the past to make the present more understandable. The main pillars of Switzerland's financial foundation continue to be its political, social, and economic stability, high saving rate, sound infrastructure, and currency strength. Its well-functioning legal system stems directly from the nation's democratic and federalist heritage.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.





2

Finanzplatz Schweiz: *Finance Center Switzerland*

Introduction

During the past forty years, Switzerland's financial system has been transformed itself from an outdated assortment of trading, clearing, settlement, and payment systems into Finanzplatz Schweiz (i.e., Finance Center Switzerland), a wholly integrated and fully automated electronic securities trading and post-trading infrastructure operated and managed by the SIX Group.¹ Doing so meant modifying and modernizing Swiss regulators and regulations because the nation's financial system competes in a high-stakes global environment where survival is based not only on successful risk management, but also on state-of-the-art handling of financial instruments, such as equities, bonds, derivatives, exchange-traded funds, and, now, blockchain assets. Customers expect ever-improving financial depth, breadth, and sophistication. To succeed, their transactions need to be executed in the blink of an eye, with massive amounts of financial information flowing securely in fractions of seconds. At the same time, regulations and tax rates cannot be so costly and burdensome that they become obstacles to international competition. To be an effective global competitor, Switzerland needs thoughtful regulations that are internationally accepted, so Swiss financial intermediaries are granted access to foreign nations' customer bases, and vice versa.

¹ "SIX" is an abbreviation for Swiss Infrastructure Exchange.

SIX Group

The SIX Group operates Switzerland's domestic financial infrastructure and has a broad international customer base. It was created in 2008 by the merger of three bank-operated businesses: SWX Group² (securities trading), SIS Group³ (securities services), and SIX Financial Information.⁴ Bundling these three financial intermediaries together was to guarantee optimal and sustainable services to customers by⁵:

- Fortifying Switzerland's financial market infrastructure by enhancing both efficiency and innovation across the entire value chain;
- Strengthening Switzerland's international competitive position by concentrating capital, encouraging innovation, enhancing governance, and reducing costs by increasing volumes (i.e., via economies of scale);
- Collaborating with international partners;
- Building an architecture that guarantees open access to trading (i.e., digital, online, and free-of-charge), clearing, and settlement⁶; and
- Creating a shareholder structure geared toward long-term stability by employing the "user-owned, user-governed" principle.

Since its founding, the SIX Group's major subsidiaries have been vital pillars of Finanzplatz Schweiz, handling Switzerland's entire securities and payment value chain.⁷ The SIX Group provides straight-through processing (STP) for security trading, transaction execution, and post-trade services, such as clearing, settlement, and custody. Transactions are processed from beginning to end electronically and automatically with no manual handling.

The SIX Group also disseminates high-quality financial information, provides reporting services, processes card-based payment transactions and interbank payments in Swiss francs and euros, and offers services for retail

² "SWX" is an abbreviation for Swiss Exchange (i.e., the trademark of SWX Swiss Exchange).

³ "SIS" is an abbreviation for SegInterSettle.

⁴ SIX Financial Information was formerly called Telekurs Group and discontinued in April 2012.

⁵ SIX Securities Services, Homepage, www.six-securities-services.com/dss/ (Accessed on June 17, 2022).

⁶ "Trading" is the buying and selling of assets, such as equities, bonds, exchange-traded funds, structured products, sponsored foreign shares, and digital assets. "Clearing" is the process of validating a buyer's margin and finalizing financial transactions between buyers and sellers, which occurs after a trade is executed. "Settlement" is the actual exchange of money and securities between the parties of a trade, i.e., the process of transferring securities into the account of a buyer and transferring cash into that of the seller.

⁷ The SIX Group has won numerous international awards for the quality of its financial services. SIX, Awards, <https://www.six-group.com/en/company/awards.html> (Accessed on June 18, 2022).

payments, such as debit advice procedures and electronic bill presentment and payment. Since the acquisition of Bolsa de Madrid Exchange (BME) Group in 2020, SIX Group has operated BME's infrastructure as well. And it is also breaking new ground with the world's first end-to-end exchange for digital assets, SIX Digital Exchange (SDX).

The SIX Group is user-governed and supervised by and accountable to the Swiss *Federal Finance Market Supervisory Authority (FINMA)* and the *Swiss Financial Market Infrastructure Act (FinMIA)*. Therefore, even though the SIX Group has the authority to issue, monitor, and enforce regulations related to (1) listing securities, (2) company disclosures and obligations, and (3) market surveillance and enforcement, its powers and actions must follow Swiss laws and are subject to the FINMA's approval.

SIX Group Shareholders

The SIX Group is an unlisted, public,⁸ and limited company domiciled in Zurich, owned by 120 national and international financial institutions that are also the main users of its services.⁹ In 2021, Switzerland's big banks (i.e., UBS, UBS Switzerland AG, Credit Suisse, and Credit Suisse Switzerland Ltd.) were the SIX Group's largest shareholders (34.5%), followed by Commercial and Investment Banks (17.6%), Foreign Banks (15.2%), Cantonal Banks (14.2%), Regional and Raiffeisen-Banks (8.5%), Others (4.1%), Own Shares (3.1%), and Private Banks (2.9%)¹⁰ (see Fig. 2.1). To promote sustainability and stability, the shares of SIX Group can only be transferred with the approval of the Board of Directors, and no shareholder or shareholder group owns an absolute majority.¹¹

SIX Group's Employee Structure and Business Areas

At the end of 2021, the SIX Group had a team of 3826 employees and conducted business in 21 countries, with 60.3% of its staff working in Switzerland, 35.9% in Europe (approx. 21% in Spain), and 3.8% in other

⁸ The Six Group was demutualized in 2002.

⁹ SIX, Drive! The Future of Finance Is Now, Ibid.

¹⁰ Ibid.

¹¹ SIX Group. Company. Governance. Corporate Governance. www.six-group.com/en/company/governance.html (Accessed on July 16, 2022).

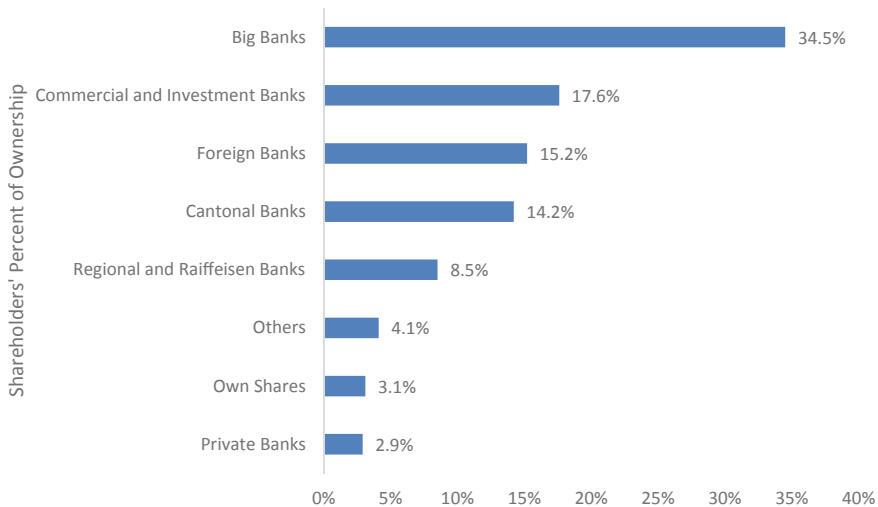


Fig. 2.1 SIX Group shareholder structure in 2021 (Source SIX, ownership structure of SIX, <https://www.six-group.com/en/company/governance.html> [Accessed on June 17, 2022]). Due to rounding, the sum is slightly different from 100%)

nations and regions, such as the United States, South America, and North Africa (see Fig. 2.2).¹²

Figure 2.2 shows the four main business areas in which the SIX Group is involved: *Exchanges*, *Securities Services*, *Financial Information*, and *Banking Services*.

Key Figures of the SIX Group and Its Business Units

Table 2.1 shows the income statement of SIX Group for the years 2020 and 2021. The COVID-19 epidemic (2020–2022+) posed special challenges for the SIX Group. Nevertheless, it managed to endure, increasing operating income and EBITDA in 2021 by 8.9% and 14.8%, respectively. One explanation for these robust results was the change in consumer payment behavior from cash to cashless payments, as the COVID-19 pandemic discouraged face-to-face transactions.

¹² SIX Group. 2022. *SIX Group Annual Report 2021*. https://reports.six-group.com/download/2021AR/en/SIX_Annual_Report_EN.pdf (Accessed on July 27, 2022) and SIX Group. 2022. Drive! The Future of Finance Is Now. <https://www.six-group.com/dam/download/company/publications/six-drive-2022-en.pdf> (Accessed on July 27, 2022).

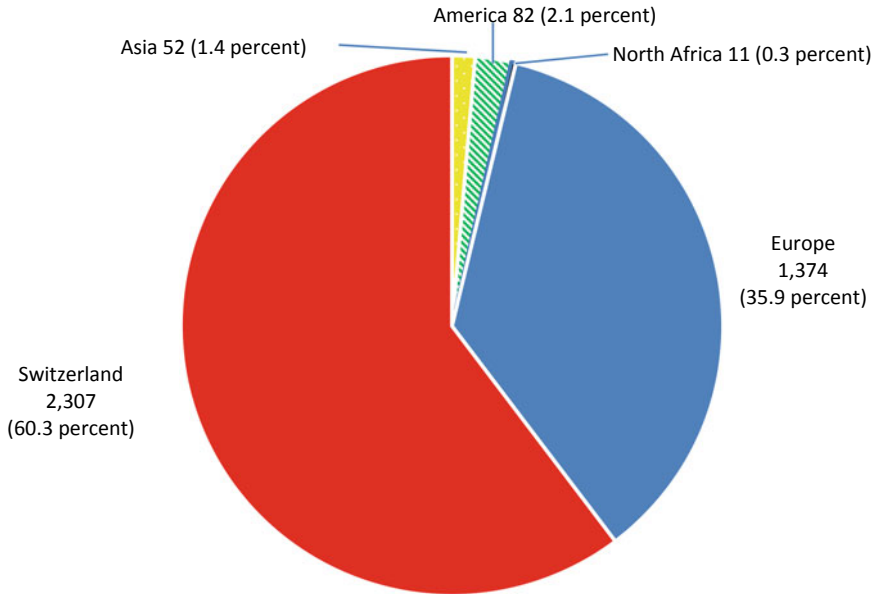


Fig. 2.2 Employee structure at SIX: number of employees and as percent of total (year end 2021) (Source SIX Group. 2022. *SIX Group Annual Report 2021*. https://reports.six-group.com/download/2021AR/en/SIX_Annual_Report_EN.pdf [Accessed on July 27, 2022])

Electronic and digital payments grew by 27% in 2021,¹³ a year in which the SIX Group also benefited from organic growth and from the new business in Spain, following the successful acquisition of BME, which contributed for the first time to the group's income for a full 12 months period.¹⁴ The return on average equity as of December 2021—calculated with the adjusted net profit for that year—was 3.3%, compared to 2.6% for 2020.¹⁵ Adjusting SIX Group's equity (2021: CHF 5.2 billion, 2020: 5.3 billion) for excess cash (2021: CHF 3.6 billion, 2020: CHF 4 billion), however, significantly increases returns on average equity to more than 10% in each of these two years, reflecting the operational and competitive strengths of SIX Group

¹³ SIX Group. 2022. *Full-Year 2021 Financial Results*. <https://www.six-group.com/dam/download/company/report/annual/2021/six-fy-2021-media-presentation.pdf> (Accessed on June 27, 2022).

¹⁴ SIX Group. 2022. *SIX Group Annual Report 2021*. https://reports.six-group.com/download/2021AR/en/SIX_Annual_Report_EN.pdf (Accessed on July 27, 2022).

¹⁵ Given the return on average equity for 2020 and 2021 with unadjusted net profit in the Annual Report (2021: 1.4%, 2020: 8.9%), average equity is derived. SIX Group. 2022. *SIX Group Annual Report 2021*. https://reports.six-group.com/download/2021AR/en/SIX_Annual_Report_EN.pdf (Accessed on July 27, 2022).

Table 2.1 SIX Group's consolidated income statement: 2020 and 2021

In CHF Million	FY 2021	<i>As percent of total operating income*</i>	FY 2020	<i>As percent of total operating income*</i>	Δ as percent
Total operating income	1498.3	100.0%	1375.9	100.0%	+8.9%
Total operating expenses	-1076.6	-71.9%	-1008.6	-73.3%	+6.7%
EBITDA (earnings before interest, taxes, depreciation, and amortization)	421.7	28.1%	367.3	26.7%	+14.8%
Depreciation, amortization, and impairment	-173.6	-11.6%	-141.9	-10.3%	+22.3%
Operating profit	248.0	16.6%	225.4	16.4%	+10.0%
Net financial result	1.3	0.1%	273.8	19.9%	
Share of profit or loss of associates and joint ventures	-102.1	-6.8%	15.7	1.1%	
EBIT (earnings before interest and taxes)	147.2	9.8%	515.0	37.4%	-71.4%
Net interest expenses	-10.3		-11.9		-13.4%
EBT (earnings before taxes)	136.9		503.0		-72.8%
Income tax expenses	-63.4	46.3%*	-64.8	12.9%*	
Group net profit	73.5		438.2		-83.2%
Group net profit adjusted for the effects from the participation in worldline	174.7		127.3		+37.2%

* Tax rate: Income tax expense/EBT

Source SIX Group. *SIX Group Annual Report 2021*. 2022. https://reports.six-group.com/download/2021AR/en/SIX_Annual_Report_EN.pdf and SIX Group. *Full-Year 2021 Financial Results*. <https://www.six-group.com/dam/download/company/report/annual/2021/six-fy-2021-media-presentation.pdf> (Accessed on June 27, 2022)

and indicating that shareholder value creation will depend significantly on management's future capital allocation decisions.

The results for 2020 and 2021 are affected by special items in connection with the investment in Worldline. In 2021 the announcement of the sale of Worldline's Terminals, Solutions & Services (TSS) business resulted in a negative effect due to an impairment charge. In contrast, the partial sale of the stake in Worldline¹⁶ and the merger of Worldline with the payment services provider Ingenico had a positive impact on the 2020 net financial income.¹⁷ As the last line in Table 2.1 shows, profit after tax adjusted for this special effect increased by 37.2% from 2020 to 2021.¹⁸

Russia's invasion of Ukraine, which started in late February 2022, also posed special challenges for the SIX Group. It led many European countries to bar Russian access to their credit markets, thereby threatening this aggressor with acute liquidity shortages. Euroclear and Clearstream reacted by removing the ruble as an eligible settlement currency for transactions inside or outside Russia. In March 2022, Switzerland adopted the EU's restrictions against Russian banks' access to SWIFT, blocked the assets of Russian individuals, and banned exports that could contribute to Russia's military and technological enhancement. By April 2022, Switzerland had frozen Russian-sanctioned assets worth more than CHF 7.5 billion and banned transactions with the Russian central bank.

SIX Group has four business units, Exchanges, Securities Services, Financial Information, and Banking Services. To get an impression of the relative size of the four operating business units and their profitability, Fig. 2.3 shows the data for sales and profits. Banking Services is the smallest business unit and the one with the lowest profit margin in relation to total operating income. While the margin was negative in 2021, it reached positive territory (6%) in 2021 due to revenue growth of 8.3%. Significant growth in interbank payments via Swiss Interbank Clearing (SIC) (+23%) and in eBill transactions (+27%) contributed to the growth in operating income.

Securities Services achieved the highest growth rates from 2020 to 2021. Operating income grew 16.9% and profit 23.2%. The high growth rates were due to the international expansion, record volumes of outstanding trades on

¹⁶ In April 2020, SIX Group disposed of 10.1 million shares in Worldline SA (approx. 6% of the share capital). SIX Group holds 18.8% of the voting rights as of December 31, 2021 (31 December 2020: 18.9%) and has three representatives in the Board of Directors of Worldline SA. SIX Group. *SIX Group Annual Report 2021*. https://reports.six-group.com/download/2021AR/en/SIX_Annual_Report_EN.pdf (Accessed on July 27, 2022).

¹⁷ Both opposing effects in net financial income also have an impact on the income tax expense.

¹⁸ SIX Group. 2022. *Full-Year 2021 Financial Results*. <https://www.six-group.com/dam/download/company/report/annual/2021/six-fy-2021-media-presentation.pdf> (Accessed on June 27, 2022).

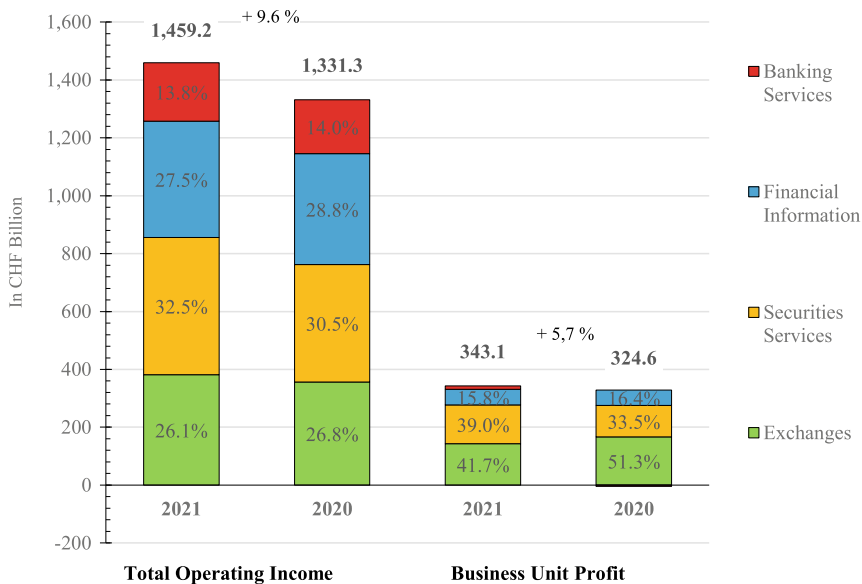


Fig. 2.3 Operating income and business unit profit for the four business units (excluding corporates*): 2020 and 2021 (in CHF Million and as Percentage of Total) (*Note Corporates are not included in the figures. This explains the difference in total operating income and the sum of business unit profits [i.e., operating profit] compared to Fig. 2.4. Corporates include Corporate IT services and activities that support the group as a whole: Risk Management, Legal and Compliance, Finance and Services, Human Resources, Marketing and Communications, as well as SIX Exchange Regulation; *Source* SIX Group. 2022. *SIX Group Annual Report 2021*. https://reports.six-group.com/download/2021AR/en/SIX_Annual_Report_EN.pdf [Accessed on July 27, 2022] and SIX Group. 2022. *Full-Year 2021 Financial Results*. <https://www.six-group.com/dam/download/company/report/annual/2021/six-fy-2021-media-presentation.pdf> [Accessed on June 27, 2022])

the Swiss repo market, and the complete takeover of European trade repository Regis TR. Profitability in this business unit amounted to 28.2% in 2021 (2020: 23.2%).

Exchanges was the business segment with the highest profitability (2021: 37.5%), though the margin deteriorated compared to 2020, where it reached 46.7%, a year which included for the first time a full 12 months of BME earnings. Against the backdrop of macroeconomic uncertainties, trading volumes in Switzerland and Spain declined by 27% resp. 12%, but there was an increase in IPOs on both exchanges (SIX and BME) compared to the previous year.

Financial Services operating income grew by 4.9% due to the contribution of the core business that sells reference and pricing data and information on corporate actions. The business unit also expanded its data offering of

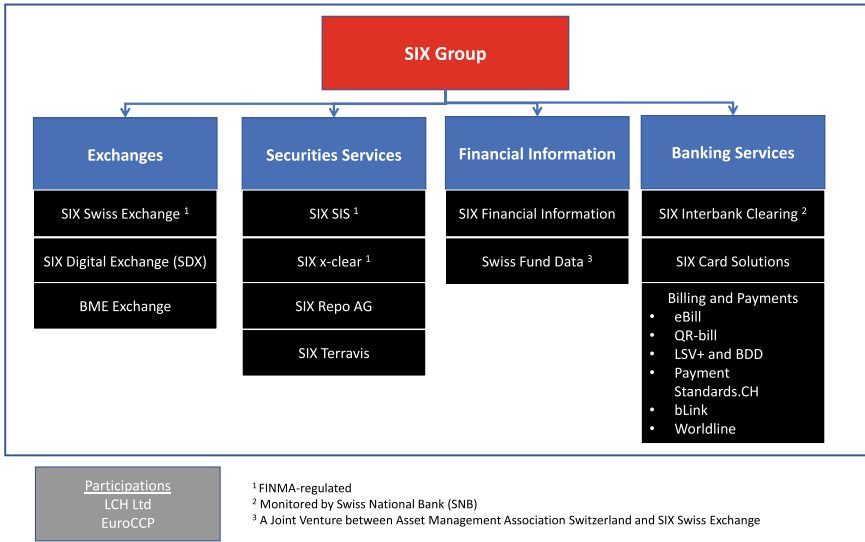


Fig. 2.4 SIX Group's major business areas (Source SIX, overview of SIX: integral structures ensure strategic success, <https://www.six-group.com/en/company.html> [Accessed on June 18, 2022])

indices and ESG data resp. ESG regulatory data. The profit-to-operating-income ratio is 13.5%, somewhat like in 2020.

Organizational and Management Structure of SIX Group

Figure 2.4 provides the organizational and management structure of SIX Group, as shown in the financial report for the years 2021 and 2022.¹⁹

- *Exchanges*: SIX Group Exchanges operate the SIX Swiss Exchange, offering security listing, trading, settlement, and custody services all under one roof. It also manages the SIX Digital Exchange (SDX), which trades digital products, and Spain's Bolsa de Madrid Exchange (BME).
- *Securities Services*: SIX Group Securities Services offer post-trade securities services in more than 50 countries, including clearing, settlement, custody, collateral management, and repo transactions.
- *Financial Information*: SIX Group Financial Information collects and publishes reference statistics, pricing information, corporate action data, regulatory services figures, and indices.

¹⁹ SIX Group. 2022. *SIX Group Annual Report 2021*. https://reports.six-group.com/download/2021AR/en/SIX_Annual_Report_EN.pdf (Accessed on July 27, 2022).

- *Banking Services:* SIX Group Banking Services support financial institutions with innovative services, such as digitalized payment services, debit card and mobile payment solutions, and interbank payment processing facilities.

The following sections explain the SIX group's major business areas, as outlined in Fig. 2.4.

Exchanges

The SIX Exchanges are platforms for investors and traders to trade securities across a wide range of asset classes. The SIX Group operates three exchanges, two in Switzerland, called SIX Swiss Exchange, and SIX Digital Exchange and the other in Spain, called Bolsa de Madrid Exchange (BME). The business unit exchanges comprises services for listing and trading securities, and the distribution of raw market data and index products. It provides a cash market for trading in shares, private and public debt, warrants, funds, financial and electricity derivatives, exchange-traded products (ETPs), securitized derivatives, and warrants. Service revenues are generated for access, admission of securities to trading and ongoing listing, as well as for the distribution of raw market data and index products.

SIX Swiss Exchange

Since its foundation in 1995, the SIX Swiss Exchange has consistently evolved its product offering, as well as its technical trading and settlement infrastructure. It is a self-regulated organization that lists more than 50,000 Swiss and global equities, bonds, exchange-traded funds, sponsored funds, and structured products, such as 200 crypto products providing access to 17 cryptocurrencies. Its straight-through processing of transactions supports customers from listing to trading to post-trade services. The latter include clearing, settlement, and tax services. SIX Swiss Exchange also provides considerable liquidity in “lit-book” and “non-displayed pool” transactions.²⁰

²⁰ “Lit book” on-market trades are for “board lot orders” (i.e., trades with a predefined number of shares). “Non-displayed pool” activities are for dark pool transactions (i.e., trades done directly between buyers and sellers without using the exchange).

The SIX Group's current corporate strategy dates from November 2017, when its Board of Directors decided on strategic and organizational adjustments to strengthen the competitiveness of the SIX organization and Finanzplatz Schweiz (i.e., Finance Center Switzerland). With the strategic realignment, focus was on SIX Group's core businesses to provide infrastructure services for its shareholders and the financial center (i.e., securities business, payment transactions, and financial information). Two strategic thrusts emerged from this strategy, namely (1) international expansion and (2) technical innovation, to secure the SIX Group's position as one of the leading infrastructure providers for capital markets.²¹

SwissAtMid

SwissAtMid is SIX Swiss Exchange's on-exchange vehicle for wholesale (i.e., block) trades. To qualify, traded quantities must exceed a minimum threshold set by the exchange. By matching the bulk orders of buyers and sellers, individuals and businesses can reduce the chances of price slippage by communicating to the market large orders. SwissAtMid combines both open and non-displayed orders to execute equity trades at the midpoint of the Swiss Stock Exchange's lit order book. Indicative (conditional) orders are non-binding and made by bulk traders to indicate market demand and supply. Binding (firm) orders must be transacted at the midpoint price.²²

SIX Exchange Regulation (SER)

SIX Exchange Regulation is responsible for monitoring and enforcing rules and regulations that govern issuer and participant behavior on the Swiss Stock Exchange.²³ To maintain its strong oversight profile (both in practice and appearance), SER is organized as an autonomous entity within the SIX Group. SER reports to the Chairman of the Board of Directors of the SIX Group, is subject to the *Swiss Federal Act on Financial Market Infrastructures*

²¹ SIX Group. *SIX Focuses Its Strategy and Simplifies Its Organizational Structure*. SIX blog post of January 3, 2022. <https://www.six-group.com/en/blog/2018/six-2020.html> (Accessed on July 27, 2022).

²² SIX, SwissAtMID: Now with New Block Orders, Undated, SwissAtMid: Non-displayed Pool of Liquidity | SIX ([six-group.com](https://www.six-group.com)) (Accessed on July 15, 2022).

²³ SIX, SER, SIX Exchange Regulation ([ser-ag.com](https://www.ser-ag.com)) (Accessed on June 22, 2022). <https://www.ser-ag.com/en/home.html> (Accessed on June 20, 2022).

and Market Conduct in Securities and Derivatives Trading (FinMIA) and is supervised by the FINMA.²⁴

The legal provision of self-regulation under the supervision of FINMA is implemented through the separation of responsibilities between the regulatory board and SER. Regulations for issuers, participants, and traders, which are set by the regulatory board, must be approved by the FINMA. The Listing and Enforcement department of SER monitors compliance with regulations for listing and admission to trading; Surveillance and Enforcement is responsible for the supervision of price movements and trading. According to the principle of self-regulation, sanctioning processes are initiated in cases of rule violations, committed by issuers, exchange participants, traders, and reporting agents, which form the basis for adjudication. The SIX Sanction Commission can impose sanctions, such as reprimands, suspension, expulsion, revoking of registration, suspension of trading, and delisting, to fines of up to CHF 10 million.²⁵

SWXess

SWXess is the SIX Group's trading platform, providing industry-standard interfaces adaptable to all asset trading classes, allowing customers to choose their configuration, speed, and capacity of trades.²⁶ Among these interfaces are the OUCH Trading Interface (OTI), Quote Trading Interface (QTI), ITCH Market Data Interface (IMI), SIX Multidimensional Data Flux Interface (SIX MDDX), Standard Trading Interface (STI), and Reference Data Interface (RDI).²⁷

SIX Digital Exchange (SDX)

The establishment of SDX Trading AG and the SIX Digital Exchange AG in 2018 was the official starting point for the world's first holistic platform for trading, settlement and custody of tokenized assets based on the distributed

²⁴ SIX Group. Company. Governance. Monitoring and Regulation. <https://www.six-group.com/en/company/governance/monitoring-and-regulation.html> (Accessed on August 1, 2022).

²⁵ SIX Exchange Regulation. We Regulate the Swiss Stock Exchange. <https://www.ser-ag.com/en/about.html> (Accessed on August 1, 2022).

²⁶ SIX, Comprehensive Choice of Interfaces, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/trading/trading-platform/interfaces.html#:~:text=The%20SWXess%20trading%20platform%20comes,the%20most%20volatile%20market%20conditions> (Accessed on July 15, 2022).

²⁷ Ibid.

ledger technology (DLT).²⁸ In September 2021, FINMA authorized SIX Digital Exchange AG as a central securities depository and the associated SDX Trading AG as an exchange.²⁹

The SIX Digital Exchange (SDX) is a FINMA-licensed and regulated financial market infrastructure (FMI), offering a digital marketplace for securities trading, settlement, and custody for digital assets.³⁰ As part of its strategy, the SDX collaborates with technologically advanced companies that can bring value to the Swiss financial value chain. A good example of this collaboration is its relationship with FQX, a Zurich-based company using blockchain technology to build a global debt-market infrastructure. In 2021, FQX won the Swiss Fintech award for “Early-Stage Startups” and the Fintech Germany Awards for “Foreign Entrant into the German Market.”³¹ FQX is an already globalized startup with well-heeled Fintech investors and a staff of about 20 people, working in Europe and Asia.

The SDX’s digital platform offers eNotes™, which are standardized, short-term debt instruments with an unconditional promise to repay a specific sum. Single eNotes are stored as non-fungible tokens (NFTs) on a blockchain and used as financing sources. An eNote can be used for spot or forward payments. The SDX has collaborated with Zurich-based FQX AG to increase the liquidity, efficiency, and global reach of Switzerland’s financial markets.³²

²⁸ SIX Group. SIX Digital Exchange: The Securities Exchange of the Future. SIX blog post of December 12, 2018. <https://www.six-group.com/en/blog/2018/six-digital-exchange-future.html> (Accessed on July 27, 2022).

²⁹ FINMA. 2021. FINMA issues first-ever approval for a stock exchange and a central securities depository for the trading of tokens. Press release of September 21, 2022. <https://www.finma.ch/en/news/2021/09/finma-issues-first-ever-approval-for-a-stock-exchange-and-a-central-securities-depository-for-the-trading-of-tokens/> (Accessed on July 27, 2022).

³⁰ SIX, SIX Digital Exchange Gets Regulatory Approval from FINMA, September 10, 2021. <https://www.six-group.com/en/newsroom/media-releases/2021/20210910-sdx-finma-approval.html> (Accessed on July 17, 2022).

³¹ FINTECHNA, Swiss FinTech FQX AG Wins the FinTech Germany Awards 2021, September 30, 2021, <https://www.fintechna.com/press-releases/swiss-fintech-fqx-ag-wins-the-fintech-germany-awards-2021/> (Accessed June 22, 2022).

³² FQX: Blockchain-Based Securities for Regulated DeFi, <https://www.enotes.tech/> (Accessed on February 5, 2023).

BME Exchange

In 2020, the SIX Group acquired 93.16% of the shares in Bolsa de Madrid Exchange (BME),³³ an all-cash voluntary tender offer. Subsequently, shareholders representing 2.151% of BME's share capital exercised their sell-out rights, allowing the SIX Group to control more than 95%.³⁴ It was an orderly execution and settlement of a squeeze-out transaction.³⁵ Upon settlement in September 2020, the SIX Group owned 100% of the shares in BME, which were subsequently delisted from the Madrid, Barcelona, Bilbao and Valencia stock exchanges.³⁶ The BME is the operator of all stock markets and financial systems in Spain, offering services related to equities, fixed income, derivatives, clearing, settlement, market data, and value-added services, such as global regulatory reporting.

The acquisition of BME by SIX Group resulted in several advantages for both partners from the mutual complementation of their business areas. With focus on innovation and technology, BME benefited from SIX Group in terms of trading in digital assets and the associated technology. SIX Group also brought the strength from its business area Financial Information into the combined business. SIX Group's product offering was expanded with new fixed income products, derivatives, and services. Both partners benefited from the increased global reach, which meant Swiss asset managers could now use BME as a go-to Europe hub. And for its clients from Middle East, Africa, and Latin America, BME would become more attractive across all services. SIX Group further got access to EU trading and clearing solutions, as well as EU and cross-border CSD services, and to BME's emerging and growth markets network and reach.³⁷

³³ BME Group was created in 2002 through the merger of the Madrid, Barcelona, Valencia and Bilbao stock exchanges and MF Mercados Financieros and Iberclear. The group parent company is Bolsas y Mercados Españoles Sociedad Holding de Mercados y Sistemas Financieros, S.A. (BME).

³⁴ Under Spanish law, the threshold of the majority shareholder of a listed company for a squeeze-out (i.e., forced-sale of the shares of minority shareholders to enable the complete takeover by the acquiring company after a takeover offer) is 90%. SIX set a self-imposed threshold of 95%. SIX Group AG informs of its decision to exercise the squeeze out right over the remaining shares of BME, and of its main characteristics, with September 24, 2020 being the relevant transaction date. https://www.bolsasymercados.es/docs/inf_legal/ing/infGeneral/OPA_SIX_DOC.Q_EN.pdf (Accessed on July 28, 2022).

³⁵ BME. 2022. SIX to Exercise the Squeeze-out Right for Remaining BME Shares. Press Release of September 3, 2020. https://www.bolsasymercados.es/ing/Media/Press-Release/20200903/nota_20200907_3/SIX_to_Exercise_the_Squeeze_out_Right_for_Remaining_BME_Shares (Accessed on July 28, 2022).

³⁶ Ibid.

³⁷ SIX Group. 2019. *SIX + BME. Combining local vertically integrated champions to create a top 3 European market infrastructure group*. Additional Information to the media release of November

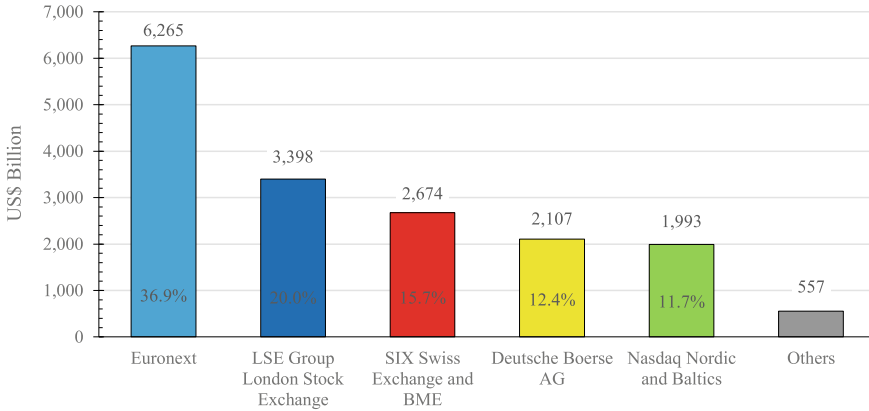


Fig. 2.5 Top five exchanges in Europe: total equity market capitalization per end of May 2022 (In USD Billion) of companies that were listed on the respective exchange (Source Data from The World Federation of Exchanges. Statistics Portal. <https://statistics.world-exchanges.org> [Accessed July 26, 2022])

In the announcement of SIX Group's tender offer for BME, it was expected to create a top-3 European financial markets infrastructure group. In terms of market capitalization of listed companies, SIX Group was the third largest stock exchange operator in Europe as of May 2022 (see Fig. 2.5).

Participation on the SIX Exchange

The SIX Exchange offers four main participation levels: Trading Participants, General Clearing Members, Traders, and Sponsored Access.

Trading Participants³⁸

Trading Participants are security traders or foreign security exchange members authorized to perform trades on behalf of their customers. They have access to the reference market for Swiss securities. Becoming a Trading Participant is a two-step process involving business and operations setups. Successful applicants must comply with Switzerland's *Stock Exchange Act*, be authorized securities traders or members of a foreign securities exchange, comply with organizational, accounting, and auditing standards, and follow the rules and

18, 2019. <https://www.six-group.com/dam/download/company/publications/SIX-all-cash-tender-offer-for-BME-presentation-18-Nov-2019.pdf> (Accessed on July 29, 2022).

³⁸ SIX, Join the Swiss Stock Exchange, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/trading/participation/trading-participants.html> (Accessed on July 15, 2022).

directions established by the Swiss Stock Exchange. Trading rules are set by the *Federal Act on Financial Market Infrastructures and Market Conduct in Securities and Derivatives Trading (FMIA)*.³⁹

General Clearing Members⁴⁰

The Swiss Stock Exchange is a network of national and international General Clearing Members and Trading Participants. General Clearing Members provide their services for Trading Participants dealing in CCP-eligible securities.⁴¹ SIX x-clear, LCH Ltd., and EuroCCP act as central counterparties, offering clearing services for all securities traded on the Swiss Stock Exchange. A General Clearing Member wanting to provide its services to Swiss Trading Participants has no choice but to participate via SIX x-clear AG, LCH Ltd., and EuroCCP.

LCH Ltd

LCH Ltd. is a UK-registered multi-asset class clearing house, serving many exchanges and platforms, and a range of over-the-counter (OTC) markets.⁴² It provides clearing services such as SwapClear, ForexClear, RepoClear Ltd., EquityClear Ltd., CommodityClear, and a cleared Listed Rates business. In 2009, LCH.Clearnet Limited and SIX x-Clear AG signed a *Global Master Link Agreement* to provide competitive clearing for trading venues.⁴³

To increase efficiency and reduce costs, LCH Ltd. also provides post-trade services and uses advanced margin methodologies and collateral standards to safeguard the interest of the company's shareholders and contributors to

³⁹ The Federal Council, Federal Act on Financial Market Infrastructures and Market Conduct in Securities and Derivatives Trading (Financial Market Infrastructure Act, FinMIA), <https://www.fedlex.admin.ch/eli/cc/2015/853/en> (Accessed on July 15, 2022).

⁴⁰ SIX, General Clearing Members, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/trading/participation/reporting-and-general-clearing-members.html> (Accessed on July 15, 2022).

⁴¹ CCP is an abbreviation for "central counterparty clearing house," a financial institution that facilitates trading in assorted European equity and derivative markets. Typically, it is operated by major banks in a country.

⁴² LCH, Our Clearing Houses: An Introduction to LCH Ltd. and LCH SA, <https://www.lch.com/about-us/our-clearing-houses> (Accessed on June 18, 2022).

⁴³ LCH.Clearnet Ltd. and SIX x-Clear AG, Master Clearing Link Agreement, August 6, 2009, <https://www.six-group.com/dam/download/securities-services/clearing/info-center/services/interoperability/clr-mcla-six-x-clear-lch-clearnet-en.pdf> SIX x-Clear, Link Agreement Summary between LCH.Clearnet Ltd. and SIX x-clear AG, https://www.lch.com/system/files/?file=media_root/Link%20Agreement%20Summary%20between%20LCH%20Ltd.%20and%20SIX%20x-clear%20AG.pdf Agreement Summary between LCH Ltd. and SIX x-clear AG.pdf (Accessed on June 22, 2022).

its default funds. LCH Ltd. has been developing segregation and clearing models, such as a margin methodology for which the initial margin is calibrated so that it is sufficient to offset losses that might occur under normal market conditions.⁴⁴ Margins for all services are back-tested daily for each clearing member using a 99.7% confidence level.

*EuroCCP*⁴⁵

EuroCCP provides clearing and settlement services for 47 platforms, including the SIX Swiss Exchange. It also clears OTC trades for European cash equities. By connecting directly to Switzerland's central securities depository (CSD), EuroCCP offers Swiss customers a way to manage settlement obligations with SIX SIS. EuroCCP submits both legs of each settlement instruction to SIX SIS when a clearing participant chooses the CSD Power of Attorney (PoA), increasing the transactions' timeliness and accuracy. SIX SIS's "auto-split" functionality allows clearing participants and CCPs to settle their available positions at seven batch times, which are 4:50, 10:50, 12:50, 13:50, 14:15, 15:15, and 16:15 CET.⁴⁶ Clearing participants can also release available stock at their discretion. If they are outside the split-batch window, the instructed quantities are sent automatically to the CCP.

Traders⁴⁷

Traders and reporting agents on the SIX Exchange must be registered following the approved process requirements, hold a Trader's license from the SIX, and pass a qualifying examination. Afterward, they can carry out trade activities in their name or on behalf of clients, which in turn must be registered at SIX.

⁴⁴ LCH, LTD Margin Methodology: A Tailored Approach to Measuring, Monitoring, and Managing Market Risk, LTD Margin Methodology | LCH Group.

⁴⁵ EuroCCP, Leading Pan-European Clearing House, <https://www.euroccp.com/services/equities/markets/> (Accessed on June 19, 2022).

⁴⁶ EuroCCP, CSD Power of Attorney—Switzerland, <https://cdn.cboe.com/euroccp/resources/Service-Desc-CSD-PoA-CH-market-Aug-20.pdf> (Accessed on June 19, 2022).

⁴⁷ SIX, Trader Registration, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/trading/participation/traders.html> (Accessed on July 15, 2022).

Sponsored Access⁴⁸

Sponsored Access to the Swiss Stock Exchange is through Trading Participants, who are the “sponsors” of their clients. Customers place their orders, which are executed by the internal electronic trading system of the Trading Participants. To help sponsors manage these positions and exposures, the Swiss Stock Exchange provides pre-trade and at-trade risk management controls that set customers’ limits and control their trading activities. Included in this package of risk-management tools is the ability to create lists of restricted stocks and kill switches that delete outstanding client orders.

Securities Services

Securities Services offer post-trade services in more than 50 countries, including custody, central counterparty (CCP) clearing, and securities financing services. It operates as the central securities depository (CSD) for Switzerland and Spain, as well as an international custodian across various global markets. Furthermore, it delivers comprehensive custody services for Swiss, Spanish, and other international securities. These services comprise issuer and asset servicing, cash management, queries, reporting, and tax services, as well as settlement services, repo transactions, and fund processing. With its access to multiple trading venues and matching platforms across Europe, Securities Services is a highly diversified CCP that provides multi-asset clearing services. Among the security finance services are repo trading, securities lending and borrowing, and collateral management.

SIX SIS

SIX SIS is Switzerland’s central securities depository (CSD) and international central securities depository (ICSD), as well as a licensed bank.⁴⁹ It is responsible for the settlement and custody of securities and, as a global agent, offers client banks tailor-made global custody services in various markets based on a

⁴⁸ SIX, Sponsored Access, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/trading/participation/sponsored-access.html> (Accessed on July 15, 2022).

⁴⁹ In 2022, SIX received the second-most nominations (behind only BNP Paribas Securities Services) for quality custodial services. Editors, Global Custodian, Custody: Global Custodian Reveals Shortlists for Leaders in Custody Awards on May 4, 2022, <https://www.globalcustodian.com/global-custodian-reveals-shortlists-for-leaders-in-custody-awards-on-4-may-2022/> (Accessed on June 20, 2022).

network of CSDs and affiliated custodians.⁵⁰ Security settlement on SIX SIS is provided on a simultaneous and irrevocable final-delivery-versus-payment basis to engender client confidence and trust.

SIX SIS's fees are internationally competitive, and SIX SIS has developed expertise in settling repo transactions, which are handled by the Swiss value chain on a guaranteed, irrevocable trade-by-trade basis.⁵¹ Sponsored funds are settled by SIX SIS Clearstream,⁵² and non-Swiss-franc-denominated bonds are settled by Euroclear.

In addition to being an intense competitor, SIX SIS is also a respected collaborator with strong ties to European CSDs and ICSDs. In this regard, SIX SIS has launched a joint venture called "Link Up Markets" with several other European CSDs (including Clearstream). The key objective of the partnership is to improve efficiency and reduce post-trade processing costs of cross-border security transactions.⁵³

SIX X-Clear

SIX x-clear acts as a CCP that intermediates between trading parties by taking on the obligations and guarantees needed to fulfill contract obligations.⁵⁴ When settlement is made, it initiates delivery and payment, as well as tracking, valuing, and offsetting trading positions.⁵⁵

SIX x-clear acts as the CCP for the SIX Swiss Exchange and is a recognized overseas clearing house (ROCH) in the United Kingdom. It also offers clearing services to the London Stock Exchange (LSE), with the intention of becoming one of Europe's leading clearinghouses. As a CCP, SIX x-clear offers post-trade anonymity and can reduce systemic risks and cuts costs by netting transactions, hence reducing the settlement volume.

⁵⁰ SIX Securities Services, Annual Report 2020, <https://www.six-group.com/dam/download/company/report/annual/2020/six-annual-report-2020-en.pdf> (Accessed on November 26, 2021). See also, SIX, Price List SIX SIS International Services: Valid as of January 1, 2022, https://reports.six-group.com/download/2021AR/en/SIX_Annual_Report_EN.pdf (Accessed on June 20, 2022).

⁵¹ SIX Securities Services, *Repo*, www.six-securities-services.com/dss/index/scu-swiss-custody/scu-repo.html (Accessed on June 20, 2021).

⁵² In 2021, SIX acquired from Clearstream a 50% stake in REGIS-TR, a European Trade Depository. <https://www.six-group.com/en/newsroom/media-releases/2022/20220401-regis-tr-closing.html#:~:text=SIX%20has%20successfully%20completed%20the,clients%20across%20over%2040%20countries>. (Accessed on June 20, 2022). It is a complementary business to SIX's existing services.

⁵³ ITnation, Link-Up Markets goes live through Clearstream Services, <https://www.itnation.lu/link-up-markets-goes-live-through-clearstream-services/> (Accessed on June 20, 2021).

⁵⁴ Robert Oleshal, SIX x-clear, the Central Counterparty, Swiss National Bank, January 2009, https://www.snb.ch/en/mmr/reference/six_xclear/source/six_xclear.en.pdf (Accessed on June 18, 2022).

⁵⁵ Ibid.

SIX x-clear is responsible for managing significant risks for the entire SIX Securities Services Division, such as counterparty, market, operational, and liquidity risks. Because it is a licensed bank, SIX x-clear is supervised by the FINMA, and because it has a key position in Switzerland's financial market infrastructure, it is also under the supervision of the Swiss National Bank (SNB).⁵⁶

SIX x-clear Ltd. offers customers a fully automated clearing and settlement process that links all trading steps (i.e., from order entry to settlement) by straight-through processing. Multicurrency compatibility and a choice of partners for national and international clearing and settlement add to its flexibility and reach.

SIX Repo

Repurchase agreements are vital to Switzerland's financial system because they link banks to the SNB, and their interaction changes domestic liquidity levels. Purchasing securities from banks injects central bank money (i.e., monetary base) into Switzerland's financial system, and their scheduled repurchase drains these funds. Similarly, selling securities to banks extracts liquidity from the financial system, and their scheduled repurchase reinjects it.

SIX Repo is the sole provider of repo services in Switzerland. Its multi-faceted electronic trading facility, CO:RE, provides single-point access to more than 160 financial counterparties, such as banks, broker-dealers, insurance firms, commercial banks, and other repo-trading participants in 14 countries.

SIX operates two repo markets, CH Repo and OTC Spot. CH Repo services the SNB's open market operations, and OTC Spot handles the SNB's auctions for Treasury Bills, Federal Bond Issues, and SNB Bills. SIX Repo also has a Special-Rate Repo facility (aka, Liquidity Shortage Financing Facility), through which the SNB provides banks with short-term liquidity (e.g., until the next working day).⁵⁷

⁵⁶ SIX, Regulatory Affairs, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/site/regulatory-affairs.html> (Accessed on June 18, 2022).

⁵⁷ Swiss National Bank, Instruction Sheet on the Liquidity-Shortage Financing Facility (special-rate repo transactions), 4.2 Setting the Special Rate, https://www.snb.ch/en/mmt/reference/repo_mb25/source/repo_mb25.en.pdf (Accessed on July 11, 2021). See Chapter 7: *Swiss National Bank, Monetary Policy, and Global Exchange Markets* for more information on this facility and the SNB's open market operations.

SIX Terravis

In January 2012, the Canton of Thurgau began a yearlong pilot program called SIX Terravis, which introduced a new electronic business transaction service to the Swiss market. Terravis provides a single-interface service for real estate transactions between land registries, notary offices, and banks. Its standardized electronic communication network increases the safety and speed of notarial registrations, registered mortgage notes, and repayment of mortgage loans among banks. It also reduces both the cost and risk of errors. Terravis is part of the eGRIS project, supervised by the Federal Office of Justice, the Cantons of Thurgau and Uri, and the SNB.

Financial Information

SIX provides verified, consolidated, normalized, and enriched (i.e., structured) referencing, pricing, and regulatory data on more than 30 million financial instruments sourced from over 1,800 worldwide sources.⁵⁸ Financial Information provides procurement, processing and distribution of reference data, and pricing information (real-time) market data and offers display products. In addition, it delivers complete reference data required in the context of local and cross-border regulatory and tax compliance. Index services includes calculating indices and offering licenses for SIX indices.

SIX Financial Information

SIX Financial Information has been supplying financial data and services to the Swiss financial markets for more than 90 years. In this role, it procures, structures, integrates, standardizes, and distributes international financial data from more than 1800 sources, including stock exchanges, alternative trading venues, and other contributors.⁵⁹ In 2022, it provided information on almost 30 million financial instruments, had a presence in 20 countries and was one of Europe's largest financial data providers.⁶⁰ In addition to stock exchange and currency data, SIX Financial Information provides analytical and background information, evaluates prices, and distributes financial news

⁵⁸ SIX, Reference & Pricing Data, <https://www.six-group.com/en/products-services/financial-information/reference-pricing-data.html> (Accessed on July 15, 2022).

⁵⁹ SIX, Member's Profile, <https://anna-web.org/anna-members/> (Accessed on June 20, 2022).

⁶⁰ SIX, Drive: How SIX Is Driving the Transformation of Financial Markets, <https://www.six-group.com/dam/download/company/publications/six-drive-2020-en.pdf> (Accessed on June 22, 2022).

regarding security markets. Its 2007 acquisition of Fininfo, a French financial information business, has reinforced its strong market position.

SIX Financial Information's data feeds offer continuous, real-time market data, statistical information, and economic news from international agencies. Its reference data feed delivers structured and codified company statistics and events to the databanks of clients. In addition, SIX Financial Information's suite of display solutions provides users with a range of user-friendly but sophisticated international financial data. Finally, it offers financial institutions data relating to compliance rules and regulations, such as the EU's *Markets in Financial Instruments Directive (MiFID)*.

The financial services activities of SIX Financial Information are divided into four product and service categories: Solutions, Reference Data and Pricing, Market Data, and Display.⁶¹ They were created to address client demands for specialized data requirements and information needs. With them, SIX Financial Information can offer customized solutions for displays, real-time calculations, reference data-based solutions, trading and portfolio management, compliance and risk management, operations, and hosting. From modest beginnings, it has expanded to provide comprehensive services to customers worldwide.

Reference and Pricing Data

SIX Financial Information operates a securities database that captures and organizes financial information from more than 1500 global sources. The reference data service covers all the financial information associated with a security, such as reference and descriptive data, new issues, changes to existing securities, cash flow terms and conditions, ratings from leading rating agencies, company information, global security ID cross-references, corporate actions, pricing data, and evaluated prices.⁶²

Global Corporate Actions Data and Services

The Global Corporate Actions SIX Financial Information provides a unique service in the market, enabling the automation of operations in corporate actions to support customers' cash flow management, income distribution,

⁶¹ Ibid.

⁶² SIX Financial Information Ltd. 2018. *SIX Reference Data Offering*. <https://www.six-group.com/dam/download/financial-information/reference-pricing-data/corporate-actions/six-factsheet-global-corporate-actions-en.pdf> (Accessed on July 27, 2022).

and risk management. SIX Financial Information works together with more than 50 partners to deliver aggregated corporate actions data in a wide variety of formats. The sourced and processed information comprises dividends and other distributions, as well as corporate events (i.e., name or domicile changes, mergers, spin-offs, purchases, reorganizations, bankruptcies and liquidations, class actions, capital increases and reductions, splits/reverse splits and share conversions, delivered in near-real time).⁶³

Market Data and Services

Market Data and Services offers a stream of market quotes, delivered in real-time, intraday, end-of-day, and time series formats, regardless of where in the world it originates. SIX Financial Information sources and consolidates market data from the broadest range of sources all over the world.⁶⁴

Fund Data and Services

Fund Data (Premium Fund Data) services offer the access to fund data from a single, reliable source, covering all core European markets. SIX Financial Information not only provides reference fund data combined with third-party fund data, but also enriches the information with content needed for regulatory and tax compliance and validates all the gathered information. The Premium Fund Data service includes in its display of financial instruments complete and up-to-date fund data that are certified by assigning a premium flag.⁶⁵

Display and Delivery Capabilities

SIX Financial Information's suite of Display and Delivery Capabilities provides different ways and payment models to access data and financial information. SIX Flex[®] is the delivery platform for all financial data provided

⁶³ SIX Group. Products & Services. Financial Information. Reference & Pricing Data. Corporate Actions. <https://www.six-group.com/en/products-services/financial-information/reference-pricing-data/corporate-actions.html> (Accessed on July 27, 2022).

⁶⁴ SIX Group. Products & Services. Financial Information. Reference & Pricing Data. Market Data. <https://www.six-group.com/en/products-services/financial-information/reference-pricing-data/market-data.html> (Accessed on July 27, 2022).

⁶⁵ SIX Financial Services Ltd. (2018). *Premium Fund Data*. <https://www.six-group.com/dam/download/financial-information/reference-pricing-data/fund-data/six-factsheet-premium-fund-data-en.pdf> (Accessed on July 27, 2022).

by SIX, designed for procuring, interpreting, and working with financial information.⁶⁶ Data can be delivered via data feeds, Valordata Feed for Reference Data⁶⁷ and Market Data Feed⁶⁸ for global real time market data. apiD is a platform for developing custom tools for Internet, intranet, and extranet applications with SIX extensive real-time database to integrate a vast array of data into customers' internal, external, and web-based functions.⁶⁹ SIX iD is a display solution that gives access to reference and market data provided by SIX. The user interface has many features that simplify the processing of information to support efficient decision making.⁷⁰

ESG Data and Services

SIX also offers ESG information relating to regulatory requirements, performance, and indices, becoming more and more relevant to meeting the challenges of the climate crisis and the associated regulatory requirements.⁷¹

Regulatory Data and Services

SIX Financial Information is specialized on data and services relating to legal and regulatory requirements. This relates to the areas of tax, investor protection, and regulatory reporting. Table 2.2 provides an overview of regulatory services provided by SIX Financial Information. Regulatory Hub is an innovative regulatory platform designed to connect the buy- and sell-side

⁶⁶ SIX Group. Products & Services. Financial Information. Display & Delivery Capabilities. SIX Flex®. <https://www.six-group.com/en/products-services/financial-information/display-and-delivery-capabilities/sixflex.html> (Accessed on July 27, 2022).

⁶⁷ SIX Group. Products & Services. Financial Information. Display & Delivery Capabilities. Valordata Feed. <https://www.six-group.com/en/products-services/financial-information/display-and-delivery-capabilities/vdf.html> (Accessed on July 27, 2022).

⁶⁸ SIX Group. Products & Services. Financial Information. Display & Delivery Capabilities. Market Data Feed. <https://www.six-group.com/en/products-services/financial-information/display-and-delivery-capabilities/mdf.html> (Accessed on July 27, 2022).

⁶⁹ SIX Group. Products & Services. Financial Information. Display & Delivery Capabilities. ApiD. <https://www.six-group.com/en/products-services/financial-information/display-and-delivery-capabilities/apid.html> (Accessed on July 27, 2022).

⁷⁰ SIX Group. Products & Services. Financial Information. Display & Delivery Capabilities. SIC iD. <https://www.six-group.com/en/products-services/financial-information/display-and-delivery-capabilities/sixid.html> (Accessed on July 27, 2022).

⁷¹ SIX Group. Products & Services. Financial Information. ESG Data. <https://www.six-group.com/en/products-services/financial-information/esg-data.html> (Accessed on July 27, 2022).

Table 2.2 Overview of regulatory services of SIX financial information

Tax and compliance	Sanctioned Securities Monitoring Service, SIX Tax Score [®] , SIX Tax on Instrument, Financial Transaction Tax, Domestic Tax Packages, FATCA Compliance, Legal Entity Identifier, IRS 871(m)
Investor protection services	MiFID II, Financial Services Act (FinSA), PRIIP KID, Product Risk Indicator (PRI), AIFMD, Solvency II
Reporting services	CSDR Data Service, SFTR Data Service, CRS & AEOI
ESG regulatory data	SFDR, EU Taxonomy, ESG Template (EET) from FinDatEx

Source SIX Group. Products & Services. Financial Information. Regulatory Services. <https://www.six-group.com/en/products-services/financial-information/regulatory-services.html#scrollTo=research> (Accessed on August 1, 2022)

with each other so data and documents can be exchanged in a standardized, automated, and digital way.⁷²

Indices

Under the label SMI Indices SIX offers a range of equity, bond, real estate, and strategy indices for the Swiss market. At the top of the list is the SMI, Switzerland's most important equity index calculated by SIX.⁷³ The rule-based, transparent methodology of the SMI indices is compliant with the International Organization of Securities Commission's (IOSCO) Principles for Financial Benchmarks. Major Swiss indices are endorsed under the EU Benchmark Regulation (BMR),⁷⁴ carried out by SIX Financial Information Nordic AB in Stockholm, which is also a Benchmark Administrator under BMR, confirmed by the Swedish Financial Supervisory Authority.⁷⁵

⁷² SIX Financial Information Ltd. 2021. *Regulatory Hub*. <https://www.six-group.com/dam/download/financial-information/regulatory-services/six-fs-regulatory-hub-en.pdf> (Accessed on July 27, 2022).

⁷³ SMI is the Swiss blue-chip index and contains the 20 largest stocks, covering approximately 80% of the total capitalization of the Swiss stock market. SMI is compliant with the ESMA UCITS guidelines, so that it can be used as a reference index for the Swiss equity market in the European Union. In 2018, SMI celebrated its 30th anniversary. <https://www.six-group.com/en/site/smi-30years.html> (Accessed on July 27, 2022).

⁷⁴ EU Benchmark Regulation (BMR): Regulation (EU) 2016/1011 of the European Parliament and of the Council of 8 June 2016 on indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds and amending Directives 2008/48/EC and 2014/17/EU and Regulation (EU) No 596/2014 (Text with EEA relevance) Text with EEA relevance. <http://data.europa.eu/eli/reg/2016/1011/2022-01-01> (Accessed on July 27, 2022).

⁷⁵ For detailed information see: SIX, Benchmark Regulations Swiss Indices, <https://www.six-group.com/en/products-services/financial-information/indices/benchmark-regulation.html> (Accessed on July 27, 2022).

Table 2.3 Overview of SIX Group's Swiss major indices

Equity basic	SMI, SMIM, SMI Expanded, SLI, SPI, SPI 20, SPI Extra, SPI Sectors, SXI Swiss Sustainability 25, UBS 100, SPI Gender Equality, Swiss All Share
ESG equity	SPI ESG, SPI Gender Equality, ESG Strategy Indices
Bonds	SBI
ESG bonds	SBI ESG
Strategy	SPI Multi Premia, Leveraged Indices, SPI Select Dividend 20, Dividend Point Indices, VSMI, SMI Risk Control
Real estate	SXI Real Estate Shares Broad, SXI Real Estate Funds Broad, SXI Real Estate Broad, SXI Real Estate All Shares, SXI RE Selected NAV
SARON	Swiss Reference Rates, SARON
Crypto	SIX Crypto Market Index 10, SDX Crypto Indices

Source SIX Group. Products & Services. Financial Information. Indices. Swiss Indices. <https://www.six-group.com/en/products-services/financial-information/indices/swiss-indices.html> (Accessed on August 1, 2022)

Access to the Swiss indices requires a subscription, if SIX indices are used as underlying for index-based products such as ETFs, fund solutions, and structured products, but also as benchmarks for portfolio management. Table 2.3 provides SIX Group's Swiss offer of major standardized and advanced strategy indices. SIX Group is one of the largest providers of indices in the Nordic by calculating and offering more than 400 indices covering Sweden, Denmark, Norway, and Finland.⁷⁶ Not only for standardized and advanced strategy indices, but also for specific index solutions offered for individual clients, SIX guarantees high standards and transparency.

Rolotec

Rolotec is a majority-owned subsidiary of SIX Financial Information. It was acquired in January 2017 to create and develop online software information solutions for customers.⁷⁷ Rolotec specializes in integrating real-time data into solutions for stock exchange information systems, databases and data processing, knowledge management, consulting, project management, monitoring and ICT security operations, and maintenance. Before its acquisition, Rolotec worked closely with SIX Financial Information and, afterward,

⁷⁶ See <https://www.six-group.com/en/products-services/financial-information/indices/nordic-indices.html> (Accessed on July 27, 2022).

⁷⁷ SIX, Annual Report 2018, p. 107, <https://www.six-group.com/en/company/investors.html#scrollTo=archive> (Accessed on June 22, 2022).

became the prime coordinator within the service category called SIX Financial Information Solutions.⁷⁸ Today, Rolotec also has customers in Europe, the United States, and Asia.

Swiss Fund Data

Swiss Fund Data AG is owned by the Swiss Fund Association and SIX Swiss Exchange. As its name indicates, Swiss Fund Data provides investors access to financial information, notices, documents, and other information on authorized investment funds, which are segregated pools of assets, professionally managed by fund managers. It is designed for medium to long-term asset growth. Delivery is efficient, uncomplicated, cost free, and beneficial because it increases market transparency. The Swiss investment fund industry uses this information source as a cost-effective, official publication channel to enhance competitiveness.

Banking Services

The business unit Banking Services supports financial institutions with billing and payment services, ATM transaction processing and infrastructure services in Switzerland, as well as processing services for debit card issuers. SIX Interbank Clearing Ltd. (SIC) processes retail and wholesale payments in Swiss francs on behalf of the SNB and provides a gateway for Euro payments for the Swiss financial community (euroSIC). Banking Services also provides the infrastructure for digital billing in Switzerland, for example eBill and direct debits, such as LSV+ and BDD.

Against the backdrop of increasing cyber risks, secure access to infrastructure services is an essential prerequisite for operating a well-functioning financial market infrastructure. Based on the SCION technology developed at ETH Zurich, the SNB and SIX Group have created the Secure Swiss Finance Network (SSFN). This controlled and secure network allows the exchange of data between financial market participants in accordance with the highest requirements and standards in terms of security and availability. Since June 2022, the SSFN has provided a connection to the SIC (and also

⁷⁸ Ampliz, Rolotec AG: Information Technology and Services, <https://www.ampliz.com/company/rolotec-ag/82385386> (Accessed on June 22, 2022).

the euroSIC) payment systems, as well as to the ATM Monitoring Services of SIX (remote ATM monitoring).⁷⁹

SIX Interbank Clearing

Swiss Interbank Clearing (SIC) began in 1987, creating a nationwide electronic payment network to efficiently and accurately clear domestic transactions, such as fund transfers, security payments, cash management services, and borrowed/lent securities. Because of its importance to Switzerland's financial system, the SNB classifies the SIC system as a "systemically important financial market infrastructure" (SIFI).⁸⁰

SIX Interbank Clearing operates SIC and EuroSIC payment systems for transactions conducted between financial institutions.⁸¹ Because SIC functions on behalf of the SNB, it is subject to the central bank's supervision.⁸² The SIC utilizes its SNB deposits for payments and receipts, integrating its actions with SNB's monetary policies.

Swiss Euro Clearing Bank (SECB), euroSIC, and SIC provide processing and settlement systems for euro-denominated payments within Switzerland and across its borders. They give their customers real-time connections to all the financial institutions in the EU, through TARGET2 RTGS, and to EEA countries. SIC is a real-time gross settlement system (RTGS), which means it settles each irrevocable and final transaction by individually adding or deducting the amount to/from a participant's central bank account.⁸³ This means debiting and crediting banks' reserve accounts already deposited at the SNB.

⁷⁹ SIX, SSFN—The New Gateway to Financial Center Infrastructure Is Live, June 9, 2022, <https://www.six-group.com/en/newsroom/news/banking-services/2022/ssfn-productive-operation.html> (Accessed on August 30, 2022).

⁸⁰ Swiss National Bank, *Swiss Interbank Clearing (SIC) Payment System: Report on the SIC System and Disclosure Report*, https://www.snb.ch/en/mmr/reference/sic_system/source/sic_system.en.pdf (March 10, 2022). For technical reasons, each SIC participant's account at SNB is divided into two sub-accounts. The master account is used for settling cash transactions and bilateral business done exclusively with the SNB. The SNB's internal accounting system manages it. By contrast, the SIC settlement account is used for interbank clearing transactions, which means it must utilize SIX Interbank Clearing Ltd.

⁸¹ SIX, Securities Services: Comprehensive Post-Trade Services across the Whole Value Chain, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/post-trade.html>. EuroSIC is a payment system teamed with SIX. It is described later in the chapter.

⁸² SNB, The Swiss Interbank Clearing (SIC) Payment System, https://www.snb.ch/en/mmr/reference/sic_system/source/sic_system.en.pdf (Accessed on June 22, 2022).

⁸³ If payments exceed a counterparty's reserve balance, the system utilizes a bilateral settlement system (i.e., circles processing) that automatically searches for pending transactions if others can cover the existing balance.

SIC also offers net clearing systems to reduce counterparty risk. By netting counterparty payments, default and systemic risks (e.g., for other nonpayment reasons) can be minimized. The SNB accomplishes this by posting a bank's net position to its reserve/settlement account only at the end of the settlement period, which occurs at a predetermined time or when a threshold value or quantity of payment orders has been reached. Only at this point are the netted transactions considered both irrevocable and final.⁸⁴

SIC increased the speed and volume of cleared financial transactions among Swiss banks. In June 1987, eight banks were connected to the system, and about 15 million transactions were made during the first year. By 2000, SIC's yearly transactions reached almost 150 million; in 2021, they reached nearly 900 million. Figure 2.6 highlights the development of transactions and turnover from 2017 to 2022. In June 2022, the system processed approximately 78.5 million transactions, with their turnover valued at CHF 4,371 billion.⁸⁵ The next generation of SIC, SIC5, will be released in 2023, hopefully enabling instant payments by August 2025 (i.e., payments that can be processed 24 hours a day, 7 days a week, 52 weeks per year).⁸⁶

SECB⁸⁷

Founded in 1998, SECB is operated by SIX Interbank Clearing and acts as a system manager for the euroSIC system. It connects financial institutions (mainly) in Switzerland and Liechtenstein to the main euro clearing and payment systems. Furthermore, it acts as the liquidity manager and settlement agent for system participants.⁸⁸ The SECB's connection to European payment processors allows SEPA-compliant credit transfers and direct debits

⁸⁴ Swiss National Bank, Swiss Interbank Clearing (SIC) Payment System: Report on the SIC System and Disclosure Report, Ibid.

⁸⁵ Since January 2013, the number of transactions has been calculated without sight deposit transfers. Therefore, these figures are not comparable to previous ones. Swiss National Bank, Payment Transactions via Swiss Interbank Clearing (SIC). SNB. Economic Data. Payment transactions via Swiss Interbank Clearing (SIC). [https://data.snb.ch/en/topics/finma#!/cube/zavesic?fromDate=2006-01&toDate=2007-01&dimSel=D0\(T0,MT0,DA0,T1,MT1,DA1,149990,5000999990,1MM0,149991,5000999991,1MM1\)](https://data.snb.ch/en/topics/finma#!/cube/zavesic?fromDate=2006-01&toDate=2007-01&dimSel=D0(T0,MT0,DA0,T1,MT1,DA1,149990,5000999990,1MM0,149991,5000999991,1MM1)) (Accessed on August 1, 2022).

⁸⁶ SIX Group. *Instant Payments: How and When Will Payments Work "Instantly" in Switzerland?* Blog post of July 28, 2022. <https://www.six-group.com/en/blog/2022/swiss-instant-payments.html#s4> (Accessed on August 1, 2022).

⁸⁷ SECB, SECB Swiss Euro Clearing Bank GmbH, <https://www.secb.de/en/> (Accessed on July 16, 2022).

⁸⁸ In 2018, SIX purchased 100% of SECB. SIX, SIX Increases Its Stake in SECB GmbH, <https://www.six-group.com/en/newsroom/media-releases/2018/20180903-secb.html> (Accessed on July 15, 2022).

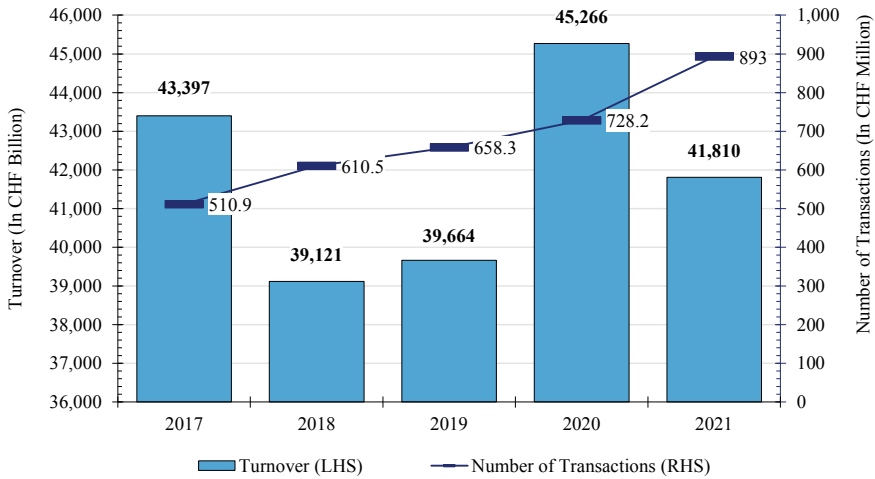


Fig. 2.6 SIC payment system number of transactions in CHF Millions and turnover (In CHF Billion): 2017–2021 (Source Data from SNB. Economic Data. Payment transactions via Swiss Interbank Clearing (SIC). <https://data.snb.ch/> [Accessed on August 1, 2022])

via the Swiss payment channel euroSIC.⁸⁹ In 2021, euroSIC handled 14.730 million transactions with a turnover of EUR 2227.173 billion.⁹⁰

euroSIC⁹¹

The euroSIC system is supervised and monitored by Swiss Euro Clearing Bank (SECB). Through euroSIC, Switzerland gains efficient and secure interfaces with EU financial institutions, without becoming a member of the EU. It connects to the Eurozone's TARGET2 RTGS system and the German and pan-European EMZ and STEP2 wholesale payment systems. It further connects financial institutions (mainly) in Switzerland and Liechtenstein to the main euro clearing and payment systems in the EU and in EAA countries. EuroSIC provides a safe connection for EU and EEA members who wish to conduct euro-denominated exchanges with its members. It provides liquidity and executes daily, irreversible transactions by balancing payments with sight deposit accounts at the SECB.

⁸⁹ SEPA (Single Euro Payments Area) unifies the Europe-wide payment area for cashless payments in euros. The SEPA area comprises a total of 33 countries: the 27 EU member states, Liechtenstein, Switzerland, Norway, Iceland, Monaco. The SEPA scheme sets the standard for efficient cross-border payment processing within the SEPA area.

⁹⁰ SECB. Transactions and Turnover per Month. <https://www.secb.de/media/plsprucz/eurosic-detail-en.png> (Accessed on August 1, 2022).

⁹¹ SIX, euroSIC System, Ibid.

SIX Card Solutions

SIX Card Solutions offers merchants card-based payment solutions for major international credit and debit cards. It also provides customers with value-added services, such as mobile vouchers for prepaid mobile phones and dynamic currency conversion, which allow cardholders to choose the settlement currency of a transaction. SIX Card Solutions empowers customers with a payment infrastructure needed for point-of-sale and Internet transactions. It also processes transactions for acquirers and card issuers (e.g., banks), where the processor provides claim handling, risk management, and other related functions.

Billing and Payments

SIX Group's Billing and Payment unit provides reliable and secure payment solutions for the Finance Center Switzerland, generating synergies and economies of scale by bundling and standardizing payments infrastructure. SIX Group's Billing and Payment services ensure that funds are quickly, reliably, and securely taken from the security purchaser's bank account and deposited into the security seller's account. Two relatively recent innovative solutions are eBill and QR-bill (explained below). By 2028, the SIX Group aims to digitally settle 60% to 80% of its business-to-customer invoices and transfer them to eBill. The network partner for eBill is SIX Paynet Ltd., one of the leading e-invoicing providers in Switzerland. To boost digital payments, SIX transferred the e-invoicing business, formerly operated by SIX Paynet Ltd., to PostFinance Ltd. in 2021. QR-bill is a transitional solution on the way to digitize the entire value chain of payment transactions, from invoicing to payment, without any media disruption.⁹²

eBill

In 2018, the SIX Group introduced eBill, a digital invoice system that electronically receives customer invoices from vendors and automatically pays

⁹² SIX Group. Digitization of Payment Transactions. <https://www.einfach-zahlen.ch/en/home/digitization.html> (Accessed on August 1, 2022). On September 2022 red and orange payment slips will be discontinued and replaced by QR-bill. SIX Group. *Discontinuation of Payment Slips—Switch to QR-Bill Picks Up Speed*. SIX blog post of November 22, 2021. <https://www.six-group.com/en/blog/2021/qr-bills-picking-up-speed.html> (Accessed on August 1, 2022).

them without using mail or e-mail correspondence.⁹³ In 2022, eBills had approximately two million registered users, with 95% of all Swiss financial institutions connected to its infrastructure. As of 2022, eBill's high security standards had resulted in no cases of fraud or abuse. The eBill system automatically gives bank customers complete control over the invoices they wish to process, allowing them to manage their finances by adding or subtracting bills.

QR-bill

Another step in Switzerland's payment system development occurred in June 2020, when the SIX Group introduced the QR-bill, which uses a QR code to simplify payment transaction processing. Scanning a QR code makes payment transactions easier, quicker, more convenient, and more accurate than other payment methods because account numbers and payment information are scanned. Each QR-bill consists of separate payment and receipt sections,⁹⁴ with the QR code containing all the relevant information about invoicing and payment. Once in place, customers can pay their bills using mobile banking, e-banking, or mail simply by scanning their QR codes.⁹⁵

LSV+ and BDD

LSV and BDD are two direct debit procedures used by Swiss banks. LSV+ is for individuals and provides the right of objection, while BDD is for corporate businesses and does not provide users with such a right. They are used, regularly, to settle claims in Swiss francs and euros. Agreed participation conditions regulate the relationship between creditors and banks, and the debit authorization document maintains the relationship among creditors, debtors, and the financial institutions.⁹⁶

⁹³ eBill, eBill—the Digital Invoice for Switzerland, <https://www.ebill.ch/en/private-customer.html> (Accessed on July 4).

⁹⁴ SIX, Payments Simplified: Thanks to the new QR-bill, <https://www.einfach-zahlen.ch/en/home/pay/qr-bill.html> (Accessed on July 4).

⁹⁵ In September 2022, previously issued payment slips (i.e., red and orange payment slips) are scheduled to be removed from the market, <https://www.ubs.com/ch/en/private/accounts-and-cards/information/magazine/2020/pay-bills-easily-with-the-qr-code.html>.

⁹⁶ SIX, LSV: Direct Debit Procedures for Regularly Occurring Claims, Undated. They give their customers real-time connections to all the financial institutions in the EU, through TARGET2 RTGS, and to EEA countries (Accessed on July 20, 2022).

PaymentStandards.CH

PaymentStandards.CH is a Swiss financial center initiative to standardize and harmonize Switzerland's payment system. It communicates information to stakeholders from the SIC, making payments simpler and more economical.

bLink

bLink is a platform that connects financial institutions to software and service providers. It provides an efficient and secure platform where software and service providers can access bank account information and asset data at custodian banks on behalf of their customers. From bLink, customers can transmit bank payments automatically and place stock exchange orders.

Worldline

The Banking Services segment of the SIX Group is responsible for accepting, recording, and smoothly processing cashless payments (e.g., credit, debit, value, and customer cards). It also operates the interbank clearing system for transactions denominated in Swiss francs and euros and provides services for retail payments, such as debit advice procedures, as well as electronic bill presentment and payment. In May 2018, the SIX Group sold its banking services division, SIX Payment Services, to Worldline for a 27% equity stake in the company and two seats on Worldline's board of directors.⁹⁷

Swiss Value Chain

The core and, at the same time, the backbone of the Swiss financial center is the Swiss (Securities) value chain, which represents the fully automated electronic infrastructure for trading securities, clearing, settlement and custody, and payment. SIX Group operates the Swiss value chain by providing the integrated financial market trading and post-trading infrastructure for the Finanzplatz Schweiz (i.e., Finance Center Switzerland) under one roof.

SIX Group's financial market infrastructure subsidiaries operate with state-of-the-art technologies, including the corresponding interfaces with the highest processing speed and efficiency standards to meet the needs of capital

⁹⁷ SIX, Media Releases, <https://www.six-group.com/en/newsroom/media-releases/2018/20181130-closing-worldline.html> (Accessed on June 20, 2021).

market participants. The launch of the SIX Digital Exchange (SDX) in November 2021 shows SIX Group’s support for digital transformation and development by integrating forward-looking distributed ledger technology (DLT) into the Swiss value chain.

Figure 2.7 shows the trading process and institutions connected to the Swiss financial value chain. Customer orders move automatically through four layers of financial processing, from Trading to Products to Clearing to Settlement. To address the needs of these integrated layers, Switzerland developed the SIX Swiss Exchange (i.e., the SWXess), its automated, electronic platform that offers a complete set of industry-standard interfaces that accommodate each financial asset class. Trades follow direct computer linkages, eliminating the need to enter data more than once, thereby increasing efficiency and reducing the likelihood of errors.

On a typical trading day, counterparties submit their buy and sell orders to the exchange, which are recorded on the SWXess trading platform of the SIX Swiss Exchange Ltd. At the exchange, the orders are then executed according to the SIX Exchange’s matching rules. SIX x-clear Ltd. acts as the CCP for

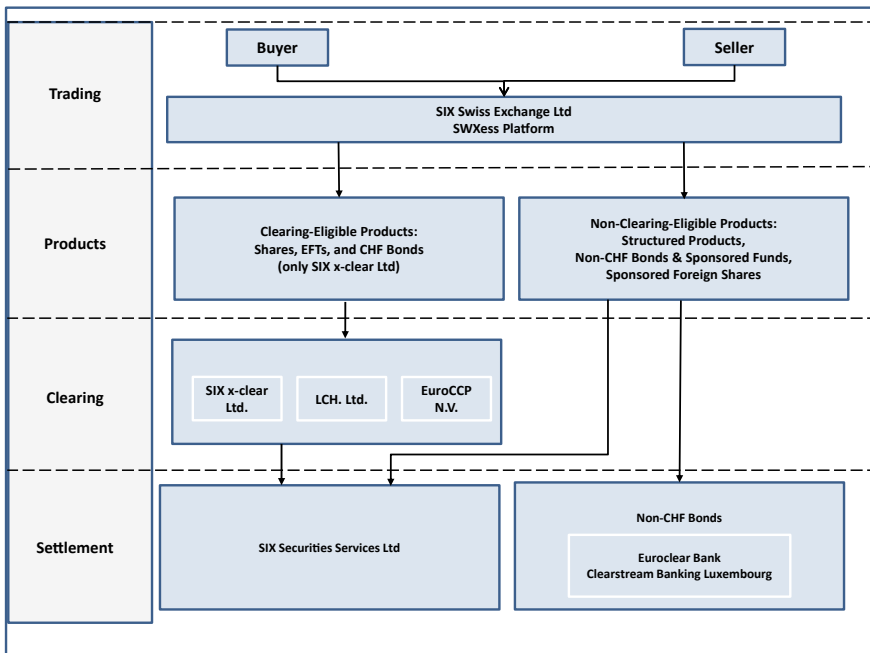


Fig. 2.7 SIX Group value chain: trading, products, clearing, and settlement (Source SIX Swiss exchange, *clearing and settlement*, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/trading/trading-provisions/clearing-and-settlement.html> [Accessed on June 18, 2022])

sellers and buyers to reduce risk for both trading parties. As CCP, SIX x-clear Ltd. steps between the seller and buyer, immediately when the buy and sell orders are matched. Doing so ensures the shares are delivered to the buyer and payment is made to the seller, thereby eliminating the credit risk.

Trading Participants must be members of the CCP (i.e., in this example SIX x-clear Ltd., or use the services provided by a General Clearing Member).⁹⁸ For assuming the default risk, the CCP requires margin payments and contributions to a default fund that covers losses in the event of a default. Execution occurs two days after the trading day via SIX SIS Ltd., which operates SECOM, the securities settlement system, and central securities depository (CSD) for Switzerland. Based on the notification of the trade from SIX x-clear Ltd., SECOM checks whether the seller has the number of shares in her securities account, blocks them, and initiates payment via the SIC payment system, a real-time gross settlement system (RTGS) operated by SIX Interbank Clearing Ltd. Once payment is made via SIC by SIX x-clear Ltd. to the selling party, the shares are transferred to SIX x-clear Ltd.'s securities account. Similarly, settlement and payment are carried out between SIX x-clear Ltd. and the buyer. SECOM checks whether SIX x-clear Ltd. holds the correct number of shares in its securities account and blocks them. After the transfer of the payment via SIC by the buyer, the shares are then transferred to the buyer's securities account.

Payments in the SIC system are settled with central bank money (i.e., bank checking accounts at the SNB). Therefore, each SIC participant⁹⁹ has a sight deposits (i.e., central bank money) account with the SNB. At the beginning of a settlement day, sight deposits are transferred to the SIC participant's settlement account with the SIC system. All the payments on settlement day are processed through this settlement account. Payments are only executed by SIX if they are covered. At the end of the settlement day, the settlement account's balance is transferred back to the sight deposit account with the SNB. By netting counterparty payments, default and systemic risks (e.g., for other nonpayment reasons) can be minimized.¹⁰⁰ As this example illustrates, Switzerland's security transactions system can be described as a simultaneous,

⁹⁸ Clearing through CCP is mandatory for "on-order book" trading activities in clearing (CCP) eligible products. General clearing members provide their services for Trading Participants dealing in CCP-eligible securities. SIX x-clear Ltd. acts as a CCP and a General Clearing Member or Trading Participant must participate with SIX x-clear Ltd.

⁹⁹ SIC participants are financial institutions or third-party system operators, admitted to the SIC system to effect debits and credits to the SIC settlement accounts of SIC participants.

¹⁰⁰ SNB. 2022. The Swiss Interbank Clearing (SIC) payment system Report on the SIC System and Disclosure Report. https://www.snb.ch/en/mmr/reference/sicsystem_disclosure/source/sicsystem_disclosure.en.pdf (Accessed on July 29, 2022).

final, and irrevocable delivery-versus-payment system, with security buyers getting instant access to the securities and security sellers getting instant access to cash.¹⁰¹

Trading

Buyers and sellers of Swiss and global securities meet electronically on the SWXess platform to determine prices and quantities traded per period. In 2020, it was Europe's third largest stock exchange in market value and the continent's leader in Life Sciences, with a free float market capitalization of CHF 1.5 trillion¹⁰² and about 250 companies, which ran the gamut of sizes and nationalities.¹⁰³ In 2022, the SIX Swiss Exchange offered more than 50,000 securities, including equities, bonds, exchange-traded products funds, and structured products, including large European blue-chip stocks, about 200 crypto products, and 17 cryptocurrencies.¹⁰⁴ It was also active in initial public offerings (IPOs), spin-offs, and new fund listings.¹⁰⁵ The SIX Swiss Exchange's financial services include listing, trading, post-trade, structured products (via SDX), market data, and education. It also prepares and distributes price and volume information and calculates performance indices. Switzerland's *Federal Law on Stock Exchange and Securities Trading* governs the SIX Swiss Exchange, and the FINMA supervises the SIX Swiss Exchange.¹⁰⁶

Products

The SIX Swiss Exchange Ltd. trades both clearing-eligible products and non-clearing eligible products. Examples of clearing-eligible products are shares,

¹⁰¹ RBC. Market Profile: Switzerland. Updated as of August 20. <https://www.rbcits.com/en/gmi/global-custody/market-profiles/market.page?dcr=templatedata/globalcustody/marketprofiles/data/switzerland> (Accessed on June 19, 2022).

¹⁰² As of August 2020. SIX, Listing: Your Gateway to Capital, Liquidity and Visibility, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/listing.html> (Accessed on June 18, 2022).

¹⁰³ Ahead of Switzerland are Euronext, London Stock Exchange, Frankfurt Stock Exchange, and Madrid Stock Exchange. Statista, Monthly Market Capital Value of European Stock Exchanges since the Coronavirus Outbreak Between December 2019 and January 2022, <https://www.statista.com/statistics/1102751/change-in-market-capital-of-european-stock-exchange-since-the-coronavirus-outbreak/> (Accessed on June 18, 2022).

¹⁰⁴ SIX, 100% Swiss Quality Trading, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/trading.html> (Accessed on June 21, 2022).

¹⁰⁵ SIX Swiss Exchange, Your Swiss Gateway to the World of Finance, Ibid. (Accessed on June 18, 2022).

¹⁰⁶ SIX Swiss Exchange, Regulation, www.six-swiss-exchange.com/participants/regulationen.html (Accessed on June 18, 2022).

exchange-traded funds (ETFs), and Swiss franc bonds that can be cleared through SIX x-clear Ltd. Examples of non-clearing-eligible products are structured securities, non-Swiss franc bonds, and sponsored foreign shares,¹⁰⁷ which cannot be cleared through SIX x-clear Ltd.

Clearing

Clearing-eligible products are sent, together with automated settlement instructions, to one of three clearing agents, SIX x-clear Ltd., LCH. Ltd., or EuroCCP.

Settlement

Clearing-eligible products are sent to and settled by SIX Securities Services Ltd. Financial products classified as non-clearing-eligible are sent directly from the SIX Swiss Exchange to either Euroclear Bank or Clearstream Banking Luxembourg, where they are settled.¹⁰⁸

SIX Securities Services Ltd.

SIX Securities Services Ltd. provides information technology and logistic support to clients of the SIX Securities Group. This support is usually provided via outsourced partnerships having expertise in using SIX Systems' technologically advanced computer infrastructure. The combined efforts of three organizations accomplish settlement:

- SIX Interbank Clearing Ltd., for cash transactions
- SIX Interbank Clearing Ltd. and SIX SIS (CSD), for OTC transactions, and

¹⁰⁷ In Switzerland, Swiss francs are the only trading currency for Switzerland's "sponsored foreign shares." They allow Swiss investors to avoid foreign exchange transaction costs. <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/trading/markets/sponsored-foreign-shares.html> (Accessed on June 18, 2022). On July 1, 2019, Switzerland suspended trading in sponsored foreign shares.

¹⁰⁸ A "clearing eligible" product is a security that can be cleared and reported by a CCP. On these products, the CCP collects margin. Three CCPs act as counterparties for members of the Swiss Stock Exchange: SIX x-clear, LCH Ltd., and euroCCP. SIX Swiss Exchange, Clearing, and Settlement: A Comprehensive Range of High-Quality Services, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/trading/trading-provisions/clearing-and-settlement.html> (Accessed on June 22, 2022).

- SIX Interbank Clearing Ltd., SIX SIS (CSD), and SIX x-Clear for on-exchange transactions.

SECOM

SECOM is Switzerland's custody and securities settlement platform for on- and off-exchange transactions. Managed by SIX SIS Ltd., it services more than 50 markets.¹⁰⁹ Using real-time straight-through processing, SECOM handles a broad spectrum of Swiss and foreign asset classes and currency security transactions.¹¹⁰ It has direct links to custodian banks and CSDs.¹¹¹ Since 2015, SECOM has had a direct connection to T2S, the pan-European settlement platform, giving Swiss customers the ability to settle security transactions on SECOM or T2S security platforms.¹¹²

Payment takes place when SECOM or T2S contact SIX SIS, which contacts SIC. Consequently, final settlement occurs when SECOM or T2S makes the appropriate security-related debits and credits, and final payment occurs when commercial banks or the SNB make the appropriate bank-related debits and credits. Switzerland's security transactions system has been described as a simultaneous, final, and irrevocable delivery-versus-payment system, with security buyers getting instant access to the securities and security sellers getting instant access to cash.¹¹³

Euroclear Bank

Euroclear Bank is a Belgium-based financial services company focused on security settlement, custody, and management services. It provides these services to more than 90 countries, including Switzerland. Euroclear covers Eurobonds, international Exchange-Traded Funds (ETFs), and domestic

¹⁰⁹ "SECOM" is the abbreviation for the "Settlement Communication System." Security transactions are also processed through Swiss CSD and T2S.

¹¹⁰ SNB, SECOM, the Securities Settlement System, 2009, www.snb.ch/en/mmr/reference/secom/source/secom.en.pdf (Accessed on June 19, 2022).

¹¹¹ SIX, Settlement and T2S, <https://www.six-group.com/en/products-services/securities-services/settlement-and-custody/settlement-and-t2s.html> (Accessed on June 19, 2022). SECOM has T2S CSD links for its clients. To understand the difference between a custodian and a depository, see Sneha Kulkarni, What Is the Difference between Custodian and Depository, Goodreturns, May 15, 2021, <https://www.goodreturns.in/classroom/difference-between-custodian-and-depository-1209465.html> (Accessed on June 27, 2022).

¹¹² RBC, Market Profiles: Switzerland, August 20, 2020, <https://www.rbcits.com/en/gmi/global-custody/market-profiles/market.page?dcr=templatedata/globalcustody/marketprofiles/data/switzerland> (Accessed on June 19, 2022).

¹¹³ Ibid.

securities from 48 countries, including equities, bonds, money market instruments, and funds.¹¹⁴ The company is also an ICSD for post-trade services.¹¹⁵ In 2014, SIX Securities Services and Euroclear formed an alliance targeting Swiss private banks and wealthy customers interested in making cross-border investments beyond what SIX offers. The *Agreement* covers order routing and unit settlement for fund transactions.

Clearstream Banking Luxembourg Ltd.

Clearstream is a wholly owned subsidiary of Deutsche Börse and a leading European supplier of post-trading services, including clearing, settlement, payment, custody, and management for more than 300,000 domestic and internationally traded securities. It settles more than 250,000 transactions daily, conducting trades in more than 110 countries.¹¹⁶ Clearstream processes real-time payments in Swiss francs and euros across Switzerland, Europe, and globally. Customers benefit from easy access to banking services using their smartphones and mobile apps.

Markets and Tradable Financial Instruments

In mid-2022, the number of tradable Swiss financial instruments exceeded 60,000, covering the equity, bond, and fund markets, as well as exchange-traded and structured products. Table 2.4 provides an overview of these financial instruments, separated by the markets and trading segments operated by the SIX Swiss Exchange. Each trading segment is subject to specific listing requirements, rules for trading, and regulatory requirements.¹¹⁷

In contrast to the number of tradable securities on the markets, Fig. 2.8 shows the turnover in the segments. Domestic shares have represented a relatively stable portion of the Swiss equity market, with shares varying between approximately 75% and 80% of market turnover. While turnover increased

¹¹⁴ Euroclear Services, Settlement: Euroclear Bank, <https://www.euroclear.com/services/en/settlement/settlement-euroclear-bank.html> (Accessed on June 19, 2022). Euroclear, Our Business, <https://www.euroclear.com/about/en/business.html> (Accessed June 27, 2022).

¹¹⁵ Euroclear, Our Business, <https://www.euroclear.com/about/en/business.html> (Accessed June 27, 2022).

¹¹⁶ CM-Equity Joins SIX Digital Exchange CSD Platform, SDX, May 25, 2022, <https://www.sdx.com/news/cm-equity-joins-six-digital-exchange-csd-platform> (Accessed on June 27, 2022).

¹¹⁷ SIX Swiss Exchange. 2022. *Trading Guide*. Valid as of 1 June 2022. <https://www.six-group.com/dam/download/the-swiss-stock-exchange/trading/trading-provisions/regulation/trading-guides/trading-guide.pdf> (Accessed on July 27, 2022). Figure 2.4 lists the segments for which the corresponding figures are published in the monthly reports.

Table 2.4 Tradable financial instruments by number: end of July 2022

Market	Segment	Number	Total number
Equity market	Blue chip shares	30	
	Mid-/Small-cap shares	195	
	Sparks shares	1	
	Secondary listing shares	27	
	Global depository receipts	4	
	Sponsored foreign shares	380	
	Separate trading lines	17	
	Rights and options	2	656
Bond market	Bonds—CHF domestic	1,322	
	Bonds—CHF foreign	662	
	Bonds—Non CHF	1,007	2,991
Fund market	Exchange-traded funds (ETFs)	1,635	
	Exchange-traded structured funds (ETSFs)	0	
	Investment funds	43	
	Sponsored funds	601	2,279
	Exchange-traded products (ETPs)	187	187
Exchange-traded product market	Exchange-traded products (ETPs)	187	187
Structured products market	Structured products & warrants	52,258	52,258
<i>Total</i>			58,371

Note Trading segments as published in the monthly reports

Source Data from SIX Swiss Exchange. Market Data. Statistics. Monthly Reports. <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/statistics/monthly-reports.html> (Accessed on August 1, 2022)

steadily from 2017 to 2019, the high turnover in 2020 reflects the turbulence in the financial markets caused by the global COVID-19 pandemic, with the subsequent negative impact on the global economy in 2021, which led to the corresponding decline in trading activity in the financial markets. As a result, trading turnover on SIX Swiss Exchange decreased by 27% to CHF 1282 billion in 2021 compared to 2020.

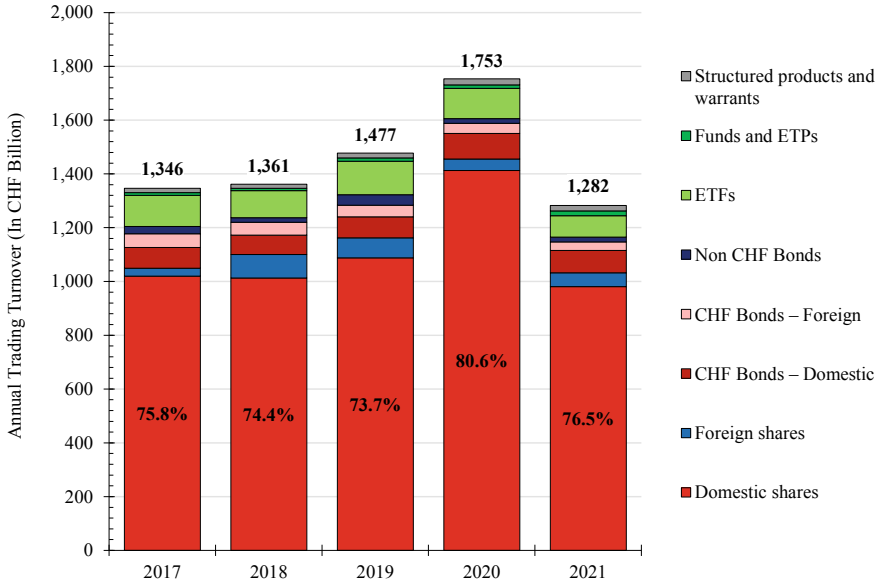


Fig. 2.8 Annual trading turnover of tradable financial instruments on SIX Swiss exchange: 2017–2021 (In CHF Billion) (Source Data from SIX Swiss Exchange. Market Data. Statistics. Monthly Reports. <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/statistics/monthly-reports.html> [Accessed on August 1, 2022])

Trading Participants of the SIX Exchange

Trading Participants¹¹⁸ interact directly on the SIX Swiss Stock exchange, on behalf of clients or on their own account. They are security traders or foreign security exchange participants authorized by the FINMA. They must comply with Switzerland’s *Stock Exchange Act* and with organizational, accounting, auditing standards, as well as follow the rules and directions established by the SIX Swiss Stock Exchange. As of end of July 2022, the list of Trading Participants includes a total of 95 financial services institutions, 44 of which are Swiss and 51 foreign.¹¹⁹

Becoming a Trading Participant is a two-step process, involving business setup with membership application and FINMA approval on the one hand,

¹¹⁸ SIX Group. Products & Services. SIX Swiss Exchange. Trading. Participation. Trading participants. <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/trading/participation/trading-participants.html> (Accessed on July 27, 2022).

¹¹⁹ SIX Group. Products & Services. SIX Swiss Exchange. Trading. Participation. <https://www.six-group.com/de/products-services/the-swiss-stock-exchange/trading/participation/participants-list.html#/trading> (Accessed on July 27, 2022).

and operational setup on the other hand, that can be completed after only four weeks.

Trading Participants must meet the following requirements for admission:

1. They must be authorized as a securities firm or as a foreign security exchange participant by the FINMA. Under the *Swiss Federal Act on Financial Institutions*,¹²⁰ securities firms are defined as entities, that, on a commercial basis;
 - Perform trades in securities on their own name for the account of clients;
 - Trade in securities for their own accounts on a short-term basis (as a member of a trading venue); or
 - Trade in securities for their own accounts on a short-term basis and furthermore quote continuously prices for individual securities to the public upon request.
2. They must participate in a SIX Swiss Exchange-recognized CCP or have access to one via a General Clearing Member.

Parallel to the business setup (i.e., membership application and FINMA approval), the operational setup process can start. Trading Participants must set up their trading infrastructures and networks while the SIX assembles the target configuration. The SIX Swiss Exchange works closely with Infrastructure Service Providers (ISP), Independent Software Vendors (ISVs), and Application Service Providers (ASPs) to support customers' trading infrastructure setups and optimize trading conditions.¹²¹

SIX Swiss Exchange supports three methods for Trading Participants' submissions of client orders. In all three cases, Trading Participants are responsible for the activities under their trading identification:

1. Client orders are directly entered and submitted to the exchange by registered traders of a Trading Participant under the participants' trading identification.

¹²⁰ Federal Act on Financial Institutions (Financial Institutions Act, FinIA) of 15 June 2018 (Status as of 1 August 2021). <https://www.fedlex.admin.ch/eli/cc/2018/801/en> (Accessed on May 27, 2022).

¹²¹ See <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/trading/trading-platform/service-providers.html> (Accessed on July 29, 2022).

2. Via Direct Electronic Access (DEA), Trading Participants permit their clients to transmit orders electronically to the participant's internal electronic trading systems for automatic onward transmission to the exchange under the participant's trading identification.¹²²

Trading Participants ("sponsors") may offer their clients a direct connection to the SIX Swiss Exchange via Sponsored Access (SA).¹²³ Sponsored users transmit orders directly and electronically to the exchange under the participant's identification, without the orders being routed through the participant's internal electronic trading systems. Because the legal relationship is between SIX Swiss Exchange and the Trading Participant and between Trading Participant as sponsor and the sponsored user, the participant is liable for all acts and omissions of the sponsored user, in the same way as for its own acts and omissions.

To help sponsors¹²⁴ monitor and manage sponsored users' positions and exposures, the SIX Swiss Exchange provides pre-trade and at-trade risk management controls that set customers' limits and control their trading activities. Included in this package of risk-management tools is the ability to create lists of restricted stocks and kill switches that delete outstanding client orders. Via the real-time feed FIX Drop Copy sponsors are informed about all the trading activities and the order flow of their sponsored users.¹²⁵

To ensure that there is sufficient liquidity in certain trading segments and that trades can be executed, two functions are required on the exchanges: market makers and liquidity providers. These functions are performed by trading participants on the exchange.¹²⁶

¹²² See section 4.3.4 of Trading Rules. SIX Swiss Exchange AG. 2021. *Trading Rules*, dated 2 July 2021, entry into force: 6 December 2021. <https://www.ser-ag.com/dam/downloads/regulation/trading/rule-books/rb-en.pdf> (Accessed on July 27, 2022).

¹²³ See section 4.3.5 of Trading Rules. SIX Swiss Exchange AG. 2021. *Trading Rules*, dated 2 July 2021, entry into force: 6 December 2021. <https://www.ser-ag.com/dam/downloads/regulation/trading/rule-books/rb-en.pdf> (Accessed on July 27, 2022).

¹²⁴ Sponsoring trading participants for the Sponsored Access as of end of July 2022: Banque Pictet & Cie SA, Credit Suisse International, and Instinet Europe Limited. <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/trading/participation/sponsored-access.html#scrollTo=sponsoring-participants> (Accessed on July 27, 2022).

¹²⁵ The Swiss Stock Exchange. 2020. *Sponsored Access Service Description*. <https://www.six-group.com/dam/download/the-swiss-stock-exchange/trading/participation/sponsored-access/sa-service-description.pdf> (Accessed on July 27, 2022).

¹²⁶ See section 5 and 6 of Trading Rules. SIX Swiss Exchange AG. 2021. *Trading Rules*, dated 2 July 2021, entry into force: 6 December 2021. <https://www.ser-ag.com/dam/downloads/regulation/trading/rule-books/rb-en.pdf> (Accessed on July 27, 2022).

Stock Exchange Laws and Regulations

In June 2007, the Swiss parliament approved the *Federal Act on the Swiss Financial Market Supervisory Authority (FINMASA)*, which entered into full force on January 1, 2009. Under FINMASA, government supervision of banks, insurance companies, stock exchanges, and other financial intermediaries¹²⁷ were merged into one authority called the *Swiss Financial Market Supervisory Authority (FINMA)*, whose primary objective is to protect creditors, investors, and insured individuals. In addition, this *Act* aimed to guarantee the efficient functioning of financial markets, reinforcing Switzerland's competitiveness and reputation as an important financial center.

Supervision of the Swiss Stock Exchange is based on the principle of self-regulation. Enforcement of executive regulations is handled by SIX Exchange Regulation; legislative regulations are managed by the Regulatory Board; and judicial responsibilities are the responsibility of the Sanction Committee, Appeal Board, and Board of Arbitration.¹²⁸ The FINMA has ultimate supervisory powers, but it is limited to granting operating licenses, approving stock exchange rulebooks, and conducting ongoing audits.¹²⁹ This regulatory setting has given the Swiss Stock Exchange a relatively high degree of flexibility and considerable powers to self-monitor, self-enforce, and self-approve market actions.

During the past two decades, Swiss regulatory authorities have moved from a traditional, principle-based system to one that relies increasingly on detailed rules and regulations for reporting, transparency, and shareholder rights. Prior to 1990, listed companies were not required to publish audited, consolidated reports. There were no reporting requirements regarding shareholdings, and takeover defense tactics were, for the most part, unrestrained. Minority shareholders' rights hardly existed, and there were virtually no limitations on a corporation's right to purchase its own shares.

Times have changed, and recent trends in Switzerland favor inundating shareholders with corporate information, such as quarterly financial statements and daily news reports of business events. Swiss managers would rather err on the side of disclosure because they fear regulators might later interpret a piece of missing information as essential to a stock price's evolution.

¹²⁷ For more information on *FINMASA*, please see Chapter 5: *Switzerland's Bank Regulators and Laws*.

¹²⁸ SIX, Supervision and Regulation, <https://www.six-group.com/en/company/governance/monitoring-and-regulation.html> (Accessed on June 10, 2012).

¹²⁹ *Ibid.*

Today, Switzerland requires disclosure of shareholder identities when an individual's ownership level reaches, exceeds, or falls below (separately) 3, 5, 10, 15, 20, 25, 33.3, 50, or 66.67% of all outstanding shares.¹³⁰ Furthermore, a listed corporation's ability to refuse share registration is constrained to percentage limits that are incorporated in its articles of association. A minority shareholder's request for business information, if supported by a majority of shareholders, cannot be refused.

Conclusion

Despite its diminutive geographic size relative to many other international competitors, Switzerland has built an excellent financial infrastructure focused on its customers' needs, especially in private banking. Swiss capital and money markets offer high levels of efficiency and a user-friendly orientation that can be traced mainly to private ownership and the self-regulatory structure of the SIX Group.

Switzerland's capital-intensive financial infrastructure and harmonized regulatory environment have enhanced the competitiveness of its financial intermediaries and reinforced an already-existing drift toward consolidation through mergers, acquisitions, and affiliations. Still, this trend is not unique to Switzerland. Since the beginning of the twenty-first century, numerous European and (particularly) Asian stock exchanges have merged and plan to continue doing so in the future.

The SIX Group is rolling out its innovative payment systems, called eBill and QR-bill, which will make payments simpler, faster, and more efficient by reducing the chances of making errors. Furthermore, partnering with the FQX and bringing eNotes on the SDX platform will help create a global debt infrastructure. The collaboration will allow institutional investors to access eNotes directly from the custodial banks.

Moving forward, the SIX Group, like all its competitors, will have to weigh the cost-saving advantages of consolidation against the specialized care and tailor-made solutions that customers increasingly demand. While the future is not predictable, it is conceivable. Switzerland has moored its financial ship to private banking services, one of the market's most rewarding but demanding sectors. Fortunately, Swiss financial institutions have centuries of first-hand

¹³⁰ Clearstream, Disclosure Requirements—Switzerland, April 8, 2020, <https://www.clearstream.com/clearstream-en/products-and-services/market-coverage/europe-t2s/switzerland/disclosure-requirements-switzerland-1280890> (Accessed on June 22, 2022).

experience in this area, an embedded client base, and a financial system that delivers high-quality services at competitive prices.

Finanzplatz Schweiz is not a destination but a journey, which Switzerland began about four decades ago and continues today. Keeping pace with changing global demographics, financial and payment systems will take careful and concerted steps, particularly with the threat that DLT platforms could make existing fixed assets anachronistic.

Appendix: Listing of Six Corporate Services

The SIX Group offers numerous services to its customers. This appendix lists them according to whether they are in the “Exchanges,” “Securities Services,” “Financial Information,” or “Banking Services” business areas.

Exchanges¹³¹

SIX Swiss Exchange

- Listing
 - Equities
 - IPO
 - IPO for SMEs
 - Services for Equity Issuers
 - Bonds
 - List of ETFs, ETPs, and Funds
 - ETFs
 - ETPs
 - Mutual Funds
 - Structured Products
 - Connexor
- Trading
 - Markets
 - Equities
 - SwissAtMid
 - Swiss EBBO
 - Sponsored Foreign Shares

¹³¹ SIX, Exchanges, <https://www.six-group.com/en/site/exchanges.html> (Accessed on July 11, 2022).

- Bonds
- ETFs
- ETPs
- Mutual Funds
- Structured Products
- Participation
 - Trading Participants
 - General Clearing Members
 - Traders
 - Sponsored Access
- Trading Platform
 - Industry-standard Interfaces
 - Connectivity Options
 - Microwave Technology
 - Service Providers
- Trading Provisions
 - On-order-book Trading
 - Orders and Quotes
 - Trading Hours
 - Reporting
 - Clearing and Settlement
 - Regulation
- Deal Pool
- Investing Sustainability
- Market Data
 - Shares
 - Bonds
 - ETFs
 - ETPs
 - Mutual Funds
 - Structured Products
 - Swiss Indices
 - Statistics
 - Data Services
- Education
 - Pre-IPO (Sparks IPO Academy)
 - Equity Issuers
 - Trading
 - Post-Trading

- Advanced Financial Training
- Derivatives Fundamentals Class (DFC)
- Derivatives Master Class (DMC)

SIX Digital Exchange

BME Exchange

SIX Group Participants

- LCH Ltd.
- EuroCCP

Securities Services¹³²

- Clearing
 - Clearing Products
 - Clearing Membership
 - Clearing Contractual Framework
- Settlement and Custody
 - Settlement and T2S
 - Swiss Custody
 - International Custody
 - Asset Servicing
 - Global Fund Services
 - Issuer Services
 - Technical Connectivity
- Securities Finance
 - Repo
 - Securities Lending & Borrowing
 - Triparty Collateral Management
 - Collateral Cockpit
- Tax Services
 - Advanced Tax Services
 - Standard Tax Services
 - Regulatory Tax Services

¹³² SIX, Securities Services, <https://www.six-group.com/en/products-services/securities-services.html> (Accessed on July 11, 2022).

- Trade Repository

Financial Information¹³³

- Reference and Pricing Data
 - Reference Data
 - Global Corporate Actions
 - Market Data
 - Mdf
 - apiD
 - SIX Flex
 - SIX iD
 - Fund Data
- Regulatory Services
 - Tax and Compliance
 - Sanctioned Securities Monitoring Service
 - SIC Tax Score
 - SIX Tax on Instrument
 - Stamp Duty and Financial Transaction Tax
 - Domestic Tax Packages
 - FATCA Compliance
 - Legal Entity Identifier (LEI) Data Service
 - IRS 871(m)
 - Investor Protection Services
 - MiFID II
 - Financial Service Act (FinSA)
 - Priip Kid
 - Priip Kid
 - Product Risk Indicator (PRI)
 - AIFMD
 - Solvency II
 - Reporting Services
 - CSDR Data Service
 - SFTR Data Service
 - CRS & AEOI

¹³³ SIX, Financial Information, <https://www.six-group.com/en/products-services/financial-information.html> (Accessed on July 11, 2022).

- ESG Regulatory Data
- Indices
 - Swiss Indices
 - Swiss Market Index (SMI)
 - Swiss Bond Index (SBI)
 - Swiss Reference Rates (SARON)
 - ESG Indices
 - SPI Multi Premia
 - SPI Gender Equality
 - SIX Crypto Market Index 10
 - SDX Crypto Indices
 - Benchmark Regulation Swiss Indices
 - Nordic Indices form SIX
 - Sweden
 - Denmark
 - Finland
 - Nordic
 - Crypto Indices
 - SIX Crypto Market Index 10
 - SDX Crypto Indices
 - Customized Indices
 - BME Indices
- Display and Delivery Capabilities
 - SIX Flex
 - Valordata Feed
 - Market Data Feed
 - Intraday Pricing Services
 - Regulatory Hub
 - apiD
 - SIX iD
- ESG data
 - ESG Regulatory Data
 - ESG Performance Data
 - ESG Indices
 - ESG Equity Indices
 - ESG Bond Indices
 - SPI Gender Equality
 - ESG Strategy Indices

Banking Services¹³⁴

- Billing and Payments
 - eBill
 - QR-bill
 - Payment Standards
 - Paynet
 - Direct Debits LSV+ and BDD
- Debit and Mobile Services
 - Issuing Processing
 - Issuer Services
 - License Processing
 - SIX Account Gateway
 - New Debit Card
 - Digital Services
- Cash
 - Transaction Processing
 - Cash Services
 - National Cash Scheme
- Connectivity
 - bLink
- Interbank Clearing
 - SIC System
 - euroSIC System
- Standardization
 - ISO payments
 - QR-bill
 - IBAN
 - EBICS
 - SEPA

¹³⁴ SIX, Banking Services, <https://www.six-group.com/en/products-services/banking-services.html> (Accessed on July 11, 2022).

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.





3

The Swiss Banking System

Introduction

Banks are as much a part of Switzerland's international image as the Alps, chocolates, and watches. For centuries, their stability, competence, and discretion have attracted financial capital worth billions of Swiss francs to centers like Zurich, Geneva, Basel, and Lugano. Although instrumental in facilitating Switzerland's early economic growth, pre-industrial Swiss banks developed mainly to export domestic savings and act as financial turntables for foreign capital inflows. Switzerland imported foreign capital in this turntable capacity and then exported it to finance projects in foreign countries.

Since the sixteenth century, Switzerland has had a surplus of investable funds, primarily due to its relative lack of domestic demand for real capital investments, a high saving rate, and significant inflows of foreign financial capital. Therefore, expertise in attracting funds and investing them in foreign projects became imperative. Private banks arose to manage the surplus of investable capital. During the seventeenth century, Geneva's private banks financed much of the French court's capital needs. Beginning around 1730, ongoing capital exports required the development of a much broader array of financial institutions.

The structure of Switzerland's banking system, as it exists today, was created in the mid-nineteenth century, mainly between 1850 and 1880, reaching its peak in 1889. Consolidation occurred throughout the twentieth

century and has continued into the twenty-first century, with Credit Suisse and UBS¹ accounting for a substantial portion of the acquisitions.

The first banking law to provide federal supervision of domestic banks was the *Swiss Federal Act on Banks and Savings Banks (Banking Act, BA)*,² passed in 1934. It was the byproduct of multiple political, social, and economic forces, such as instability in surrounding European countries after World War I, the rise of Adolf Hitler and his National Socialist Party, excessive risks taken during the 1920s by Switzerland's major banks, the Swiss Supreme Court's sequestration decision, and a catastrophic reduction in global trade due to the Great Depression.³

The *BA* was also significant because it established federal laws protecting confidential customer information in banks (the so-called banking secrecy laws) at a time of intensifying Nazi espionage and threatened violators with imprisonment or hefty fines.⁴ Previously, general privacy rights were protected by the *Federal Constitution*, scattered and inconsistent cantonal regulations, domestic civil and commercial codes, and the determination of banks under Swiss law to provide confidentiality protections to their customers. Federal protection for confidential customer information residing in banks did not exist.

Switzerland built its financial sector on the belief that self-regulation is the most effective and efficient way to manage and control banks and related financial entities. Nevertheless, federal supervision has become tighter during the twenty-first century, turning Switzerland's financial system into one of the world's most closely regulated. Relatively recent economic and financial disruptions, such as the US-subprime mortgage collapse, which led to the "Great Recession" (2007–2009) and European debt crises (2008–2012⁺), incentivized Switzerland to pass and enforce stricter regulations and coordinate its efforts with foreign nations to avoid adverse spillover effects.

This chapter starts by focusing on Switzerland's financial industry, in general, and the nation's banking system, in particular. It looks at the

¹ Formerly, "UBS" was the abbreviation for "Union Bank of Switzerland AG," but after its 1998 merger with Swiss Bank Corporation, the firm's name became UBS AG.

² Der Bundesrat, Bundesgesetz über die Banken und Sparkassen (Bundesgesetz, BankG), November 8, 1934, https://www.fedlex.admin.ch/eli/cc/51/117_121_129/de (Accessed on August 23, 2022). An unofficial English translation can be found at KPMG, Swiss Federal Act on Banks and Savings Banks (Banking Act, BA), November 8, 1934 (Status as of January 1, 2021), <https://assets.kpmg/content/dam/kpmg/ch/pdf/ch-banking-act-en.pdf> (Accessed on August 23, 2022).

³ For more information on these causes, see Chapter 4: *Swiss Bank (Customer) Secrecy & and the International Exchange of Information*. Also, see Robert U. Vogler, *Swiss Banking Secrecy: Origins, Significance, Myth, Association for Financial History (Switzerland and Principality of Lichtenstein)*, Zurich, 2006.

⁴ Chapter 4: *Swiss Bank (Customer) Secrecy & the International Exchange of Information* explains the seven major forces behind the Banking Act of 1934.

formidable challenges Switzerland's financial system has faced recently and is likely to face in the foreseeable future. Swiss banks' margins have fallen due to low (or negative) interest rates, costly new reporting requirements, more stringent equity and liquidity requirements, and a strong franc. Looking to the future, there are other noteworthy challenges likely to continue, such as:

- *Competing in increasingly digitalized markets*, which will require financial institutions to navigate an assortment of interrelated issues, such as cybersecurity, FinTech competition, open banking, including open finance and embedded finance, and digital money, including blockchain banking, cryptocurrencies, and central bank digital currencies. New technologies and methods, like blockchain-based distributed ledger technology (DLT) platforms,⁵ directed acrylic graphs, distributed hash tables, and hash graphs, could change the way financial business is conducted;
- *Gaining and maintaining access to foreign financial markets and managing rising regulatory costs*, which will require the Swiss government and central bank to adapt their financial rules and regulations to those of other countries and international standards;
- *Engaging in sustainable finance*, which will compel Swiss financial institutions and their customers to understand the tradeoffs among environmental, social, and governmental (ESG) investments;
- *Changing tax rules to make Switzerland globally competitive*, which will mean taking a close look at the nation's stamp and withholding taxes, as well as having the federal government and cantons react wisely to the Organization for Economic Co-operation and Development (OECD)/G20's efforts to enact a global minimum tax⁶;
- *Navigating volatile interest rates*, which will require measured responses to changes in real interest rates and expected inflation;
- *Ensuring the safety of systemically important financial institutions (SIFIs), and*
- *Protecting the financial system from paradigm-changing events*, such as pandemics, wars, the failure of one or more SIFIs, or a military invasion, any one of which could disrupt supply chains and reorient global priorities.

This chapter ends by focusing on the characteristics of Switzerland's banking system, such as:

⁵ A DLT platform is a technological infrastructure and protocol spread across a computer network, using multiple entities and locations to validate transactions, which are completed, recorded, and updated in an immutable manner.

⁶ The G20 or Group of Twenty is an intergovernmental forum comprising 19 countries and the EU, which work together to address major global economic issues.

- The value added to the nation's economy (measured in Swiss francs),
- On- and off-balance-sheet profitability,
- Growth in assets during the past three decades,
- Rivalry and conventions,
- The universal banking system,
- Deposit insurance,
- Banking structure,
- Sources of profitability,
- Size relative to other major countries,
- Level of internationalization, and
- Major banking sectors.

Significant Challenges Facing Swiss Banks

Switzerland has established its identity as a leading global financial center, but the nation's continued success will be based on its ability to exploit opportunities in the following areas.

Competing in Increasingly Digitalized Markets

“Digitalization” encompasses a broad spectrum of issues, including cybersecurity, FinTech competition, open banking, and digital money.

Cybersecurity

Cybercriminals have accentuated the need for all businesses, particularly financial institutions, to have adequate computer security systems to protect sensitive customer information and internal company records. Annual losses to businesses are estimated in billions of Swiss francs.⁷ Relatively recent technologies, such as 5G and quantum computing, have increased the speed with which cyberattacks can take place. At the same time, the Internet of Things (IoT)⁸ has dramatically broadened the surface area for attackers by creating new passageways and back alleys to confidential records.

⁷ Stéphane Monier, Cybersecurity Investment Opportunities, March 9, 2022, <https://www.lombardodier.com/contents/corporate-news/investment-insights/2022/march/cybersecurity-investment-opportunities.html> (Accessed on August 23, 2022).

⁸ The Internet of Things (IoT) describes a network of physical objects—“things”—that are embedded with sensors, software, and other technologies to connect and exchange data with other devices and systems over the Internet.

Cyber terms, such as botnets, crypto-jacking, denial of service, malware, phishing, ransomware, social engineering, spyware, viruses, and worms, have become familiar to the information technology departments of virtually all companies, particularly to financial intermediaries and their cybersecurity departments.⁹ Table 3.1 defines these terms.

Cyberattacks can disrupt supply chains, threaten day-to-day operations, and create reputational damages that might take years or decades to erase. They can cause substantial physical and financial damages, just like armored tanks, fighter planes, incendiary bombs, and automatic firearms.¹⁰ By taking control of plants, contaminating water supplies, degrading utility and sewage systems, and leaving hospitals incapacitated, cyberattacks can disable a nation's central financial and production arteries and veins.

The United Nations (UN) has studied this issue, looking for an international approach to cyber-threats.¹¹ The Swiss Bankers Association (SBA) has joined the effort to fight this growing menace, emphasizing the need for federal support, such as through the *National Strategy for the Protection of Switzerland against Cyber Risks (NCS)*.¹² It has recommended community-wide measures that¹³:

- Create a “Competence Center for Security,” unifying private efforts to combat cybercrime;
- Create a “Crisis Organization,” increasing Swiss banks’ cyber-resilience by generating realistic cyber-scenarios and finding ways to combat them;
- Increase user sensitivity to potential cyberattacks;
- Use cybersecurity specialists to educate the Swiss population of all ages and education levels, such as secondary schools, vocational schools, universities, colleges, and continuing education, and
- Promote collaboration within the Swiss financial community.

⁹ Jules Trocchi, The Cyber Security Conundrum, Pictet Asset Management, August 1, 2019, <https://www.am.pictet/en/us/mega/new-cyber-security-strategy> (Accessed on August 23, 2022).

¹⁰ Stéphane Monier, Cybersecurity Investment Opportunities, *ibid*.

¹¹ Michael Schmitt, Just Security, The Sixth United Nations GGE and International Law in Cyberspace, June 10, 2021, <https://www.justsecurity.org/76864/the-sixth-united-nations-gge-and-international-law-in-cyberspace/> (Accessed on August 23, 2022).

¹² Swiss Confederation, National Strategy for the Protection of Switzerland Against Cyber Risks, June 19, 2012, https://www.enisa.europa.eu/topics/national-cyber-security-strategies/ncss-map/National_strategy_for_the_protection_of_Switzerland_against_cyber_risksEN.pdf (Accessed on August 23, 2022).

¹³ Swiss Bankers Association, Swiss Banking, Cybersecurity, Undated, <https://www.swissbanking.ch/en/topics/digitalisation-innovation-and-cyber-security/cybersecurity> (Accessed on August 23, 2022).

Table 3.1 Description of digitalization terms

Term	Description
Botnet <i>"Robot Network"</i>	A botnet is a network of computers that has been hacked and infected with malware, allowing a centralized cybercriminal to control the system.
Crypto-jacking	Crypto-jacking occurs when cybercriminals secretly use a single computer or computer system for their benefit to mine cryptocurrencies. Mining can be a costly use of energy.
Denial of Service <i>(DoS)</i>	In the context of this chapter, "denial of service" (DoS) occurs when a user is cut off intentionally and maliciously from Internet service. There are multiple possible causes, but one popular method, "distributed denial of service (DDoS)," overloads a website by hacking into numerous computers and installing malicious software. Companies can use this technique to hurt competitors, and hackers can employ it to extort funds by threatening denial of service.
Malware <i>"Malicious Software" or "Malicious Code"</i>	Malware is a malicious code, program, or file that infects a computer and compromises its information. Often, it is called a virus, worm, or Trojan horse. "Malware," "Malicious Software," and "Malicious Code" are different names for the software used in cyberattacks.
Phishing <i>"Fishing for information"</i>	Phishing utilizes e-mail or the Internet to gain confidential information (e.g., passwords) with fake credentials or infected websites, such as claiming to represent a bank or tax authority. When an individual or group is specifically identified (i.e., before the first exchange), the tactic is called "Spear Phishing," which is a form of social engineering.

(continued)

Table 3.1 (continued)

Term	Description
Ransomware <i>“Ransom Software”</i> <i>“Blackmail Trojan”</i>	Ransomware is software that extorts payments from individuals, companies, or governments. The cyber-attacker gains access to a computer, infects it with malicious software that encrypts or wipes the computer clean of information, and then demands a ransom to unlock it. Ransomware is often called a “Blackmail Trojan” because the malicious program is secretly implanted into a computer or computer system, like the hollow wooden horse used in 1184 BC by a Greek army to enter Troy. Once inside, the program spreads throughout the network. Ransomware is a type of malware.
Social Engineering	“Social engineering” is a term to describe the malicious and often strange ways predators wrest confidential information from unsuspecting individuals. Tactics often include using phone or computer dialogs to gain a person’s trust or arouse fear, hoping victims will cower and divulge confidential information or disclose ways the social engineer can access computer networks.
Spyware	Spyware is a program or program collection that secretly collects information on a user.
Virus	A virus is malware that infects a computer system’s applications and codes. Like a human virus, it replicates and grows with time.
Worm	A worm is malware that finds its way into computers, generally utilizing e-mail attachments. Once in place, they replicate by sending themselves (secretly) to an unsuspecting user’s e-mail lists.

The cyber defense tactics used by financial institutions in the past are unlikely to protect confidential information in the future, as hackers find it easier to access and decode programs. Quantum computing, which has increased computational speeds significantly, is paving the way for malicious outsiders to access private data. Old cybersecurity strategies relied on erecting higher and wider cyber walls to defend against attacks. The new wave uses internal digital defenses to attack and neutralize computer viruses—in much

the same way the human immune system uses antibodies to attack and neutralize viruses.

Insurance companies, like Swiss Re and Zurich Insurance Group, now offer fully-integrated cybersecurity, risk management, and insurance solutions, including risk evaluation and measurement, to defend against cyberattacks. Insurance solutions range from traditional commercial insurance to highly customized forms of protection that cover system and data recovery, customer claims for damages, business interruption, fraud, and theft.¹⁴

FinTech Competition

“FinTech” is an abbreviation for “financial technology.” The term is used rather broadly to describe high-tech advances that:

- Adapt, improve, or automate the speed and efficiency of financial services;
- Expand the accessibility of financial services (e.g., reach out to unbanked groups within a country);
- Enhance interoperability between and among financial services, or
- Lower transaction risks and costs.

In Switzerland, the FinTech industry has expanded rapidly, with newly developed software and mobile applications that range from simple payment apps, crowd-funding, crowd-lending, and robo-advice to highly complex DLT platforms. It is unlikely that FinTech companies will displace banks any time soon. Nevertheless, as competitive pressures from these companies intensify in the coming years, Swiss financial intermediaries will face continuing pressure to “use it or lose it.”

During the past decade, Switzerland has become a world leader in domestic-oriented and internationally oriented DLT-based and cryptocurrency-based applications. In 2022, there were nearly 400 FinTech companies in Switzerland, with about a third of them active in DLT-related projects. “Crypto Valley,” in Zug which lies in Central Switzerland, and the region around Geneva are global front-runners in developing digital technologies.

¹⁴ Sandy Coddling, Cyber Insurance, 2022, <https://corporatesolutions.swissre.com/insurance-solutions/cyber.html> (Accessed on August 23, 2022). Also, see Cyber Insurance, Cyber Incidents: What You Should Know, Undated, https://www.zurich.ch/en/corporate-customers/property-cyber/cyber-insurance#versicherungsschutz_as (Accessed on August 23, 2022).

Singapore, London, Amsterdam, Toronto, New York City, San Francisco, and Hong Kong are strong competitors.¹⁵

Growth in FinTech activities has brought concerns about how to regulate them. Swiss FinTech companies are not permitted to pay interest on, invest, or comingle customer funds with their own.¹⁶ They must (1) obey *Anti-Money Laundering Act (AMLA)* rules, (2) restrict the financial services they can offer, (3) limit the corporate forms they can take, and (4) comply with prudent risk-management rules.

The nation's universal banking system, incubators, and accelerators have provided FinTech companies with a user-friendly environment to start and grow.¹⁷ FinTech licenses are intentionally less stringent than bank licenses. On January 1, 2019, Switzerland amended the *BA*, requiring FinTech licenses for companies with total deposits exceeding CHF 100 million and accepting deposits greater than CHF 1 million. These companies are neither regulated by the Swiss Financial Market Supervisory Authority (FINMA) nor required to obey Swiss banks' capital adequacy requirements. Instead, FinTech companies must have equity, in acceptable form, equal to at least CHF 300,000 or 3% of their deposit liabilities.

In general, the FINMA's regulatory approach to them has been "technology-neutral" to reduce obstacles to the birth, growth, and development of innovative companies.¹⁸ To this end, the FINMA has expressed its willingness to provide pre-launch FinTech businesses with case-by-case advice on an array of topics, such as business models using digital assets or tokens,¹⁹

¹⁵ Greater Zurich Area, *Fintech & Blockchain: Where World-Class Technology Meets Swiss Reliability*, 2022, https://www.greaterzuricharea.com/en/fintech-blockchain?gclid=EAIaIQobChMIilv3J0fms9wIVlf_jBx0HWgb7EAAAYASAAEgLJJPD_BwE (Accessed on August 23, 2022). Also, see Thomas Ankenbrand, *Who Will Survive the FinTech Evolution?*, Hochschule Luzern, February 27, 2019, <https://www.hslu.ch/en/lucerne-university-of-applied-sciences-and-arts/about-us/media/medienmitteilungen/2019/02/27/fintech-studie-2019/> (Accessed on August 23, 2022).

¹⁶ René Bösch and Franziska Balsiger-Geret, *Banking Regulation in Switzerland: Overview*, Thomson Reuters: Practical Law, Law stated as December 1, 2021, 2022, [https://uk.practicallaw.thomsonreuters.com/w-007-8999?transitionType=Default&contextData=\(sc.Default\)&firstPage=true](https://uk.practicallaw.thomsonreuters.com/w-007-8999?transitionType=Default&contextData=(sc.Default)&firstPage=true) (Accessed on August 23, 2022).

¹⁷ With "universal banking," financial institutions are permitted to engage in virtually all financial activities, such as taking deposits, lending, managing assets, providing investment advice, and engaging in payment transactions. The adjective "virtually" is used because a financial firm might need a banking license and a securities-firm license to conduct all its desired activities.

¹⁸ Peter Hsu and Daniel Flühmann, *Banking Laws and Regulations 2022 | Switzerland*, Global Legal Insights, 2022, <https://www.globallegalinsights.com/practice-areas/banking-and-finance-laws-and-regulations/switzerland#:~:text=The%20core%20of%20the%20new,Infrastructures%20and%20Market%20Conduct%20in> (Accessed on August 23, 2022).

¹⁹ FINMA distinguishes among three primary types of tokens: (1) payment tokens are pure cryptocurrencies, such as bitcoin and ether; (2) utility tokens are digital assets that provide access to DLT-based applications or services; and (3) asset tokens are claims on tradeable assets or against an issuer, similar to equity or debt rights. Hybrid tokens are combinations of these primary types.

initial coin offerings,²⁰ stablecoins, and blockchain technology. It has also offered guidance on rules and legal interpretations. This hands-off approach is noteworthy because FinTech customers face more significant risks than their bank counterparts, whose deposits are prioritized and insured by Switzerland's depositor protection scheme.²¹

Among the relatively recent FinTech developments are:

- In August 2019, the FINMA granted banking and security dealers' licenses to SEBA Crypto AG and Sygnum Bank AG, two start-up blockchain service providers;
- In September 2020, Switzerland's Parliament passed the *Law on Distributed Ledger Technology (DLT-Law)*, which introduced "DLT-Securities" under the Swiss Code of Obligations (1911), allowing the tokenization of rights, claims, and financial instruments;
- In February 2021, ledger-based securities began;
- In August 2021, the Swiss Federal Council enacted the remaining provisions of the *DLT Law*, and Switzerland introduced a new stand-alone license under the *Financial Market Infrastructure Act (FinMIA)*, called the "DLT Trading Facilities License," to accommodate firms' trading and post-trading activities in standardized, uncertificated DLT securities²²; and
- In September 2021, the FINMA approved the world's first independent DLT-based stock exchange²³ and the first Swiss crypto fund (Crypto Finance).²⁴

²⁰ FINMA, Supplement to the Guidelines for Enquiries Regarding the Regulatory Framework for Initial Coin Offerings (ICOs), September 11, 2019, <https://www.finma.ch/en/-/media/finma/dokumente/dokumentencenter/myfinma/1bewilligung/fintech/wegleitung-stable-coins.pdf?la=en> (Accessed on August 23, 2022).

²¹ Der Bundesrat, Verordnung über die Banken und Sparkassen (Bankenverordnung, BankV), Article 6 (2), April 30, 2014, <https://www.fedlex.admin.ch/eli/cc/2014/273/de> (Accessed on August 23, 2022).

²² FINMA, Licensing as a DLT Trading Facility, Undated, <https://www.finma.ch/en/authorisation/fintech/dlt-handelsystem/> (Accessed on August 23, 2022). Also, see FINMA, Guidelines, August 2, 2021, https://www.finma.ch/-/media/finma/dokumente/dokumentencenter/myfinma/1bewilligung/fintech/w_dlt-handelsystem_20210802_de.pdf?sc_lang=en (Accessed on August 23, 2022). Also, see FINMA, FINMA Issues First-Ever Approval for Stock Exchange and a Central Securities Depository for the Trading of Tokens, September 10, 2021, <https://www.finma.ch/en/news/2021/09/finma-issues-first-ever-approval-for-a-stock-exchange-and-a-central-securities-depository-for-the-trading-of-tokens/> (Accessed on August 23, 2022).

²³ FINMA authorized SIX Digital Exchange AG to act as a central securities depository. Its associated company, SDX Trading AG, was authorized to act like a stock exchange.

²⁴ Crypto Finance is administered by PvB (Pernet von Ballmoos AG) with custody by SEBA Bank.

Open Banking

“Open banking” allows regulated third-party providers to access an individual’s account data (e.g., name, account type, and transactions), product data (e.g., products and services offered by a financial institution), and payment information (e.g., to whom and where funds should be transferred). Access is permitted only with customers’ consent, and consent can be withdrawn at any time.²⁵ Consistent with Switzerland’s original (i.e., 1934) banking secrecy rules, open banking is based on the belief that ownership and control of financial information created by and for customers should belong to customers.²⁶ Therefore, open banking is a movement toward customized and integrated financial service development.

Switzerland has a market-driven approach to information sharing, which means there are (currently) no specific legal or regulatory barriers or requirements. Banks can decide with whom they wish to work and the interfaces they want to make. As a result, bank and third-party provider relations are based already on open market forces.

Examples of open banking services are

- Apps that allow “smart onboarding” for quick account and customer identity verification, auto-filling forms, income verification, and credit checks;
- Payment products that improve cash flows, lower costs, increase visibility, and reduce fraud, such as finance dashboards, auto-saving identity details, and smart budgeting²⁷;
- Access to more complete and accurate credit histories;
- Financial and cash management evaluations;
- Apps that aggregate bank accounts; and
- Online payments (domestic and international) that are quicker, less complex, and more secure.

Open banking can be viewed as entry-level access to a financial hierarchy that includes “open finance” and “embedded finance,” each at a higher level

²⁵ Open Banking Excellence, Open Banking: Back to Basics: A Guide for Those Starting the Journey to ‘Open Life,’ March 2022, https://www.openbankingexcellence.org/wp-content/uploads/2022/03/obe_-backtobasics_ebook_digitalid.pdf (Accessed on August 23, 2022).

²⁶ Giovanni Caccavello, Back to Basics: What Is Open finance?, Open Banking Excellence, November 11, 2021, <https://www.openbankingexcellence.org/blog/back-to-basics-what-is-open-finance/#:~:text=Open%20Finance%20involves%20extending%20Open,Credit%2C%20Pensions%20etc> (Accessed on August 23, 2022).

²⁷ Giovanni Caccavello, Back to Basics: What Is Open Finance?, *ibid.*, p. 11.

of integration than the preceding one. Big-tech companies, such as Amazon, Apple, Facebook, and Google, have entered this competitive environment by incentivizing customers to use novel payment alternatives, such as Apple Inc., which combines “Apple Pay” with the company’s “Buy Now, Pay Later” service.

Open Finance

Open finance extends open banking into other finance lines, such as insurance, investments, mortgages, pension funds, and FinTech. Customer information and data are shared (securely) among a broad array of financial institutions, matching customer needs with innovative products and services. If successful, open finance will encourage innovation, competition, and product customization. Open finance liberates financial service providers from self-developing every link in their product chains. Instead, they can use application programming interfaces (APIs) to connect their computer systems to external vendors that offer the desired finance services more efficiently or effectively.

One way to understand open finance is to picture a stack of boxes, each representing a different financial service and provider. From the pile, individuals and businesses can mix and match the services and providers they want, resulting in customized financial packages. One set of boxes in this stack of financial alternatives might be for “core services,” such as payment processing and consultancy. A second set might be for “mezzanine services,” such as foreign exchange, cross-border transfers, and compliance. Finally, another set might include “broader services,” including cryptocurrencies, digital wallets, customer identity, credit rating, and lending. Ideally, customers could have the exact combination of services and providers that best fits their needs.

Open finance holds a promise to accelerate the speed of new services to market and lower costs by moving away from the “do-it-yourself” (DIY) mentality. With open finance, legacy financial companies and new-to-the-market FinTechs could tap alternative revenue sources, access new customer segments, modernize their value chains, and create innovative products and processes.

Embedded Finance

Embedded finance is the most integrated and sophisticated level of the “open-banking” trinity because it makes financial service applications available to

any business, network, or industry. Product and service providers could rent or lease financial services from the companies of their choice, using APIs to link their computer systems. Doing so would allow these companies to build financial services into their product offerings and brands without the associated research, development, maintenance, licensing, and compliance costs, resulting in stronger customer loyalty, new revenue streams, and access to broader and deeper customer data. The European Union (EU), via its *Payment Services Directive 2 (PSD2)* rules, and the United Kingdom (UK), via its *British Open Banking Initiative*, have already moved considerable distances toward open banking, open finance, and embedded finance.²⁸

Keys to Success

The success of open banking, open finance, and embedded finance rests on three central pillars:

1. The development of APIs that enable computers to communicate with each other,
2. Rock-solid authentication procedures, and
3. Competent service providers.

Customer consent is needed for third-party providers to access customers' financial information. For that, trusted and secure APIs will be required.²⁹ Success will also require strong security and fraud prevention systems. "Strong Customer Authentication" (SCA) has become a common term, denoting the need for reliable ways to ensure that access to data, information, and funds is restricted to authorized customers and no one else. An often-used security method is two-factor authentication (2FA), which requires customers to identify themselves with their usernames and passwords and a second layer of identification related to one or more of the following:

- Knowledge of a personal secret, such as mother's maiden name or pin,
- Verification via something owned, such as a smartphone, or
- Physical proof, such as a fingerprint or retinal scan.

²⁸ The EU's *Payment Services Directive 2 (PSD2)* was passed by the European Banking Authority in 2018, and the UK enacted its SCA rules on March 14, 2022.

²⁹ Since 2016, the EU and UK have introduced open banking standards.

Finally, service and product providers will need proof that they can deliver on their service agreements and not threaten the broader financial community. Switzerland's financial sector is now among the most heavily regulated in the world, highlighting the need to find reliable and scalable means (private and public) to certify competence. Doing so will require proof of interconnectivity and confidentiality and an ability to embed APIs where desired (and nowhere else), ensuring that the new competitive paths and highways do not lead to anti-competitive concentration levels.

Risks

There are potential risks associated with open banking, open finance, and embedded finance. One of them relates to transition costs. How long will it take customers to become skilled buyers, and what might be the possible costs? Other concerns center on the potential for large suppliers to dominate the market via unequal access to information, acquisitions, and price discrimination. Misuse of data, increasing financial crimes, unauthorized access to confidential information, and sharing inaccurate information are also significant concerns.³⁰

Digital Money

Digital currencies could be a financial game-changer because they have the potential to offer secure, instant, cross-border, multi-currency payments that can be programmed by smart contracts to execute transactions without human intervention. In 2022, there were more than 18,000 different digital currencies,³¹ with the most familiar ones being Bitcoin (BTC), Ripple (XRP), Ethereum (ETH), Tether (USD), and Binance Coin (BNB).

Due to their growing use, Swiss banks need flexible strategies to meet digital currencies' ever-changing competitive challenges. They must understand if and how this new competitive arena will encourage more intense government and central bank involvement. Paramount will be establishing

³⁰ For more information on these issues, see August Benz, Thomas Rühl, Richard Hess, Andrea Luca Aerni, Daniel Kobler, and Johannes Schlotmann, Perspectives on the Future of Swiss Banking, Swiss Bankers Association, Swiss Banking, June 2021, https://www.swissbanking.ch/_Resources/Persis tent/9/d/b/e/9dbe91218153293fa5bd8ea3301745101159259e/SBA_Accenture_Perspectives%20on%20the%20Future%20of%20Swiss%20Banking_EN_kurz.pdf (Accessed on August 23, 2022).

³¹ Adam Hayes, Investopedia, 10 Important Cryptocurrencies Other Than Bitcoin, March 14, 2022, <https://www.investopedia.com/tech/most-important-cryptocurrencies-other-than-bitcoin/#:-:text=One%20reason%20for%20this%20is,communities%20of%20backers%20and%20investors> (Accessed on August 23, 2022).

customer trust and being an active part of a cultural change that will accompany the transition from using fiat currencies and financial intermediaries, as we have known them, into their digital counterparts.

Crypto-Banking

Switzerland's financial institutions are confronted with questions about if or how they should be involved in crypto-banking. They realize that diving in too quickly could victimize them with unforeseen risks, but holding back and waiting could open a gap that will be difficult to close in the future. First and foremost, banks must prioritize their ability to transact efficient payments because payments are their main interaction points with customers. If digital currencies break or weaken that link, the future could differ significantly from the past. Digital currencies can securely, efficiently, and cost-effectively transfer funds within and between nations and currency areas. To compete, banks might offer their own digital currency services or introduce financial payment amenities with attributes not provided by digital currencies (e.g., simplifying transactions).

Cryptocurrencies

With cryptocurrencies, payment counterparties can circumvent financial intermediaries. Therefore, their proliferation poses an existential challenge to Swiss financial institutions. Currently, the Swiss National Bank (SNB) perceives *unbacked* cryptocurrencies, such as bitcoin and ether, as minor threats to Switzerland's financial system and monetary policies because they are not used widely as units of account or mediums of exchange, and price volatility makes them unreliable stores of value. Nevertheless, as a sign of the times, beginning in February 2021, the Canton Zug, in collaboration with Bitcoin Suisse, began accepting cryptocurrency payments in bitcoin or ether for tax payments.³²

Stablecoins are pegged to official currencies, such as the US dollar or euro. Therefore, they are tied to the monetary policies of the respective currencies' central banks. Because a stablecoin is not a claim against any central bank,

³² Bitcoin Suisse, Canton Zug to Accept Cryptocurrencies for Tax Payment Beginning in 2021, September 3, 2020, <https://www.bitcoinsuisse.com/news/canton-zug-accept-cryptocurrencies-for-tax-payment-in-2021> (Accessed on August 23, 2022).

its credibility is connected directly to the trustworthiness of the issuer.³³ A large part of the SNB's uneasiness is focused on stablecoins that are tied to one-or-more foreign currencies because large currency inflows and outflows could affect the Swiss franc's international value and pressure the central bank into undesired foreign-exchange-market interventions. Stablecoins linked to the Swiss franc are not perceived as threatening because the SNB has significant control over domestic monetary policies, which can be used to influence unwanted changes in interest, wage, and inflation rates. Nevertheless, as more global transactions are conducted peer-to-peer with cryptocurrencies rather than with fiat currencies using traditional financial intermediaries, Swiss financial institutions and regulators will need to develop strategies that will allow them to coexist with or directly compete against them.

Central Bank Digital Currencies

The SNB has studied the potential costs and benefits of novel cashless payment systems for years. Along with its independent efforts, the SNB has cooperated with the Bank for International Settlements (BIS) Innovation Hub,³⁴ private banks (e.g., Citibank, Credit Suisse, Goldman Sachs, Hypothekarbank Lenzburg, Natixis, and UBS), central banks (e.g., Banque de France), law firms, and technology companies (e.g., Accenture and R3).³⁵

One of the SNB's roles is to remain attentive to financial innovations that could improve monetary policy effectiveness and payment safety and efficiency.³⁶ Therefore, central bank digital currencies (CBDCs) have come into the cross-hairs of the SNB's interest. In Chapter 7: *Swiss National Bank & Swiss Franc's Role in Global Financial Markets*, the section entitled "A Central Bank Digital Currency for Switzerland?" discusses the potential risks and benefits of CBDCs. It covers the similarities and differences between retail CBDCs (r-CBDCs) and wholesale CBDCs (w-CBDCs), account-based and value-based CBDCs, and interest-earning and non-interest-earning CBDCs. In brief:

³³ A Stablecoin's credibility depends on its transparent asset backing and high liquidity level, implying a reliable, instantaneous, and unconditional conversion commitment.

³⁴ Bank for International Settlements, Project Helvetia: Settling Tokenised Assets in Central Bank Money, December 2020, <https://www.bis.org/publ/othp35.pdf> (Accessed on August 23, 2022).

³⁵ See Chapter 7's discussion of Project Helvetia (Phases I and II) and Project Jura (Phases I and II).

³⁶ Bordo, Michael D. and Andrew T. Levin (2017). "Central Bank Digital Currency and the Future of Monetary Policy," NBER Working Paper No. 23711, August 2017, <https://www.nber.org/papers/w23711> (Accessed on August 23, 2022).

- A retail CBDC (r-CBDC) allows access to the general public, which would permit individuals, households, and businesses to have checking accounts directly at the SNB;
- A wholesale CBDC (w-CBDC) restricts access to approved participants, such as banks and financial institutions that conduct large volume transactions, such as security trading, settlement, and management.³⁷
- An *account-based* CBDC allows individuals, businesses, and financial institutions to have deposit accounts directly at the central bank or indirectly, via digital central bank accounts, at commercial banks. Because these deposits would be connected directly to the depositor, the owner of account-based CBDCs would be known (i.e., they would not be anonymous or pseudonymous).
- A *value-based* CBDC allows users to transact directly, without the need for the central bank or any other financial intermediary. Rather than debiting and crediting users' accounts, digital tokens³⁸ (i.e., value-based CBDCs) would be transferred directly using devices, such as smartphones, computers, and tablets, to access e-wallets on a blockchain or other platform. In contrast to an account-based CBDC, a value-based CBDC could be designed to provide depositor anonymity or pseudonymity.

In March 2018, the Wermuth Postulate was submitted to Switzerland's National Council, seeking a report on the advantages and disadvantages of a Swiss-franc-denominated r-CBDC. A report was published in December 2019.³⁹ In January 2020, the SNB joined with the Bank of Canada, Bank of England, Bank of Japan, European Central Bank (ECB), Sveriges Riksbank (Bank of Sweden), and BIS Innovation Hub to study r-CBDCs' advantages, disadvantages, and risks.⁴⁰ The group's goal was to assess r-CBDCs' uses

³⁷ The Federal Council, Central Bank Digital Currency: Federal Council Report in Response to the Postulate 18.3159, Wermuth, of 14.06.2018, December 13, 2019, <https://www.admin.ch/gov/en/start/documentation/media-releases.msg-id-77527.html> (Accessed on August 23, 2022). Also, see David Andolfatto, "Assessing the Impact of Central Bank Digital Currency on Private Banks," Federal Reserve Bank of St. Louis, October 7, 2018, https://www.snb.ch/n/mmr/reference/sem_2019_05_31_andolfatto/source/sem_2019_05_31_andolfatto.n.pdf (Accessed on August 23, 2022).

³⁸ A digital token uses a cryptographic algorithm to convert recognizable information, such as an asset's value and its owner's identity, into random strings of numbers and letters. Doing so eliminates (or severely complicates) the ability to trace a holder's identity and account balance simply by looking at the encryption (e.g., think of your ability to identify someone's name and address by looking only at their telephone number).

³⁹ The Federal Council, Central bank digital currency—Federal Council Report in Response to the Postulate 18.3159, Wermuth, of 14.06.2018 (admin.ch), *ibid.*

⁴⁰ Swiss National Bank. "Central Bank Group to Assess Potential Cases for Central Bank Digital Currencies," January 21, 2020, https://www.snb.ch/en/mmr/reference/pre_20200121/source/pre_20200121.en.pdf (Accessed on August 23, 2022).

in terms of “economic, functional and technical design choices, including cross-border interoperability; and the sharing of knowledge on emerging technologies.”⁴¹ Its ground rules were simple:

- “Do no harm to the existing level of monetary and financial stability;”
- “Coexist with cash and other types of money in a flexible and innovative payment ecosystem,” and
- “Promote broader innovation and efficiency.”⁴²

Given the range of alternatives, the SNB concluded that an r-CBDC would pose the greatest threat to Swiss financial institutions because it would put the SNB in direct competition with them. Proponents believe that r-CBDCs hold the potential to make Switzerland’s payment and security-settlement system more efficient and safer by eliminating liquidity risks and counterparty default risks. Using a DLT platform, r-CBDCs could:

1. Create an immutable and transparent shared ledger of asset information, transactions, and ownership;
2. Enable operations 24 hours a day, seven days a week, and
3. Provide platforms for smart (i.e., self-executing) financial contracts.⁴³

An r-CBDC could offer Swiss-based and foreign-based users of Swiss francs access to broader and deeper markets with greater interoperability. If successful, an account-based CBDC could be more stable and resistant than Switzerland’s fiat-based system. It could also encourage wider involvement by serving more distant domestic and international markets and tapping into more diverse individuals and groups.

At issue is if the potential risk-adjusted benefits of CBDCs exceed risk-adjusted costs. Among the potential costs are:

1. Increased financial market and settlement complexity,
2. Legal, governance, and control obstacles, and
3. Interoperability problems—especially at the international level.

⁴¹ Ibid.

⁴² Bank for International Settlements, Central Bank Digital Currencies: Foundational Principles and Core Features, Executive Paper, p. 2, March 2018, https://www.bis.org/publ/othp33_summary.pdf (Accessed on August 23, 2022).

⁴³ A “smart contract” is also called a “self-executing contract” because agreement terms are computer-coded and carried out automatically (i.e., without the need for third-party enforcement or confirmation). The agreement terms and code reside on a decentralized ledger, including rules to which the smart-contract parties agree. Once the rules are met, the contract is automatically executed.

SNB studies have shown that a Swiss franc-denominated r-CBDC “would bring no additional benefits for Switzerland. Instead, it would give rise to new risks, especially concerning financial stability.”⁴⁴ More specifically, the SNB’s position is that an r-CBDC would not:

1. Make the Swiss financial system more efficient,
2. Result in more effective monetary policies,
3. Provide Switzerland’s financial system with greater stability, or
4. Reduce the financial crime rate (e.g., money laundering, tax evasion, and terrorist financing).

In contrast to r-CBDCs, the SNB has a more positive view of w-CBDCs. A w-CBDC would remove the SNB as a direct competitor with Swiss financial intermediaries, reducing some of the threats they might face.

Gaining Access to International Markets

After the 2008–2009 financial crisis, Swiss regulators sought to increase the nation’s exports of financial products and services and strengthen its competitiveness as a global financial center. One way of doing so was by homogenizing and updating the rules for comparable financial product offerings and providing greater customer protections. For these reasons, the Swiss Federal Parliament passed, on June 15, 2018, the *Financial Services Act (FinSA)*⁴⁵ and *Financial Institutions Act (FinIA)*,⁴⁶ both of which were enacted by the Federal Council on November 6, 2019, and came into force, together with the implementation provisions, on January 1, 2020. A two-year transition period was given for full employment.⁴⁷

For years, Switzerland has tried to secure, expand, and institutionalize its bilateral relationships with the EU and the UK. Since the 2016 Brexit referendum, its negotiations have become more complicated because Switzerland must deal with the UK independently from the EU.

⁴⁴ The Federal Council, Federal Council Publishes Report on Central Bank Digital Currency, *ibid.*

⁴⁵ The Federal Council, Federal Act on Financial Services (Financial Services Act, FinSA), June 15, 2018, <https://www.fedlex.admin.ch/eli/cc/2019/758/en> (Accessed on August 23, 2022).

⁴⁶ The Federal Council, Federal Act on Financial Institutions (Financial Institutions Act, FinIA), June 15, 2018, <https://www.fedlex.admin.ch/eli/cc/2018/801/en> (Accessed on August 23, 2022).

⁴⁷ *FinSA* and *FinIA* were based on Europe’s *MiFID II* rules, which were instituted in 2018 to standardize financial regulations and create a “level playing field” among competitors offering stocks, fixed-income securities, derivatives, currencies, and other financial assets. *MiFID II* regulates almost all aspects (i.e., exchange, off-exchange, and OTC-related) of the EU’s financial services industry.

Cooperating with Foreign Countries and International Organizations

To continue as an international financial hub, Switzerland will need to adjust its financial rules, regulations, and standards to those of foreign nations, economic unions, and supra-national organizations, such as the Financial Stability Board (FSB)⁴⁸ and BIS.

Switzerland—UK Negotiations

On June 30, 2020, Switzerland and the UK signed the *Joint Statement between the Federal Department of Finance and Her Majesty's Treasury on Deepening Cooperation in Financial Services*. Its goal was to liberalize and expand market access for both nations in the financial services area.⁴⁹ In February 2021, the UK recognized the equivalence of Switzerland's stock exchange regulations.⁵⁰ Clearly, Brexit has made Switzerland more cognizant of the value in having an agreement focusing on the institutional framework, but it has also strengthened the opinions of opponents, who see the Brexit strategy as a paradigm for Switzerland.

Switzerland—EU Negotiations

The *Markets in Financial Instruments Directive II (MiFID II)* and the *Markets in Financial Instruments (MiFIR)* entered into force on January 3, 2018. They were significant steps toward unifying the EU's capital markets and protecting investors' rights. Access to EU financial markets requires the rules and regulations of non-EU nations to be equivalent to EU standards, which

⁴⁸ See Financial Stability Board, Key Attributes of Effective Resolution Regimes for Financial Institutions, October 15, 2014, <https://www.fsb.org/work-of-the-fsb/market-and-institutional-resilience/post-2008-financial-crisis-reforms/effective-resolution-regimes-and-policies/key-attributes-of-effective-resolution-regimes-for-financial-institutions/> (Accessed on August 24, 2022). Also, see Financial Stability Board, Guidance on Arrangements to Support Operational Continuity in Resolution, August 18, 2016, <https://www.fsb.org/wp-content/uploads/Guidance-on-Arrangements-to-Support-Operational-Continuity-in-Resolution1.pdf> (Accessed on August 24, 2022).

⁴⁹ Swiss Bankers Association, Swiss Banking, Banking Barometer 2021, 2021, <https://publications.swissbanking.ch/economic-trends-in-the-swiss-banking-industry/banking-barometer-2021/> (Accessed on August 24, 2022).

⁵⁰ In 2019, the EU revoked Switzerland's stock market equivalence. Federal Department of Foreign Affairs, No Signing of Swiss-EU Institutional Agreement, May 26, 2021, <https://www.eda.admin.ch/eda/en/dfa/fdfa/aktuell/newsuebersicht/2021/05/institutionelles-abkommen-kein-abschluss.html> (Accessed on August 24, 2022).

is why Switzerland's *FinMIA* and *FinSA* are so closely paralleled *MiFID II* and *MiFIR*.

One area where equivalence has been (and will continue to be) important is protecting bank customer data. In September 2020, Switzerland's National Council and Council of States passed a revised version of the 1992 *Federal Act on Data Protection (FADP)*. The revision made Switzerland consistent with the Council of Europe's *Convention 108 on the Protection of Individuals with Regard to Automatic Processing on Personal Data*⁵¹ and with the EU's *General Data Protection Regulation*.⁵² This *Act* and its related ordinance (as yet unissued) are expected to come into force on September 1, 2023.

On May 26, 2021, Switzerland ended its bilateral discussions with the EU on the *Institutional Framework Agreement (InstA)* when the Swiss government refused to sign and withdrew from negotiations. *InstA* was intended to safeguard, strengthen, and expand Switzerland's existing bilateral access agreements with the EU. There was hope it would streamline, consolidate, and reduce complicated inefficiencies that came with the need to update multiple bilateral agreements periodically. After Swiss voters rejected membership in the European Economic Area (EEA) in 1992, the two sides negotiated more than 120 bilateral market-access agreements covering many trade and cooperation issues. *InstA* would have put these bilateral relationships on a more institutional basis, which was particularly important to Switzerland's cross-border wealth management services. The SBA reported that the nation's banks "manage assets totaling around CHF 1,000 billion belonging to clients from the EU, generating tax income of approximately CHF 1.5 billion per year and employing almost 20,000 people (FTE) in Switzerland."⁵³

An agreement could not be reached on three significant issues:

1. Acceptance of the EU's *Citizens' Rights Directive (CRD)*,
2. Guaranteed protection of Switzerland's relatively high wages, and
3. The EU's state aid provisions, which ran afoul of Swiss cantonal laws.⁵⁴

⁵¹ Council of Europe, *Convention for the Protection of Individuals with Regard to Automatic Processing of Personal Data* (ETS No. 108): Details of Treaty No. 108, October 1, 1985, <https://www.coe.int/en/web/conventions/full-list?module=treaty-detail&treaty-num=108> (Accessed on August 24, 2022).

⁵² EUR-Lex, *Regulation (EU) 2018/679 of the European Parliament and of the Council (General Data Protection Regulation)*, April 27, 2016, EUR-Lex - 32016R0679 - EN - EUR-Lex (<https://eur-lex.europa.eu/eli/reg/2016/679/oj>) (Accessed on August 24, 2022).

⁵³ Swiss Bankers Association, *Swiss Banking, Banking Barometer 2021*, *ibid.*, p. 15.

⁵⁴ Federal Department of Foreign Affairs, *No Signing of Swiss-EU Institutional Agreement*, May 26, 2021, *ibid.*

Furthermore, *InstA* would have established a dispute settlement mechanism, requiring both parties to refer disagreements to an arbitration panel and to allow the European Court of Justice (ECJ) to settle all issues involving interpretations of EU law. Regarding the *CRD*, the agreement did not resolve Switzerland's concerns about the free movement of persons, in general, and their effects on Swiss social security costs, in particular.⁵⁵ These issues split Switzerland politically, with unions fearful of wage compression, conservative politicians concerned about the EU's powers, and businesses having reservations about the long-term economic effects. Opponents viewed *InstA*'s provisions as potential threats to Switzerland's national sovereignty and direct democracy. Acceptance also breached the nation's preference for settlement on a case-by-case basis (the status quo) and reinforced Swiss resistance to EU or EEA membership. Proponents viewed the agreement as a way to strengthen Switzerland's relations with its most important trade partner and encourage a future source of economic and financial growth.

InstA negotiations between Switzerland and the EU began in 2014, so stopping talks in 2021 was problematic. Assuming the EU was not posturing for advantages in future meetings, the agreement's failure terminated any new market access agreements between the EU and Switzerland, and it derailed revisions to existing agreements, such as new medical and machinery certifications, weaker electricity security, and reductions in Swiss researchers' access to Horizon Europe.⁵⁶

Complying with the Automatic (International) Exchange of Customer Information Rules

Chapter 4: *Swiss Bank (Customer) Secrecy & the International Exchange of Information* provides a detailed explanation of Switzerland's obligations to automatically exchange confidential bank customer information with the tax authorities of foreign nations. On January 1, 2017, Switzerland implemented the *Automatic Exchange of Information (AEOI)*, based on the OECD's

⁵⁵ Stefanie Walter, What Swiss Voters Expect to Happen Next, after EU Talks Fail, Bruegel, May 31, 2021, <https://www.bruegel.org/2021/05/what-swiss-voters-expect-to-happen-next-after-eu-talks-fail/> (Accessed on August 24, 2022). Stefanie Walter, Quo Vadis, Swiss-European Union Relations, June 7, 2021, <https://www.bruegel.org/2021/06/quo-vadis-swiss-european-union-relations/> (Accessed on August 24, 2022).

⁵⁶ Horizon Europe is a major EU funding program for research and innovation in climate change and sustainable development. The majority (70%) of its near EUR 100 billion budget focuses on small and medium-sized enterprises (SMEs).

Common Reporting Standards (CRS). The first actual exchange of information occurred in September 2018.⁵⁷ Switzerland's bank (customer) secrecy history is fascinating because an individual's right to confidentiality is firmly embedded in the nation's *Constitution (Article 28)*. This right is also strongly reinforced by *Article 28 of the Swiss Civil Code*,⁵⁸ the *FADP*,⁵⁹ and the *Swiss Criminal Code (SCC)*, which enables individuals to fight defamation, libel, slander, and the unauthorized recordings of private conversations and wiretapping. In 2020, *FADP* was revised to⁶⁰:

- Provide stronger sanctions for intentional violations, with fines up to CHF 250,000;
- Increase the powers of Switzerland's Federal Data Protection and Information Commissioner (FDPIC);
- Expand information obligations, such as the requirement to inform individuals each time their confidential information (not just particularly sensitive information) is released;
- Mandate a data protection impact assessment if its processing posed high risks to the personal rights of individuals;
- Regulate personal profiling;
- Expand the scope of protected information to genetic and biometric data;
- Mandate the creation of a data processing directory;
- Protect only the private data of natural persons and not legal entities, as was previously the case;
- Require companies to design data protection into the company systems from the early planning and design stages; and

⁵⁷ The *AEOI* was signed by Switzerland in October 2013 and ratified in 2016, and the actual exchange of information began on January 1, 2018. Its goal is to promote international cooperation in assessing and collecting taxes. In 2021, Switzerland had bilateral agreements with about 96 countries to automatically exchange bank customer information. SWI swissinfo.ch, Switzerland Exchanges Tax Data with 96 states, October 11, 2021, https://www.swissinfo.ch/eng/switzerland-exchanges-tax-data-with-96-states/47018334?utm_campaign=teaser-in-querylist&utm_content=o&utm_source=swissinfoch&utm_medium=display (Accessed on August 24, 2022).

⁵⁸ The Federal Council, Swiss Civil Code, December 10, 1907 (Status as of January 1, 2021), https://fedlex.data.admin.ch/filestore/fedlex.data.admin.ch/eli/cc/24/233_245_233/20210101/en/pdf-a/fedlex-data-admin-ch-eli-cc-24-233_245_233-20210101-en-pdf-a.pdf (Accessed on August 24, 2022).

⁵⁹ The Federal Council, Federal Act on Data Protection (FADP), June 19, 1992 (Status as of March 1, 2019), https://www.fedlex.admin.ch/eli/cc/1993/1945_1945_1945/en (Accessed on August 24, 2022). The FADP was revised on September 25, 2020, and is expected to come into force by 2023.

⁶⁰ Marc Minar, What Changes with the Revision of the Swiss Federal Act on Data Protection?, December 6, 2021, https://www.ey.com/en_ch/cybersecurity/marc-what-changes-with-the-revision-of-the-swiss-federal-act-on-data-protection (Accessed on August 24, 2022).

- Require rapid reports to the FDPIC on any high-risk security breaches, regardless of whether they are accidental or illegal or involve the destruction, deletion, or alteration of confidential information.

Bank customers' right to privacy became a Swiss federal law in 1934 when the *BA* made unauthorized information disclosures punishable by imprisonment or fine. Before that, Switzerland's *Constitution*, cantonal laws (civil, commercial, and criminal), and internal bank procedures were the primary sources of protection. Further protection was offered in sensitive industries, such as health care, pharmaceuticals, energy, telecommunications, and finance. Exceptions to these confidentiality rules evolved to deter or prevent illegal financial behavior, such as tax fraud, tax evasion, criminal mismanagement, insider trading, financing terrorism, unlawful association, money laundering, bribery, corruption, and market or price manipulation.⁶¹

The international exchange of information has moved Switzerland from bilateral double taxation treaties to multilateral agreements that provide for automatic exchanges of bank customer information. Today, Swiss banks adhere to the SBA's "know-your-customer rules"⁶² to prevent financial crime. In March 2021, the nation enacted anti-money-laundering legislation.

Swiss financial institutions must sort, report, monitor, evaluate, retain, and audit the identities of foreign contractual parties, controlling persons, and beneficial owners. They must also report individuals' addresses, countries of residence, tax identification numbers, reporting institutions, account balances, and capital income. Doing so has prompted these financial institutions to build sophisticated and costly back-office infrastructures. Banks have been required to develop criteria for recording, limiting, and supervising the legal and reputational risks related to money laundering and terrorist financing. Furthermore, they must report customers perceived to be associated with a crime or qualified tax offense and identify risk categories for

⁶¹ Thomas Steiner, Switzerland—Data Protection Overview, OneTrust DataGuidance, July 2021, <https://www.dataguidance.com/notes/switzerland-data-protection-overview#:~:text=Swiss%20ata%20protection%20law%20is,and%20in%20a%20person's%20home>. (Accessed on August 24, 2022). An accompanying ordinance, expected to come into force in 2022, provides detailed implementation guidance and explains the FADP's terms more thoroughly, such as notification requisites and access rights. See The Federal Council, Ordinance to the Federal Act on Data Protection (DPO), June 14, 1993, https://www.fedlex.admin.ch/eli/cc/1993/1962_1962_1962/en (Accessed on August 24, 2022). Also, see Heike Gross, New Data Protection Act: What Do Swiss Companies Need to be Aware of?, AXA, March 4, 2022, <https://www.axa.ch/en/unternehmenskunden/blog/security-and-legal/law-and-justice/new-data-protection-act.html> (Accessed on August 24, 2022).

⁶² Swiss Bankers Association, Swiss Banking, 2020: Agreement on the Swiss Banks' Code of Conduct in Regard to the Exercise of Due Diligence (CDB 20), 2020, https://www.swissbanking.ch/_Resources/Persistent/6/2/e/e/62ecc3df0685e359c5a376dfca79dec8b908ea9c/SBA_Agreement_CDB_2020_EN.pdf (Accessed on August 24, 2022).

money laundering, focusing particular attention on high-risk groups, such as customers from corruption-prone or politically unstable countries.

Even though time and experience have given banks a better understanding of their responsibilities, confusion has put them in precarious, uncertain, and sometimes conflicting positions. For example, when is the disclosure of customer information “illegal?” When are bank employees “entitled” to report it? When is it a “duty” for them to report? When do bank employees have *reasonable grounds* to report customer activities? The *BA* made it a crime for bank employees to divulge confidential bank customer information, but the *AMLA* made it a “duty” for employees to report their suspicions of money laundering when there were “reasonable grounds” to suspect that a customer’s assets were related to criminal or terrorist activities. The *SCC* “entitled” bank employees to report suspicious activities as long as they were “serious” and based on “observations” that the assets originated from a felony or an aggravated tax misdemeanor in terms of *Article 305^{bis}* in the *SCC*.⁶³

Engaging in Sustainable Finance

Environmental, social, and governance (ESG) issues (also called sustainability issues) have become prominent in the financial industry since the mid-2010s due to their potential opportunities and risks. Social concerns about climate change, social inequality, and corporate misconduct have led investors, regulators, and rating agencies to look seriously at ways to redirect financial capital flows toward environmentally friendly and sustainable investments.⁶⁴ The *Paris Climate Protection Agreement*, *United Nations’ 2030 Agenda for Sustainable Development*, and *EU Sustainable Finance Action Plan* are just three examples of global actions to direct capital flows toward sustainable investments. International organizations, such as the BIS, ECB, and European Banking Authority, have supported this effort with insightful analyses.

The possibility that ESG might transform global finance has led politicians, central bankers, and financial regulators to consider how best to deal with these issues. Financial institutions worldwide are developing strategies to identify risks and price them into an increasingly uncertain future. Because ESG problems, such as climate change, are medium-to-long-term challenges,

⁶³ Switzerland’s *AMLA* (March 2021) helped clarify the meaning of “reasonable grounds to suspect” money laundering and the responsibility of financial intermediaries to report their “suspicions” or “observations.”

⁶⁴ KPMG, *ESG Risks in Banks: Effective Strategies to Use Opportunities and Mitigate Risks*, 2021, <https://assets.kpmg/content/dam/kpmg/xx/pdf/2021/05/esg-risks-in-banks.pdf> (Accessed on August 24, 2022).

financial institutions' planning must be the same, weaving ESG into their risk-management strategies, business and scenario plans, and internal control systems. The changes brought on by ESG could affect financial institutions' entire stakeholder value chains, including customers, suppliers, outsourced vendors, and employees. Potential reputational damage, customer defaults, asset impairment, disclosure considerations, external reporting requirements, and compliance costs are all in the mix of concerns. ESG considerations could become a standard part of loan due diligence and follow-up for banks. Similarly, the possibility that many companies in the same industry might fail at once will provide a new dimension to financial institutions' concentration, exposure, and stress-testing analyses.

Despite the enthusiasm surrounding ESG, critics argue that⁶⁵:

- There is no firm evidence that ESG efforts have had a significant positive impact relative to what would have happened in their absence; in short, ESG is just a “marketing ploy”;
- Data on ESG investments are unregulated and therefore unreliable and incomplete (e.g., companies raising their ratings by outsourcing ESG-unfriendly activities or selling them to a different owner, who behaves the same);
- The lack of transparency and control allows green investment funds to be siphoned into other areas;
- Unclear standards and inconsistent methodologies make company ratings subjective and capricious;
- Much of the ESG enthusiasm comes from fund managers and investment companies that earn relatively high fees from them; and
- ESG problems require long-term solutions but investors in need of short-term profits have much shorter time horizons.

Ultimately, ESG efforts will be successful only if they bring new capital to companies that offer environmentally friendly, sustainable, and governance-enhancing solutions. For socially conscious investors, this will require more accurate ESG disclosures to identify companies that are leaders and laggards. Significant progress might also come from unbundling “E” from “S” from “G” because solutions to problems such as climate change, pollution, waste,

⁶⁵ Silvia Amaro, Blackrock's Former Sustainable Investing Chief Now Thinks ESG IS a 'Dangerous Placebo,' August 25, 2021,

natural resource scarcity, income inequality, the distribution of voting rights, information disclosures, accounting accuracy and transparency, gender diversity and equity, employee grievance policies, and regulatory compliance are so meaningfully different. Separation would enable investors to identify, for example, companies making progress on “E” but not so much on “S” and “G.”⁶⁶

Switzerland and ESG

Since 2018, the SBA has made “sustainable finance” one of its strategic priorities, with the hope that the nation’s political, financial, and social systems will work together to make Switzerland an international hub for this rapidly rising financial sector.⁶⁷ Swiss banks are integrating ESG guidelines into their business strategies, operations, and lending practices, as the world turns its attention toward sustainability funds, green bonds, impact investments, active shareholder engagement, micro-finance, sustainability bonds, and transition bonds.⁶⁸ Swiss regulators have also taken notice. For example, the FINMA requires financial institutions to identify, describe, and assess climate-related financial risks and the managerial and strategic measures to deal with them. Switzerland’s disclosure requirements conform increasingly to internationally accepted recommendations of the *G20—FSB Task Force on Climate-Related Financial Disclosures (TCFD)*.

ESG guidelines and practices are not new to Switzerland. The nation has been issuing sustainable financial instruments since the 1980s. Its first sustainable investment management company was established during the 1990s.⁶⁹ Since then, Switzerland has become a global leader in creating and marketing sustainable financial instruments.⁷⁰ The nation supports the

⁶⁶ Anonymous, ESG Should be Boiled Down to One Simple Measure: Emissions—Three Letters That Won’t Save the Planet, *The Economist Magazine*, <https://www.economist.com/leaders/2022/07/21/esg-should-be-boiled-down-to-one-simple-measure-emissions> (Accessed on August 24, 2022).

⁶⁷ Swiss Bankers Association, Swiss Banking, Sustainable Finance in Switzerland: From Pioneer to a Premier International Hub, June 2020, https://www.swissbanking.ch/_Resources/Persistent/3/3/e/7/33e7c9a474c72717e1cd19bc547b6f048a020b56/SBA_SustainableFinance_2020_EN.pdf (Accessed on August 24, 2022).

⁶⁸ Green and sustainability bonds are issued to finance projects with specific environmental and sustainability goals. Since 2014, the Swiss stock exchange has traded them.

⁶⁹ Swiss Bankers Association, Swiss Banking, The Importance of Sustainability and Areas for Action, Undated, <https://www.swissbanking.ch/en/topics/sustainable-finance/sustainable-finance> (Accessed on August 24, 2022).

⁷⁰ Ibid.

implementation of the *United Nations' 2030 Agenda for Sustainable Development*⁷¹ and the *UN Framework Convention on Climate Change (Paris Agreement)*.⁷² Switzerland also works and coordinates with national and international organizations and agreements, such as the G20-FSB's *TCFD*, *Federal Office for the Environment (FOEN)*, *Paris Agreement Capital Transition Assessment (PACTA)*, *United Nations Environment Programme—Finance Initiative (UNEPFI)*, and *Net-Zero Banking Alliance*.

Swiss banks are in the process of aligning their investments with ESG guidelines, such as those stated in the *UN Principles for Responsible Banking (PRB)*⁷³ and the *UN Principles for Responsible Investment (PRI)*⁷⁴. They are also disclosing sustainability information consistent with international standards, such as the *Global Reporting Initiative (GRI)*. In April 2019, the SNB and the FINMA joined the *Network for Greening the Financial System (NGFS)*,⁷⁵ a voluntary, consensus-based group of central banks and regulators that makes sustainability recommendations and shares best practices. Its goal is to encourage and attain ESG targets, which were created at the Paris “One Planet Summit” in December 2017.⁷⁶

“Sustainable finance” is a term with many facets. Among the most important for Switzerland are:

1. Consulting and asset management for private wealth management clients;
2. Providing ESG loans that use Swiss capital markets to fund sustainable projects; and
3. Looking internally to see what might be done to promote clean energy and nature-conservation projects, reduce greenhouse emissions, and invest in resource-efficient infrastructures.

The common denominator of these facets is their beneficial impact on the nation's environment.

⁷¹ United Nations, *Transforming Our World: The 2030 Agenda for Sustainable Development*, Undated, <https://sdgs.un.org/2030agenda> (Accessed on August 24, 2022).

⁷² United National Framework Convention on Climate Change: Adoption of the Paris Agreement, December 11, 2015, <https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf> (Accessed on August 24, 2022).

⁷³ 30 global banks, with the support of UNEPFI, developed the PRB. Its principles align closely with the comprehensive framework based on the *Sustainable Development Goals (SDGs)* and the *Paris Agreement on Climate Change*, which try to infuse ESG into all parts of the banking business.

⁷⁴ United Nations, PRI Principles for Responsible Investment, <https://www.unpri.org/> (Accessed on August 24, 2022).

⁷⁵ FINMA, FINMA Joins the NGFS, April 17, 2019, <https://www.finma.ch/en/news/2019/04/20190417-mm-beitritt-ngfs/> (Accessed on August 24, 2022).

⁷⁶ NGFS, Origin and Purpose, Undated, <https://www.ngfs.net/en> (Accessed on August 24, 2022).

Consulting for Private Wealth Management Clients

Switzerland's most significant potential for making a positive global impact in the ESG area appears to be through its wealth management consulting and advising services. The idea is that investors will evaluate firms based on a broader range of factors—not just commercial performance but also their environmental, social, and governance records, which is why rating indices may become more critical. Swiss wealth management services are enormous relative to its international lending and capital market activities. The nation manages about 27% of global cross-border private wealth, putting it first among all competitor nations.⁷⁷ In 2020, 18.3% of the funds managed by Swiss funds were placed in sustainable investments, with Swiss pension funds and insurance companies investing as much as 31%.⁷⁸ Switzerland's wealth managers administered CHF 716 billion worth of sustainable investments,⁷⁹ and those investments inside Switzerland accounted for 21% of all the assets managed, about double the global average of 11%.⁸⁰

As the global leader in wealth management, Switzerland provides specific and holistic advice to wealthy customers who invest globally. Even though these consultants do not make final decisions on the investments chosen, they have an essential role in steering the content and direction of discussions that make them. The SBA has published guidelines for wealth managers, explaining ways to identify customers' ESG preferences (if any), introduce and discuss ESG investing, and explain why sustainable finance should be highly prioritized.⁸¹ The SBA realizes that changing the investment culture will take time but believes it is worth the effort to become a global hub in the sustainable investment area.

⁷⁷ Swiss Bankers Association, *Swiss Banking, Sustainable Finance in Switzerland: From Pioneer to a Premier International Hub: Basic Position and Effective Approaches*, June 2020, p. 8, https://www.swissbanking.ch/_Resources/Persistent/3/3/e/7/33e7c9a474c72717e1cd19bc547b6f048a020b56/SBA_SustainableFinance_2020_EN.pdf (Accessed on August 24, 2022).

⁷⁸ *Ibid.*, p. 8.

⁷⁹ *Ibid.*, p. 8.

⁸⁰ *Ibid.*, p. 8.

⁸¹ Swiss Bankers Association, *Swiss Banking, Guideline for the Integration of ESG Considerations into the Advisory Process for Private Clients*. June 2020, https://www.swissbanking.ch/_Resources/Persistent/5/9/3/b/593b75d1d479ddc70fff20a76991deffd9ca4bab/SBA_Guidelines_for_the_integration_of_ESG_considerations_into_the_advisory_process_for_private_clients_EN.pdf (Accessed on August 24, 2022).

Taking a Look Internally

Like any country, Switzerland has a vested interest in promoting sustainable investments. Nevertheless, in a referendum held on June 13, 2021, voters rejected an amendment to the *Federal Act on the Reduction of Greenhouse Gas (CO₂ Act)*, which would have reduced greenhouse emissions in line with the nation's commitments under the *Paris Climate Agreement*.⁸² Passage of this act might have encouraged climate-friendly behavior, and the proposed carbon tax would have discouraged energy use.

Using a global study by the Boston Consulting Group and Global Financial Markets Association (GFMA) as a basis for its analysis,⁸³ the SBA identified ten Swiss sectors that were responsible, in 2019, for producing 87% of the nation's total emissions (i.e., 40.4 megatons, which is 40.4 million metric tons of carbon dioxide equivalent).⁸⁴ It explained how these sectors might reduce their greenhouse gas emissions, their costs, and possible sources of needed financing. Reducing greenhouse gas (GHG) emissions in these ten sectors is the goal of Switzerland's *2050 Net Zero Initiative*.

One potential problem Switzerland might encounter is how to finance ESG projects without sacrificing other priorities, such as mortgages and business facilities. By the SBA's estimates, domestic banks can finance 83% of its funding requirements, and an additional 8% could come from the Swiss capital markets. About 7% of these investments might be state-subsidized public goods, such as mass transportation.⁸⁵ Any remaining funding (less than 2%) might come from blended (i.e., public–private) partnerships. Switzerland's climate-control loans would be only about 11% of the amount lent each year for mortgages and business loans, and less than 2% of the annual Swiss franc bond issues.⁸⁶

Switzerland's *2050 Net Zero Initiative* should stimulate new business opportunities and plant potential challenges. The hope is that prospects will

⁸² Library of Congress, Switzerland: CO₂ Act Amendment Rejected by Voters, June 25, 2021, <https://www.loc.gov/item/global-legal-monitor/2021-06-25/switzerland-co2-act-amendment-rejected-by-voters/#:~:text=Article%20Switzerland%3A%20CO2%20Act%20Amendment,Voter%20turnout%20was%2059.68%25>. (Accessed on August 24, 2022).

⁸³ GFMA, GFMA and BCG Report on Climate Finance Markets and the Real Economy, December 2, 2020, <https://www.gfma.org/policies-resources/gfma-and-bcg-report-on-climate-finance-markets-and-the-real-economy/> (Accessed on August 24, 2022).

⁸⁴ Swiss Bankers Association and Boston Consulting Group, Swiss Banking, Sustainable Finance: Investment and Financing Needed for Switzerland to Reach Net-Zero by 2050, August 2021, https://www.swissbanking.ch/_Resources/Persistent/b/c/0/9/be0949b50b2ac8462b7459b9cd4708ffaa30da27/SBA_Sustainable_Finance_2021.pdf (Accessed on August 24, 2022).

⁸⁵ *Ibid.*, p. 9.

⁸⁶ *Ibid.*, p. 19.

spring from the depth and diversity of new loans. Still, landmines could materialize if ESG investment expertise is spread too thin over the wide range of businesses and regulations.

Rather than using bans, subsidies, or regulations, the SBA's preferred route to sustainability is via a carbon tax on all fossil fuels, which would incentivize the development of low-carbon technologies and investments. Due to their positive externalities, sustainable investing could warrant proactive government measures, such as preferential interest rates, reward programs, and loans for public infrastructure.

Sustainability Risks for Banks

Climate change could pose financial risks for Swiss banks if it threatens borrowers' abilities to repay their legacy loans. These business failures could also infect the broader financial system. To the extent that Swiss financial institutions are less indebted than other nations, they should be proportionately less affected by these risks. At the same time, their interconnectedness with highly indebted nations increases the need for prudent management of sustainability-related loans.

Keys to Success

In the end, Switzerland's success in the ESG area will require:

- Transparency, making the potential risks and returns of ESG financing and investing clear;
- Assurances that ESG services can meet global standards so they can be exported;
- Access to foreign capital markets;
- Political rules and regulations that are clear, simple, and conducive to market development;
- Investors embracing the idea that their real economic investments have an externality connected to the global economy; and
- Political assistance and pressure, such as the Swiss Federal Council's decision in August 2021, requiring climate reporting by large Swiss companies.

Changing Tax Rules to Make Switzerland Globally Competitive

Banks in Switzerland have made progress in their attempts to abolish the nation's stamp duty and reform its withholding tax.

Stamp Tax

Switzerland's Stamp Tax is imposed by the Swiss Confederation when securities (e.g., shares, bonds, funds, and structured products) and particular types of warrants are issued or traded. This tax has put Switzerland at a competitive disadvantage relative to its principal global competitors, but its abolition could eliminate a meaningful source of government revenues. At the same time, increased capital market activity could create new jobs, raise incomes, and boost tax revenues from other sources. Abolishing the stamp tax will become increasingly important if the OECD's efforts to tax digitalized economies succeed. The Swiss Council of States and National Council have supported the abolition of stamp duties on new issues, trades, and insurance premiums but only on a staggered basis and with no replacement. In summer 2021, Switzerland's Parliament decided to abolish this tax on new equity issues, but in a February 13, 2022 referendum, the Swiss population voted against its abolition.

Withholding Taxes

For years, Switzerland imposed a tax on the interest earned from Swiss-franc-denominated securities issued in Switzerland. This tax helped defuse criticism that Switzerland was a haven for tax-dodging foreigners, who could reclaim this tax only if their home countries allowed deductions for foreign-paid taxes. Enactment of the *AEOI* has removed one of the primary reasons (i.e., tax evasion) for imposing this tax.⁸⁷

Switzerland's withholding tax inhibited the nation's ability to compete in international equity markets, forcing Swiss banks to make Swiss-franc-denominated issues in foreign countries. This competitive disadvantage was especially evident relative to the UK, the EU, and the United States (US). Recent competition from Asian nations, such as Singapore and Hong Kong,

⁸⁷ Swiss Bankers Association, Swiss Banking, Abolition of Stamp Duty and Reform of Withholding Tax, Undated, <https://www.swissbanking.ch/en/topics/tax/abolition-of-stamp-duty-and-reform-of-withholding-tax> (Accessed on August 24, 2022).

has raised the stakes even more. In 2021, the SBA reported that “the total volume of bonds issued by Swiss companies is around CHF 500 billion, but three-quarters of this were issued in other countries with no withholding tax. Swiss companies do this to remain competitive.”⁸⁸

In April 2021, the Swiss Federal Council proposed withholding tax reform to the Swiss Parliament. If adopted, it would abolish the withholding tax on domestic interest payments without replacement, hopefully reviving the Swiss capital market by encouraging companies to move their financing activities to Switzerland and issue their fixed-income securities on the Swiss market. The proposed change removed the withholding tax on bonds and individuals outside Switzerland but retained it on interest paid on private individuals’ bank accounts in Switzerland.

Global Minimum Tax

The movement toward a global minimum tax (GMT) for businesses has been the result of four significant forces:

1. Global digitalization;
2. Tax-rate competition among inefficient governments trying to entice multinational companies to relocate;
3. Difficulties identifying the nexus between tax authorities and taxpayers, and
4. Disagreements over whether services should be taxed where they are produced or consumed.

In 2013, the OECD and G20 proposed a framework addressing these four influences with hopes of an agreement on a minimum tax rate for multinational companies. Their efforts resulted in a two-pillar solution.⁸⁹ Pillar I (explained below) was adopted by OECD members on November 24, 2016, and came into force in July 2018. Pillar II came into law in 2022. On January 12, 2022, the Swiss Federal Council agreed to the basic tenants of the *Base Erosion and Profit Shifting Project (BEPS)*, joining more than 97% of the OECD/G20’s other members.

⁸⁸ Swiss Bankers Association, Swiss Banking, Annual Report 2020/2021 Swiss Bankers Association, August 2021, p. 11, https://www.swissbanking.ch/_Resources/Persistent/8/4/9/9/84990552bbe07716e5057e35a6533f19838b9494/SBA_Annual%20Report2021_EN.pdf (Accessed on August 24, 2022).

⁸⁹ OECD/G20, Statement on a Two-Pillar Solution to Address the Tax Challenges Arising from the Digitalisation of the Economy, October 8, 2021, <https://www.oecd.org/tax/beps/statement-on-a-two-pillar-solution-to-address-the-tax-challenges-arising-from-the-digitalisation-of-the-economy-october-2021.pdf> (Accessed on August 24, 2022).

To implement the GMT, Switzerland must successfully introduce a constitutional amendment approved by a popular referendum. The referendum is scheduled for June 2023. After that, a temporary ordinance on these rules would begin on January 1, 2024, giving the GMT a legal basis and allowing it to follow Switzerland's normal legislative process. Under the Swiss rules, cantons would be given independent authority to decide how their taxes might differ.⁹⁰

Pillar I of the OECD's "Two-Pillar Solution" reallocated taxing rights, instituted a new profit allocation method, and implemented nexus (i.e., connection) rules for market jurisdictions, which determine the rights of jurisdiction to a tax allocation. Pillar II proposed a minimum tax rate of 15% but only on multinational companies with gross revenues (i.e., turnover) exceeding EUR 750 million.⁹¹ If a member country decided on a tax rate below the minimum, other countries would be permitted to tax the under-taxed income. Switzerland's Federal Council proposed the minimum tax rate only for companies within the scope of the GMT agreement (i.e., called "in-scope" companies).

Because Swiss federal and cantonal taxes are already low relative to other nations, the GMT could be an opportunity for Switzerland to attract multinational companies that find themselves in countries needing to raise their tax rates to GMT levels.⁹² Any increased revenues from the minimum global tax would give cantons, with authority to administer it, incentives to reduce locational disincentives and increase locational benefits, such as lowering and simplifying tax rates on personal income, property, and wealth, and improving physical infrastructures. Switzerland might also find opportunities in so-called substance-based carve-outs, which are investments in assets, ESG projects, factories, and research labs, which would be written off and, therefore, excluded from the minimum tax rate, along with a portion of the wages and salaries paid.

⁹⁰ Ernst & Young, Switzerland Plans to Implement the OECD Minimum Tax Rate for Large Multinational Companies from 2024, January 14, 2022, https://www.ey.com/en_gl/tax-alerts/switzerland-plans-to-implement-oecd-minimum-tax-rate-for-large-multinational-companies-from-2024 (Accessed on August 24, 2022).

⁹¹ The minimum tax rate would be based on OECD rules, which could differ from each jurisdiction's statutory tax rate.

⁹² Daniel Bunn, Switzerland Should View the Global Minimum Tax as an Opportunity, SWISSINFO.CH, January 22, 2022, <https://www.swissinfo.ch/eng/switzerland-should-view-the-global-minimum-tax-as-an-opportunity/47279704#:~:text=The%20global%20minimum%20tax%20agreement,cantons%20where%20multinationals%20are%20located> (Accessed on August 24, 2022).

Navigating Volatile Interest Rates

The SNB accepts interest-bearing and non-interest-bearing deposits of banks.⁹³ Under normal conditions for central banks, the interest rate on interest-bearing deposits is positive, but Swiss and global instability put the nation's nominal interest rates on a rollercoaster ride.

Switzerland's Falling and Negative Interest Rates

Between 2007 and 2023, global economic volatility, political uncertainty, and diminishing growth prospects increased the demand for safe Swiss franc-denominated deposits and financial investments. Among the sources of volatility were the US-subprime mortgage failure and subsequent "Great Recession" (2007–2009), Greece's and Europe's sovereign-debt problems (2008–2012), and Russia's invasion of Ukraine (2014). Growth in European countries fell, and prospects for continued Chinese growth grew dim. These forces increased foreign financial capital flows into the Swiss franc, raising its value. To discourage these inflows and lower the Swiss franc's euro value, the SNB lowered its LIBOR target and intervened in the foreign exchange market, increasing the nation's monetary base. These actions did little to reduce foreign demand for Swiss francs. In December 2014, the Bank imposed a negative interest rate equal to -0.25% on bank sight deposits at the SNB,⁹⁴ and in January 2015, it reduced this rate to -0.75% , together with decreasing the three-month LIBOR target range from -1.25% to -0.25% .⁹⁵

Switzerland's financial institutions pay interest only on deposits above SNB-determined exemption thresholds. The SNB can reduce the direct burden of negative interest rates on banks by raising the exemption. At the end of 2020, approximately CHF 221 billion in financial institutions' sight deposits at the SNB were subject to negative interest rates, on which the

⁹³ The Swiss Confederation, Federal Act on the Swiss National Bank (National Bank Act, NBA), Art. 9 para 1 (a), October 3, 2003 (Status as of August 1, 2021), <https://www.fedlex.admin.ch/eli/cc/2004/221/en> (Accessed on August 24, 2022).

⁹⁴ See the SNB's Instruction Sheets for the exemption calculation. Swiss National Bank, Terms of Business: 2022, Undated, https://www.snb.ch/en/iabout/snb/legal/id/snb_legal_terms (Accessed on August 24, 2022).

⁹⁵ Swiss National Bank, Important Monetary Policy Data for the Week Ending January 16, 2015, January 19, 2015, https://www.snb.ch/en/mmr/reference/gwd_20150119/source/gwd_20150119.en.pdf (Accessed on August 24, 2022).

Table 3.2 Calculation of the SNB exemption threshold⁹⁹

Moving average minimum reserve requirements during the last 36 reporting periods
× Threshold factor (basis component)
– Cash holdings during the last reporting period (Cash holdings component)
= Exemption threshold

SNB earned CHF 1.4 billion.⁹⁶ These revenues were about CHF 561 million less than the SNB earned in 2019, in large part due to an increase in the exemption threshold in April 2020 from 25 to 30.⁹⁷

The SNB's exemption threshold is calculated by subtracting a financial institution's cash holdings in the previous reporting period from the moving average minimum reserve requirements during the last 36 reporting periods, multiplied by the threshold factor (see Table 3.2). Since 2019, this exemption threshold has been updated daily.⁹⁸

The loss of bank revenues from negative interest rates has caused criticism, skepticism, and concern about their effectiveness and risks as monetary policy tools.¹⁰⁰ In particular, they have been criticized for:

- Penalizing small savers, even though Swiss banks rarely charged them negative interest rates;
- Causing income redistribution from savers to borrowers and from the financial sector to the export sector;

⁹⁶ Swiss Bankers Association, Swiss Banking, Banking Barometer 2020: Economic Trends in the Swiss Banking Industry, September 2020, <https://www.abti.ch/sito/wp-content/uploads/banking-barometer-2020-as-pdf.pdf> (Accessed on August 24, 2022).

⁹⁷ Swiss Bankers Association, Swiss Banking, Banking Barometer 2020, *ibid.* Also, see Swiss Bankers Association, Swiss Banking, Banking Barometer 2021: Economic Trends in the Swiss Banking Industry, August 2021, https://www.swissbanking.ch/_Resources/Persistent/d/a/a/2/daa21be6156a7011d967a9182bb412c2a9d6f404/SBA_Banking_Barometer_2021_EN.pdf (Accessed on August 24, 2022).

⁹⁸ Swiss National Bank, Monetary Policy Assessment of September 19, 2019: Instruction Sheet Governing Negative Interest on Sight Deposit Balances, September 19, 2019, https://www.snb.ch/en/mmr/reference/pre_20190919/source/pre_20190919.en.pdf (Accessed on August 24, 2022).

⁹⁹ Swiss National Bank, 113th Annual Report: Swiss National Bank: 2020, https://www.snb.ch/en/mmr/reference/annrep_2020_komplett/source/annrep_2020_komplett.en.pdf (Accessed on August 24, 2022).

¹⁰⁰ Swiss Bankers Association, Swiss Banking, Banking Barometer 2020: Economic Trends in the Swiss Banking Industry, *ibid.*

- Reducing the return and investment alternatives facing pension funds, which have regulatory requirements compelling them to hold a high proportion of bonds (in general, 20–50%); and
- Increasing investors' risk tolerances to earn higher returns by shifting asset allocations toward more speculative, higher-yielding investments, such as real estate and investment properties.

Normal conditions call for positive interest rates. The SNB realized that its exit from abnormal conditions, which negative interest rates represented, would need careful planning.¹⁰¹

Switzerland's Rising Interest Rates

In 2021, conditions changed. Switzerland's inflation rate rose and, by 2022, exceeded targeted levels, at rates not seen in 14 years. More than a decade-and-a-half of excessive monetary base growth to stimulate the sluggish economy and stabilize the Swiss franc exchange rate led to demand-pull inflation. Furthermore, the COVID-19 pandemic (2021+) and Russia's invasion of Ukraine (2022) caused cost-push inflation. In its June 2022 meeting, the SNB raised its policy rate by 50 basis points to -0.25% , the first rate hike since 2007. Similar rate hikes were made worldwide. Increased financial and economic volatility raised Switzerland's real rate, and expected inflation rose due to demand-pull and cost-push forces. The SNB's contractionary monetary policies in mid-2022 were efforts to reduce inflation and expected inflation to take some of the pressure off the nation's rising nominal interest rates.

Protecting the Financial System from Paradigm-Changing Events

During the first quarter of the twenty-first century, Switzerland suffered economic fallout from the US-subprime mortgage collapse and resulting "Great Recession," European Debt Crises, Brexit, COVID-19 pandemic, natural disasters, political upheavals, and wars in foreign countries, such

¹⁰¹ Swiss Bankers Association, Swiss Banking, Negative Interest Rates: From Emergency Measure to the "New Normal"—and Back?, October 2019, https://www.swissbanking.ch/_Resources/Persis tent/3/5/0/5/35055adfebd3b2978cc1d101d648aa73647131a6/SBA_Negative_interest_rates_EN.pdf (Accessed on August 24, 2022).

as Ukraine. The nation fortified its financial system by buttressing financial institutions' equity (capital) and liquidity requirements, limiting bank exposures, and restricting the range of financial institutions' organizational structure choices. When the economy faltered, the Swiss government boosted spending, and the central bank eased monetary policies.

Systemically Important Financial Institutions (SIFIs): Too Big to Fail

Due to the 2007–2009 financial crisis, the Swiss government, the SNB, Swiss banks, and the SBA worked together to protect the domestic financial system from the failure of SIFIs, such as large banks, insurance companies, and asset managers. Due to their size and intimate interconnections with other financial intermediaries, the resulting effort came to be known as “Too Big to Fail” (TBTF).¹⁰²

The SNB was charged with determining which financial institutions qualified as SIFIs. To date, only Switzerland's “big banks” and three large domestic banks (i.e., PostFinance,¹⁰³ Zürcher Kantonalbank (ZKB), and Raiffeisen Group) have qualified. Globally connected UBS and Credit Suisse are called “global systemically important banks” (“G-SIBs”), and the three large domestic banks are called “domestic systemically important banks” (D-SIBs). The threat that market turmoil might cause insolvency and disorderly failures of these SIFIs resulted in additional capital requirements, with a priority put on the protection of domestic deposits and loans.¹⁰⁴ It also set into motion plans to split up domestic businesses and restrain their expansion abroad.

¹⁰² FINMA, “Too Big to Fail Dossier,” March 24, 2022, <https://www.finma.ch/en/documentation/dossier/dossier-too-big-to-fail/> (Accessed on August 24, 2022).

¹⁰³ PostFinance is Switzerland's only State-owned bank. In June 2021, the Swiss Federal Council amended the Post Organization Act. Under the new rules, PostFinance would be privatized and spun off from the Swiss Post Group, with Swiss Post relinquishing its majority shareholding. PostFinance is free to compete in the loan and mortgage markets.

¹⁰⁴ FINMA, Systemically Important Banks, Undated, <https://www.finma.ch/en/enforcement/recovery-and-resolution/too-big-to-fail-and-financial-stability/systemically-important-banks/#:~:text=In%20inc%20with%20the%20international,domestic%20systemically%20important%20banks%2FD%2D> (Accessed on August 24, 2022).

Amended Liquidity Requirements

Liquidity Coverage Ratio and Net Stable Funding Ratio

In reaction to the US-subprime mortgage breakdown and subsequent Great Recession (2007–2009) and European debt crises (2008–2012), Switzerland improved its financial institutions’ short-term and long-term liquidity. Short-term liquidity was addressed in 2015 by revising the *Liquidity Ordinance (LiqO)* to include a Liquidity Coverage Ratio (LCR), whose purpose was to ensure that banks had at least a quantitative minimum of liquidity to meet their short-term (i.e., one-month) payment needs. The LCR followed Basel III standards,¹⁰⁵ and the FINMA retained the right to increase it if conditions warrant them. This ordinance was amended and turned into ordinary law in September 2021.

Net Stable Funding Ratio (NSFR)

On September 11, 2020, the Swiss Federal Council amended the *LiqO*, implementing the Net Stable Funding Ratio (NSFR) to boost banks’ resilience to crises and ensure long-term liquidity.¹⁰⁶ The NSFR came into force on July 1, 2021, aligned with EU, United States, and Basel III standards. It complemented, rather than substituted for, the LCR requirement because the NSFR focused on natural hedges, matching the maturities of financial institutions’ assets and liabilities—particularly, long-term assets and liabilities. The NSFR’s “Available Stable Funding” (ASF) rule requires banks’ long-term liabilities plus equity to be greater than or equal to their Required Stable Funding (RSF), which equals liquidity-adjusted assets or exposures.¹⁰⁷

¹⁰⁵ The Basel III standards are banking guidelines set by the BIS to ensure that banks have sufficient capital (quality and quantity) to handle credit, market, and operational risks. These standards also address the liquidity banks need to remain going concerns. Their goal is to promote global financial market stability.

¹⁰⁶ Der Bundesrat, Verordnung über die Liquidität der Banken und Wertpapierhäuser, November 30, 2012, <https://www.fedlex.admin.ch/eli/cc/2012/883/de> (Accessed on August 24, 2022). Also, see, KPMG, Ordinance on the Liquidity of Banks (Liquidity Ordinance, LiqO), SR 952.06, November 30, 2012 (Status as of July 1, 2021), <https://assets.kpmg/content/dam/kpmg/pdf/2016/01/ch-pub-20150101-liquidity-ordinance-en.pdf> (Accessed on August 24, 2022).

¹⁰⁷ Loyens and Loeff, Swiss Federal Council Introduces NFR for Banks from July 2021, September 14, 2020, <https://www.loyensloeff.com/insights/news--events/news/swiss-federal-council-introduces-nsfr-for-banks-from-july-2021/> (Accessed on August 24, 2022).

Stricter Capital Adequacy Requirements

Leverage Ratio

At first, the LCR was imposed only on SIFIs, but an enhanced LCR requirement was extended to non-SIFIs on January 1, 2018. Currently, the required LCR is 3% of total capital for non-SIFIs and 4.5% for SIFIs. A maximum of 1.5% of this requirement can be met using additional Tier 1 capital.¹⁰⁸ Switzerland's *Capital Adequacy Ordinance (CAO)*¹⁰⁹ requires SIFIs to hold a maximum of 1.5% of the LCR.

Going-Concern Versus Gone-Concern Capital

The more capital a financial institution has relative to its assets, the more resilient it is to unexpected losses from ongoing business activities. Under Switzerland's new rules, SIFIs needed more "going-concern" and "gone-concern" capital, which together comprise a bank's total loss-absorbing capacity (TLAC). Going-concern capital ensures that financial institutions have sufficient equity to support their ongoing operations and remain solvent. If a financial institution is not a "going concern," it is insolvent or "gone." Therefore, "gone-concern capital" is what a financial institution must repay depositors and senior creditors if it becomes insolvent. G-SIBs must hold 100% of their going-concern plus gone-concern requirements as TLAC.

Going-concern capital requirements for all SIFIs consist of three parts:

1. A base requirement on risk-weighted assets (RWAs) equal to 12.86%, plus a buffer that could increase the total capital requirement to 14.3% and a leverage ratio of 4.5%¹¹⁰;
2. Additional equity that is dependent on the financial institution's size and exposures in the domestic lending and deposit markets; and
3. Countercyclical capital buffers.

For non-SIFIs, Swiss rules set the minimum equity ratio equal to 8% of risk-weighted assets. Domestic SIFIs' gone-concern capital is set at a

¹⁰⁸ See CAO, Article 46, *ibid*.

¹⁰⁹ Swiss Confederation, Ordinance on the Capital Adequacy and Risk Diversification of Banks and Securities Firms (Capital Adequacy Ordinance, CAO), June 1, 2012 (Status as of August 1, 2021), <https://www.fedlex.admin.ch/eli/cc/2012/629/en> (Accessed on August 24, 2022).

¹¹⁰ Non-systemic banks must have a capital of at least 10.5% (i.e., a minimum regulatory capital of 8% plus a buffer of at least 2.5%) of their risk-weighted positions.

minimum level of 40% of the going-concern capital, and the two largest banks (UBS and Credit Suisse) must hold gone-concern capital equal to 62% of their going-concern requirements.¹¹¹

For non-SIB-designated banks, the leverage ratio requires Tier 1 capital equal to at least 3% of total (non-risk-weighted) assets. SIBs must hold as much as 10%, but the additional equity requirements on SIFIs have varied. For example, at the end of 2020, Credit Suisse had to add 1.44% to its RWA ratio and 0.5% to its leverage ratio. UBS needed to add 1.08% to its RWA ratio and 0.375% to its leverage ratio. Raiffeisen banks added 0.36% and 0.125%, respectively, to their RWA and leverage ratios. Neither ZKB nor PostFinance had additional equity requirements.

Countercyclical Buffer

The Swiss government was given the power to implement a countercyclical capital buffer between 0 and 2.5% of risk-weighted assets. For banks with balance sheets equal to or greater than CHF250 million, the buffer was set at 2.5%, but the SNB retained the power to increase this countercyclical buffer to address special situations, such as a real estate bubble. Initially introduced in 2013, this buffer was set at 2%.

Concentration Risks

Non-SIFIs and SIFIs must limit their concentration risks. For non-SIFIs, the standard upper limit is 25% of Tier 1 capital.¹¹² SIFIs have a concentration ratio limit of 15% of Tier 1 capital.¹¹³ Starting on June 1, 2016, Switzerland required G-SIBs to build a gone-concern buffer. This requirement was calibrated to equal going-concern capital (i.e., 14.86% of risk-weighted assets).

¹¹¹ René Bösch and Franziska Balsiger-Geret, *ibid.*

¹¹² Tier 1 capital equals Tier 1 (CET 1) plus additional Tier 1 capital (AT 1). Tier 1 (CET 1) capital is composed of common stock, stock surpluses resulting from the issue of common shares, retained earnings, common shares issued by subsidiaries and held by third parties, and accumulated other comprehensive income (AOCI). Additional Tier 1 capital (AT 1) consists of securities that can be converted into equity, such as contingent convertible or hybrid securities. Investopedia, Tier 1 Capital: Definition, Components, Ratio, and How It's Used, Undated, <https://www.investopedia.com/terms/t/tier1capital.asp> (Accessed on August 24, 2022).

¹¹³ FINMA, Capital Requirement for Systemically Important Banks, Undated, <https://www.finma.ch/en/enforcement/recovery-and-resolution/too-big-to-fail-and-financial-stability/capital-requirements-for-systemically-important-banks/> (Accessed on August 24, 2022).

Initially, these rules applied only to G-SIBs, but they were extended to D-SIBs in 2019 and 2020, with certain modifications and a phase-in period until 2026.

SIFIs are also required to draw up recovery/emergency plans, specifying the precautionary measures they have taken and would take if a financial crisis led to insolvency or illiquidity. The possibility of transferring essential functions to a group company (a “service co”) to assure business continuity must also be addressed in these recovery/emergency plans. The FINMA required each G-SIB to establish a service connected to their emergency/recovery plans.¹¹⁴

Responding to the Covid-19 Pandemic¹¹⁵

In 2020, the COVID-19 pandemic prompted Switzerland’s government, its financial intermediaries, the SNB, and the SBA to address the resulting economic and financial fallout. In February, the government banned social events with more than 1,000 participants,¹¹⁶ imposed cross-border restrictions, and implemented a sizeable fiscal rescue package. The SNB supported the economy by providing quick, reliable, and ample liquidity to financial institutions.¹¹⁷

Federal Government Support

In March 2020, the Swiss Confederation announced a CHF 42 billion support package, focusing on replacing lost wages, extending short-term loans to businesses, backing non-profit cultural institutions and clubs, deferring social security payments, and granting forbearance on repayments of government loans. On March 25, 2020, the Federal Council adopted the *COVID-19 Joint and Several Guarantee Ordinance*¹¹⁸ and then refined and turned it into ordinary law in December 2020 (i.e., the *COVID-19 Joint*

¹¹⁴ René Böschi and Franziska Balsiger-Geret, *Banking Regulation in Switzerland: Overview*, *ibid.*

¹¹⁵ An excellent source of information on the results of Switzerland’s uses and abuses of COVID-19 credits can be found at: Swiss Confederation, *Covid-19 Credits*, June 29, 2022, <https://covid19.eas.gov.swiss/en/> (Accessed on August 24, 2022).

¹¹⁶ This maximum number was reduced to 100 in March 2020 and decreased again to 15 in October 2020.

¹¹⁷ The Federal Council, *Coronavirus: Emergency Ordinance on COVID-19 Credits to Be Incorporated into Ordinary Law*, July 1, 2020, <https://www.admin.ch/gov/en/start/documentation/media-releases.msg-id-79683.html> (Accessed on August 24, 2022).

¹¹⁸ The Federal Council, *Coronavirus: Federal Council Adopts Dispatch on New Joint and Several Guarantee Act*, September 18, 2020, <https://www.admin.ch/gov/en/start/documentation/media-releases/media-releases-federal-council.msg-id-80449.html> (Accessed on August 24, 2022).

and Several Guarantee Act).¹¹⁹ This plan gave the Swiss government lending power that resulted in about 139,000 credits with a volume of CHF 17 billion.¹²⁰ More than 80% of these loans were to small and medium-sized enterprises (SMEs) with ten or fewer employees. These government bridge loans were interest-free, fully guaranteed up to CHF 500,000, and gave participants immediate access to credit facilities that were secured by four recognized guarantee organizations.¹²¹ For loans between CHF 500,000 and CHF 20 million, the federal government guaranteed 85%, per company, and banks guaranteed 15%.¹²² In the future, the Swiss government may need to borrow to finance the resulting expenditure gap, but due to recent-year budget surpluses and the hope that Switzerland's debt brake will continue to deter budget deficits, retiring this debt does not appear to be a significant future problem.

SNB Support

In May 2020, the central bank launched its SNB COVID-19 Refinancing Facility (CRF),¹²³ created to mitigate the coronavirus' economic impact on the Swiss financial system. CRF allowed Swiss financial institutions to finance their liquidity needs with quick, covered loans. The SNB assisted in other ways, such as increasing the SNB's negative-interest-rate threshold factor from 25 to 30, in order to keep banks from passing through negative interest rates to small savers. Following a request from the SNB, the Federal Council lowered the countercyclical capital buffer (a component of the Basel III regulatory framework) to 0%, thereby relaxing the capital requirements for mortgage loans.

¹¹⁹ The Federal Council, Coronavirus: Emergency Ordinance on COVID-19 Credits to Be Incorporated into Ordinary Law, July 1, *ibid*.

¹²⁰ Swiss Bankers Association, Swiss Banking, Banking Barometer 2021, *ibid*.

¹²¹ The Federal Council, Coronavirus: Federal Council Adopts Dispatch on New Joint and Several Guarantee Act, September 18, 2020, *ibid*.

¹²² Swiss Bankers Association, Swiss Banking, Banking Barometer 2021, *ibid*. Also, Swiss Dominik Feusi, Confederation Launches Largest Rescue Package in Swiss History, *Tages Anzeiger*, March 21, 2020, <https://www.tagesanzeiger.ch/wirtschaft/standardbund-startet-groesstes-rettungspaket-der-schweizer-geschichte/story/31151375> (Accessed on August 24, 2022).

¹²³ Swiss National Bank, SNB COVID-19 Refinancing Facility (CRF), Undated, https://www.snb.ch/en/ifor/finmkt/operat/id/finmkt_crf (Accessed on August 24, 2022).

Swiss Banks in the Broader Swiss Economy

The financial sector is Switzerland's most important service industry, contributing roughly 12% to the nation's GDP, with the banking and insurance industries supplying about 54% and 46%, respectively, of the total.¹²⁴ Between 1990 and 2020, the Swiss financial sector's gross value added grew from 7% of GDP to 13.9% and averaged about 12% from 2008 to 2020.¹²⁵

Switzerland's financial sector provides full-time jobs for approximately 350,000 people, with the banking and insurance sectors accounting for 66% and 34%, respectively, of the total. Together, they comprise slightly more than 8% of the nation's total workforce.¹²⁶ The discrepancy between the relatively low portion of Switzerland's workforce employed in financial services (i.e., about 8%) and the industry's larger share of GDP (i.e., 10%) is explained by the relatively high level of employee productivity.

The contributions of Switzerland's financial services sector to the nation's well-being are enhanced by considering its indirect impact, which includes jobs created and output produced to supply the financial sector employees when they spend their incomes. The financial services industry's indirect contributions to employment amounted to approximately 55% of its direct full-time employment.¹²⁷ This sector is also a significant taxpayer, contributing about 13% of the public sector's tax revenues.¹²⁸

From 1990 to June 2022, the nominal value of Swiss banking assets grew at a compound annual rate of 4.1% (see Fig. 3.1), almost two percentage points faster than Switzerland's nominal GDP. Switzerland is one of the most intensively banked countries in the world.¹²⁹ In 2020, it had a total

¹²⁴ BAK Economics AG, Economic Impact of the Swiss Financial Sector: Study Commissioned by the Swiss Bankers Association (SBA) and the Swiss Insurance Association (SIA), 2020, https://www.swissbanking.ch/_Resources/Persistent/1/d/c/1/1dc148d0616e3676f52cfdcc714c87f03690378f/BAK_Economics_Economic_Impact_Swiss_Financial_Sector_Executive_Summary.pdf (Accessed on August 24, 2022). In 2019, the banking and insurance industries provided 146,800 and 75,600 jobs, respectively, roughly 4.5% of the nation's total workforce.

¹²⁵ European Banking Federation, Swiss Banking, Switzerland's Banking Sector: Facts and Figures, Updated December 2021, <https://www.ebf.eu/switzerland/> (Accessed on February 2, 2023).

¹²⁶ BAK Economics AG, World Bank, DataBank: World Development Indicators, 2022, <https://data.abank.worldbank.org/source/world-development-indicators> (Accessed on August 24, 2022).

¹²⁷ In 2019, the financial services industry's indirect gross value-added equaled CHF 17.6 billion and accounted for 123,100 additional full-time jobs. Banks accounted for CHF 11.6 billion in gross value added and 81,300 full-time equivalent jobs (FTE). Insurance accounted for CHF 6.0 billion in gross value added and 41,800 FTEs. Ibid.

¹²⁸ Swiss Bankers' Association, Annual Report 2020/2021, https://www.swissbanking.ch/_Resources/Persistent/8/4/9/84990552bbe07716e5057e35a6533f19838b9494/SBA_Annual%20Report2021_EN.pdf, (Accessed on August 24, 2022).

¹²⁹ For comparisons, see The World Bank, Commercial Bank Branches (per 100,000 adults), <https://data.worldbank.org/indicator/FB.CBK.BRCH.P5> (Accessed on August 24, 2022).

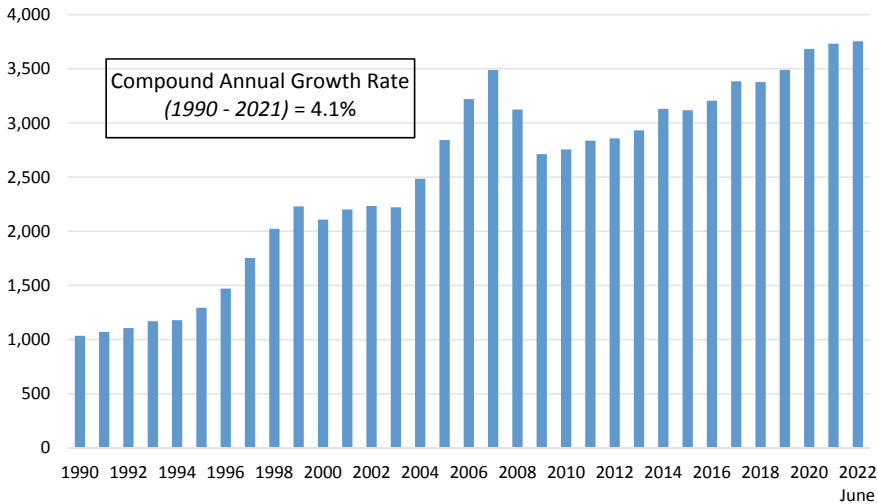


Fig. 3.1 Swiss Bank assets: 1990–June 2022 (Millions of Swiss francs) (Consolidation level: Parent company) (Source Swiss National Bank, Monthly Banking Statistics, [https://data.snb.ch/en/warehouse/BSTA#!/cube/BSTA@SNB.MONA_U.BIL.AKT.TOT?fromDate=1987-09&toDate=2021-09&dimSel=KONSOLIDIERUNGSSTUFE\(U\),INLANDAUSLAND\(T\),WAEHRUNG\(T\),BANKENGRUPPE\(A40\)](https://data.snb.ch/en/warehouse/BSTA#!/cube/BSTA@SNB.MONA_U.BIL.AKT.TOT?fromDate=1987-09&toDate=2021-09&dimSel=KONSOLIDIERUNGSSTUFE(U),INLANDAUSLAND(T),WAEHRUNG(T),BANKENGRUPPE(A40))) [Accessed on August 26, 2022]. *See Table 3.8 in *Appendix* for data by the year)

of 243 banks, 2,477 branches, and 6,901 ATMs, serving a population of 8.637 million people, which is approximately one branch office for every 3,500 inhabitants.¹³⁰ In its trade with foreign nations, Switzerland's financial services sector has perennially been one of the most significant contributors to the nation's invisibles surplus in the balance of payments. Between 2000 and 2021, it added an average of nearly CHF 17 billion to Switzerland's current account.¹³¹

¹³⁰ Swiss Bankers Association, EBF, Swiss Banking: Switzerland's Banking Sector: Facts and Figures, December 2021, <https://www.ebf.eu/switzerland/#:-:text=As%20of%20year%2Dend%202020,ownership%20structure%20and%20regional%20orientation> (Accessed on August 24, 2022).

¹³¹ Swiss National Bank, Swiss Balance of Payments—Current Account Services, by Country—Year, June 22, 2022, [https://data.snb.ch/en/topics/aube#!/cube/bopserva?fromDate=2012&toDate=2020&dimSel=D0\(T0\),D1\(DT,F\),D2\(E,A,S\)](https://data.snb.ch/en/topics/aube#!/cube/bopserva?fromDate=2012&toDate=2020&dimSel=D0(T0),D1(DT,F),D2(E,A,S)) (Accessed on August 24, 2022).

Swiss Banking and Deposit Insurance: An Overview

Since the 1990s, Switzerland's banking structure has undergone profound changes due to economic, political, and technological forces, such as deregulation, the integration of financial markets, internationalization, digitalization, computerization, the elimination of many cartel agreements, and the enactment of legislative reforms. These changes have affected the sources of banks' profitability, their risk-mitigation strategies, their sizes relative to other Swiss industries, and their level of internationalization.

Swiss Banking Rivalry and Conventions

Since World War II, Switzerland's banking system has been dominated by its two "big banks," UBS and Credit Suisse, but since 2016, the number of big banks has increased to four: UBS, UBS Switzerland AG, Credit Suisse, and Credit Suisse (Switzerland) Ltd. Smaller financial institutions have competed by providing businesses and individuals with a wide variety of useful and efficient financial services, partnerships, and instruments. Most Swiss companies have more than one banking relationship and use their multiple affiliations to extract the best terms, such as variations in the range, efficiency, safety, and quality of financial services.

Price competition has become increasingly more important among Swiss financial institutions. In the old days, the Swiss banking system had a tradition of strong mutual agreements that eliminated or substantially reduced price competition. These formal and informal agreements were an outgrowth of inter-connected family businesses, joint military service, professional organizations, social club memberships, and university educations that reduced competition by homogenizing and personalizing potential business competition.

Bank conventions covered a gamut of banking activities from fixed syndicates that provided underwriting services for Swiss-franc-denominated foreign bonds to advertising restrictions to uniform dividend payments to standardized fees (and conditions) for services, such as documentary credits, custody, and foreign exchange transactions. The agreements and conventions also fixed brokerage commissions and permitted many, otherwise inefficient, financial institutions to survive. These practices became obsolete in the globalized, modern-day competitive banking environment.

Switzerland's former bank conventions were identified as anti-competitive in a 1989 report by the Swiss Cartel Commission, which recommended

their abolition. Because the SBA had a hand in creating them, it worked to eliminate most of the remaining anachronistic practices and has remained committed to fostering a competitive market domestic and global environment. As a result, the Swiss banking sector has replaced its cartels and conventions with active head-to-head competition, causing its prices and costs to become keenly competitive.

Swiss Universal Banking

Since 1934, Swiss banks have operated under the *Federal Act of Banks and Savings Banks* (aka, *Banking Act*, *BA*) and subsequent revisions. The *BA* has been responsible for regulating crucial elements of financial institutions' management quality, organizational structure, liquidity, and capital adequacy. It includes significant provisions for protecting confidential bank customer information. As strict and confining as the *BA* has been in some areas, it has not restricted the types of activities in which Swiss banks can participate. In short, this key Swiss law does not distinguish between commercial and investment banking activities. As a result, Swiss financial institutions have no clearly defined lines of functional responsibility. Technically, they enjoy "universal banking" privileges and can participate in almost all lines of financial business at any location within the country.

Despite universal banks' freedoms, it is practiced only by a small portion of the Swiss banks, mainly the "big banks" and the larger cantonal banks. The remaining financial institutions specialize, more or less, on lending and portfolio management, usually in narrow regional locations.

Over time, the financial industry has segmented itself into contestable pockets with varying degrees of competitiveness. This segmentation process has been evolutionary, as high relative profits in one area and declining profits in others have spirited movements of funding, individuals, and interest to and from different business lines. Along with these movements have come regulations to address newly perceived needs.

Swiss Deposit Insurance

Customer deposits of Swiss banks are "privileged" over other bank liabilities. The *BA* requires all Swiss banks and securities dealers to have these preferential deposits insured by *esisuisse*, which is a collective scheme that protects

customers up to CHF100,000 per depositor.¹³² Members agree to provide the required funds to customers within one month of an insured bank's insolvency, and when the insolvent bank is liquidated, esisuisse members distribute the proceeds.¹³³

On December 17, 2021, Switzerland's Parliament accepted the Federal Council's proposal to strengthen *BA* protections and promote financial market stability. Under the new rules and regulations, which are scheduled to enter into force on January 1, 2023:

- The bank liquidator will pay deposit insurance not exceeding CHF 100,000 per customer per bank to depositors within seven working days of a declared bankruptcy;
- Bank contributions to deposit insurance will be 1.6% of the system-wide guaranteed deposits, with a minimum draw of CHF 6 billion; and
- Banks will invest half of their insurance collections in safe, liquid securities and deposit these securities permanently with a third-party custodian.¹³⁴

Swiss Banking Structure

The SNB separates Switzerland's domestic banking industry into nine major institutional categories: (1) big banks, (2) cantonal banks, (3) regional and savings banks, (4) Raiffeisen banks, (5) stock exchange banks, (6) other banking institutions, (7) foreign-controlled banks, (8) branches of foreign banks, and (9) private banks.¹³⁵ Different banks have different roles, depending on the financing, advising, and information needs of their customers. Table 3.3 provides a brief overview of Switzerland's most important banking-related financial institutions.

¹³² Swiss Bankers Association and Boston Consulting Group, Swiss Banking, Financial Centre Participants, Undated, <https://www.swissbanking.ch/en/financial-centre/financial-centre-participants#:~:text=The%20two%20big%20banks%20are,financial%20centres%20around%20the%20world> (Accessed on August 24, 2022). Also, see esisuisse Homepage, www.esisuisse.ch (Accessed on August 24, 2022).

¹³³ Some deposit accounts, such as vested benefit schemes, may gain additional protection up to CHF100,000 (see *BA* Art. 37a(5)). Also, Swiss banks' and security dealers' customer custody accounts are classified as segregated client assets in cases of a bank's or security dealer's insolvency (see *BA*, Art. 37d).

¹³⁴ Judith Raijmakers, Parliament Adopts Partial Revision of the Swiss Federal Banking Act, December 29, 2021, https://www.loyensloeff.com/en/en/news/news-articles/parliament-adopts-partial-revision-of-the-swiss-federal-banking-act-n24446/?utm_source=Mondaq&utm_medium=syndication&utm_campaign=LinkedIn-integration (Accessed on August 24, 2022).

¹³⁵ A tenth category, "bank-like finance companies," existed before 1994. When the *BA* was revised, this category was removed.

Table 3.3 Brief descriptions of Switzerland's nine bank categories

Type of Swiss bank	Description
Cantonal banks	Switzerland has 26 cantons, which were created by cantonal laws and focused on financing the needs of cantonal residents. Cantons invest equity capital in these banks and hold more than a third of their voting shares. Most (but not all) cantons guarantee customer liabilities. Many cantonal banks are established as public sector institutions, but they may also be established as mixed-stock companies (i.e., entities under special law) or private stock companies. Some operate in all fields of business, as universal banks. The Association of Swiss Cantonal Banks represents them
Big banks	There are four "big banks" in Switzerland: UBS, UBS Switzerland AG, Credit Suisse, and Credit Suisse (Switzerland) Ltd., which account for more than half of all deposits in the nation. These financial institutions have extensive branch and international networks
Regional and savings banks	Regional and savings banks are locally focused and specialize mainly in corporate loans, mortgages, savings, and checking deposits. They are similar in function to small cantonal banks, but their geographical range tends to be narrower. Regional and savings banks' competitive advantage is their familiarity with local and regional customers and knowledge of community business circumstances. Many are organized as cooperatives or joint-stock companies, and most are members of the Association of Swiss Regional Banks
Raiffeisen banks	Raiffeisen banks are independent, locally-based cooperative financial institutions, whose central organization operates under the official name of "Raiffeisen Switzerland." Known for their safety, they have existed for more than a century (since 1900) and focus on traditional and regional bank lending, such as mortgage and corporate loans and customer savings and checking deposits. Although most of their business is regional, banks in the Raiffeisen Group operate throughout the country

(continued)

Table 3.3 (continued)

Type of Swiss bank	Description
Stock exchange banks ^a	Stock exchange banks specialize in security brokerage and asset management. They facilitate security investments for private individuals and business clients and earn revenues from brokerage fees and customer loans. Stock exchange banks are regulated by the FINMA and resented by the Association of Swiss Asset and Wealth Management Banks
Foreign-controlled banks ^a	The “foreign-controlled banks” category comprises banks in Switzerland under foreign control. Their principal shareholders are either non-Swiss or foreign shareholders with controlling bank interests. They are legally dependent on their foreign parent companies. Most of their clients reside outside Switzerland, and their banking operations are mainly international. Foreign-controlled banks generally focus on asset management and investment banking for foreign customers. Since 1972, all foreign-controlled banks have belonged to Switzerland’s Association of Foreign Banks
Branches of foreign banks ^a	Branches of foreign banks are controlled by shareholders who are either non-Swiss or foreign residents. Those banks classified under this heading are legally dependent on their foreign parent companies. Most of their clients reside outside Switzerland
Private banks	Private banks are partnerships, mainly offering wealth management services for domestic and foreign customers. They are organized as sole proprietorships, general or limited. Since 1934, they have belonged to the Swiss Private Bankers Association. In 2014, they founded the Association of Swiss Private Banks. Most of their assets are recorded off balance sheet because they represent the financial interests of wealth managers’ customers rather than private banks
Other banking institutions	This category includes all banks not classified under any of the other headings. Therefore, there are no common features among them

Note Swiss banking statistics often merge foreign-controlled banks and branches of foreign banks into a category called “foreign banks”

^aDaniel Drier, Stock Exchange Bank, Moneyland.ch, Undated, <https://www.moneyland.ch/en/stock-exchange-bank-definition> (Accessed on August 30, 2022)

Source Swiss Bankers Association, Swiss Banking: Financial Centre Participants, Undated, <https://www.swissbanking.ch/en/financial-centre/financial-centre-participants#:~:text=The%20two%20big%20banks%20are,financial%20centres%20around%20the%20world> (Accessed on August 30, 2022)

Table 3.4 Number of banks in Switzerland: 2000–2021

	2000	2005	2010	2015	2021	Change 2000–2021
Cantonal banks	24	24	24	24	24	0
Big banks	3	2	2	3 ^a	4 ^b	1
Regional and savings banks	103	79	69	62	59	–44
Raiffeisen banks	1	1	1	1	1	0
Stock exchange banks	57	56	47	44	36	–21
Foreign-controlled banks	127	122	122	85	67	–60
Branches of foreign banks	23	28	32	26	26	3
Private banks	17	14	13	7	5	–12
Other banking institutions	20	11	10	14	17	–3
Total	375	337	320	266	239	–136

^aIn 2015, UBS incorporated UBS Switzerland AG

^bIn 2016, Credit Suisse incorporated Credit Suisse (Switzerland) AG

Source Swiss National Bank, Banks in Switzerland (various yearly issues), 2000–2021, https://www.snb.ch/en/about/stat/statrep/id/statpub_bankench#t2 (Accessed on August 30, 2022)

Table 3.4 shows that, between 2000 and 2021, the number of Swiss banks fell by 35%, from 375 to 239, a loss of 136 banks. Regional and savings banks, foreign-controlled banks, and stock exchange banks accounted for more than 89% of the shrinkage. The changes shown in Table 3.4 resulted from bank mergers, spin-offs, new formations, and structural changes that caused bank reassignments to different categories. For example, in 2020, Neue Aargauer Bank merged with Credit Suisse (Switzerland) Ltd., causing its business to be reassigned to the “big banks” category instead of “regional and savings banks.” Similarly, some “private banks” changed their legal status in 2014 and were reassigned to the “stock exchange banks” category. Important to note is the category called “Raiffeisen banks,” which includes all 220 banks in the Raiffeisen group.

Figure 3.2 shows that, between 2010 and 2021, the number of bank employees in Switzerland fell dramatically by 17%, from 108.0 thousand to 90.6 thousand employees. The reduction was mainly due to industry consolidation, stricter domestic regulations, and outsourcing tasks to less expensive nations.¹³⁶ Big banks accounted for only 25% of total employment in 2021, compared to 37% in 2010. Stock exchange banks nearly doubled

¹³⁶ Swiss Bankers Association and Boston Consulting Group, Swiss Banking, Banking Barometer 2020, September 2020, *ibid.*

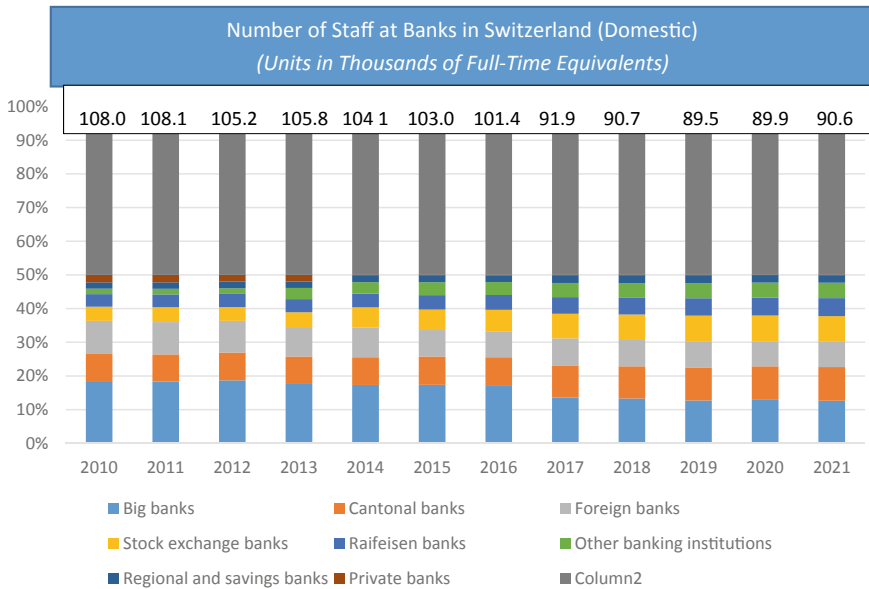


Fig. 3.2 Staff at banks in Switzerland (domestic): 2010–2021 (total staff and percent by bank category) (Source Swiss Bankers Association, Swiss Banking: Banking Barometer 2022, Number of Staff at Banks in Switzerland, Undated, <https://publications.swissbanking.ch/banking-barometer-2022/number-of-staff-at-banks-in-switzerland> (Accessed on August 30, 2022). The original data is sourced from the Swiss National Bank. *See Table 3.9 in Appendix for data by the year)

their employment share from 8 to 15% over these ten years. Cantonal banks increased their employment share from 16 to 20%, which offset most of the portion lost by foreign banks (i.e., from 20 to 15%). Raiffeisen banks increased their employment share by almost 40%, from 8 to 11%. Regional banks remained at about 4% of the market, and private banks declined from 4.4% of banking-sector employment to less than one percent (i.e., 0.7%).

Sources of Swiss Banks' Profitability

Swiss banks earn net income (or suffer losses) from activities that are presented on their balance sheets (i.e., on-balance-sheet activities) and activities that are not shown on their balance sheets (i.e., off-balance-sheet activities). As illustrated in Fig. 3.3, from 2005 to 2021, the interest spread of their on-balance-sheet positions (i.e., what they earned in interest on assets minus the interest they paid on liabilities) accounted for 34–45% of total earnings. Therefore, more than half of their net income came from

off-balance-sheet sources, such as trading commissions and income and portfolio management fees. In general, these net revenue sources increased with market volatility. Between the early 1990 and 2021, Swiss banks’ off-balance-sheet returns varied between 55 and 66% of total returns. In large part, on-balance-sheet activities lost ground due to:

1. Switzerland’s universal banking system,
2. Its focus on portfolio management, and
3. A general trend in banking away from lending and toward securitization.

As seen in Fig. 3.3, returns on Swiss banks’ trading activities were negative in 2008, chiefly due to the US Great Recession and global financial crises, which reduced their securitization activities and forced them to moderate the risks of their off-balance-sheet positions. These problems highlighted the critical role that interbank liquidity plays in a well-functioning financial system. Failure or reluctance to lend among banks (usually reflected in reduced credit lines) sparked an illiquidity contagion, proving that liquidity problems

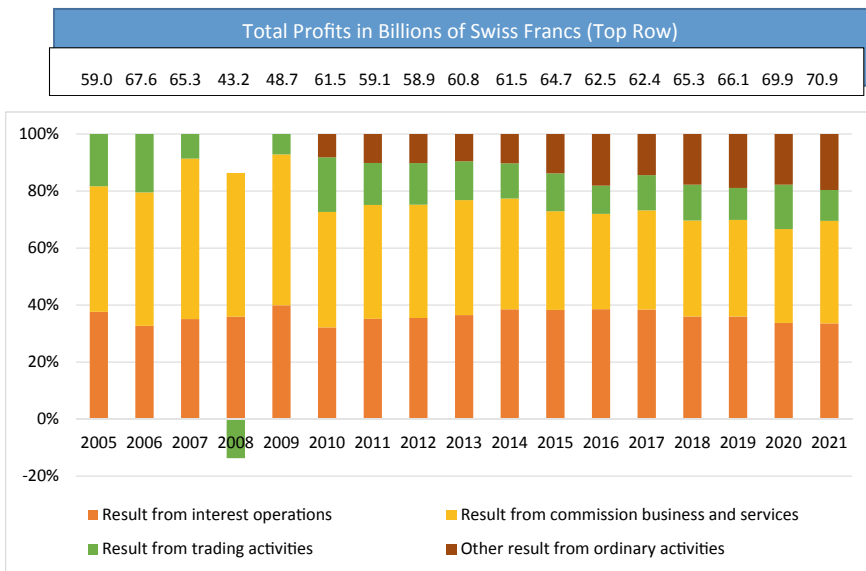


Fig. 3.3 Net income by banking activity (percent and Swiss franc total): 2005–2021 (Source Swiss Bankers Association, Swiss Banking: Banking Barometer 2022, Net Income, <https://publications.swissbanking.ch/banking-barometer-2022/net-income> [Accessed on August 30, 2022]. The original data is sourced from the Swiss National Bank. Figures prior to 2011 come from Henri B. Meier, John E. Marthinsen, and Pascal A. Gantenbein, Swiss Finance: Capital Markets, Banking, and the Swiss Value Chain, John Wiley & Sons, 2012. *See Table 3.10 in Appendix for data by the year)

can pose systemic threats even if the banking system is solvent. The SNB's low-interest-rate strategy to address the global financial crisis (2007–2009), European debt crisis (2008–2012), and COVID-19 pandemic (2019–2022) all contributed to the compressed interest spreads.

On-Balance-Sheet and Off-Balance-Sheet Assets and Liabilities

Balance sheets record the book value of a company's assets and liabilities. If asset values exceed liabilities, the company has positive equity and is solvent. As their name indicates, off-balance-sheet activities do not appear on a financial institution's balance sheet because they are linked to services, such as asset management, underwriting, brokerage, foreign exchange transactions, and gold trading. They also include fiduciary accounts¹³⁷ and derivative-related positions.¹³⁸ Other off-balance-sheet activities are joint ventures, special purpose vehicles, research and development partnerships, and operating leases. These activities are recorded in the footnotes of intermediaries' financial statements.

Switzerland's "on Balance Sheet" Assets and Liabilities

Switzerland's on Balance Sheet Assets

Figure 3.4 shows the evolution of Switzerland's nine categories of financial institutions from 2005 to 2021 for their on-balance-sheet assets. Big banks' assets relative to total banking assets fell from 68 to 44%; Cantonal banks, Raiffeisen banks, and stock exchange banks more than doubled the nominal value of their assets, significantly increasing their market shares. Cantonal banks' assets grew nominally by 121%, raising their share of total assets from 12 to 20%. Raiffeisen banks grew by 163%, and stock exchange banks grew by 154%, increasing their market shares from about 4 to 8%.¹³⁹

¹³⁷ A fiduciary account is held on behalf of and at the risk of a customer but invested in the financial institution's name.

¹³⁸ Examples of financial derivatives used to hedge net on-balance-sheet positions are forwards, puts, and calls.

¹³⁹ Beginning at CHF 1,910.0 billion in 2005, the big banks' assets fell to CHF 1,566.7 billion in 2020. Cantonal banks grew from CHF 1.91 billion in 2005 to CHF 697 billion in 2020. During the same period, Raiffeisen banks grew from CHF 108.2 billion to CHF 259.7 billion, and stock exchange banks increased from CHF 106.1 billion to CHF 256.9 billion.

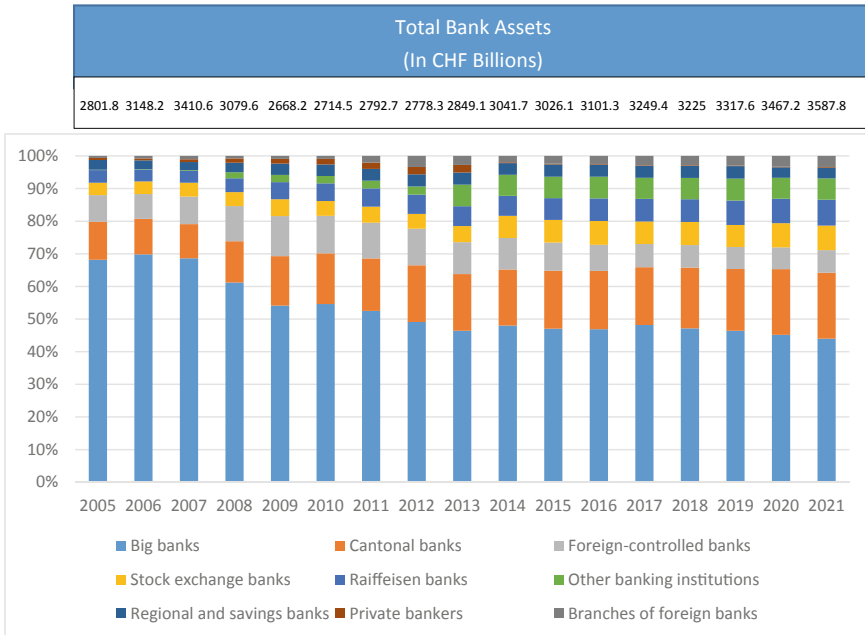


Fig. 3.4 Portion of total bank assets by bank category: 2005–2021 (Parent company perspective [survey: comprehensive year-end statistics]) (Source Swiss National Bank, Balance Sheet Total, Development by Bank category, <https://data.snb.ch/en/topics/banken/chart/babilentbguach> [Accessed on August 26, 2022]. *See Table 3.11 in Appendix for data by the year)

Regional and savings banks, which were about 3% of total assets in 2005, and foreign-controlled banks, which were about 8% of total assets that year, grew in absolute terms but remained a relatively constant portion of total bank assets. Foreign bank branches made significant gains, increasing their assets by more than 597%, but because they were such a small portion of total assets, their market shares increased only from 1 to 3%.

Private banks invest clients' funds, which are recorded off balance sheet and do not enter into these calculations, except for the relatively small amount of assets owned by private bankers and private banks. This fact, plus the steep decline in Switzerland's private banking activity, accounts for their share of total assets falling from 1% to nearly zero. During these 16 years, the assets of "other banks" rose by more than 6,731%, driving their portion of total assets from 0% in 2005 to 6% in 2021.

Figure 3.5 shows that between 2010 and 2021, Swiss banks' liquid assets grew from 4% of total assets to almost 20%. Receivables from financing securities transactions rose from virtually nothing in 2010 to about 5% of total bank assets. The amounts due from other banks fell by almost 15%,

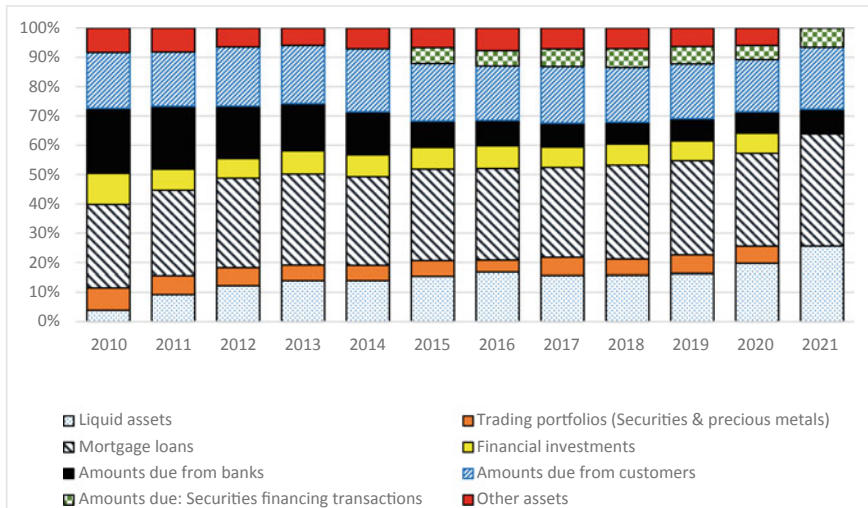


Fig. 3.5 Selected assets of banks in Switzerland: 2010–2021 (As a percentage of total assets) (Source Swiss National Bank, Selected Assets—Annual, <https://data.snb.ch/en/topics/banken/chart/babilaapouach> [Accessed on August 26, 2022]. *See Table 3.12 in Appendix for data by the year)

from slightly over 22% to about 7% of banks' assets. Swiss banks' deposits were reduced primarily due to increased market volatility and stricter regulatory requirements, particularly regarding capital adequacy. Worldwide, banks sought to mitigate risks by reducing their interdependencies and vulnerability to contagion from other financial institutions. Because interbank assets are the counterpart to interbank liabilities, this asset reduction was reflected *pari passu* with Swiss banks' liabilities.

Between 2010 and 2021, mortgage loans increased by approximately 43%, mainly due to:

1. Inexpensive real and nominal mortgage rates, which hovered between 1.3 and 1.4%;
2. Historically low returns on interest-bearing securities;
3. Real estate-related assets offering relatively safe returns. For decades, mortgages have been a dominant part of Swiss banks' assets.

Cantonal banks have been lending leaders in the mortgage area, responsible for slightly more than 37% (see Fig. 3.6). Big banks (26.9%) and Raiffeisen banks (about 18%) have also been heavy mortgage lenders. Since 2010, cantonal and Raiffeisen banks have increased their interest in mortgage lending, which contrasts with big banks and the regional and savings banks,

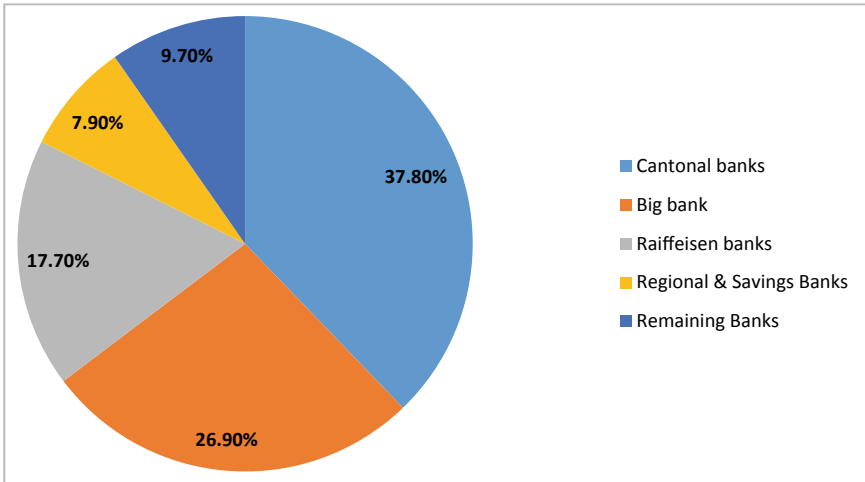


Fig. 3.6 Bank shares of the mortgage market: 2021 (Source Swiss Bankers Association, Swiss Banking: Banking Barometer 2022, Balance Sheet, Shares of Domestic Mortgage Market in 2021, <https://publications.swissbanking.ch/banking-barometer-2022/balance-sheet> [Accessed on August 30, 2022]. The original data is sourced from the Swiss National Bank)

causing a reduction in their market share. In 2021, nearly 93% of Switzerland’s domestic mortgage loans were classified as “senior,” reinforcing Swiss banks’ interest in using collateral to mitigate the risk on these loans.

Figure 3.7 shows that, in 2021, somewhat less than 90% of domestic Swiss franc credit was composed of mortgages and therefore secured by a down payment. Of the remaining loans, slightly more than 3% were secured, leaving less than 7% unsecured.

Swiss Banks’ on Balance Sheet Liabilities

Between 2010 and 2021, customer deposits (i.e., the sum of sight, time, and other customer deposits) accounted for between 51 and 67% of Swiss banks’ liabilities (see Fig. 3.8). A solid increase in sight deposits, from 21% of liabilities to 41%, more than offset the fall in time deposits. Sight deposits rose as a natural consequence of the nation’s recovery and sustained growth, along with the SNB’s expansionary monetary policies, which increased the nation’s monetary base and bank lending. The decline in time deposits resulted from Switzerland’s low nominal and real interest rates, providing a disincentive for savers to lock funds into low-yielding deposits for fixed periods. Liabilities among banks declined steadily from 2010 to 2021, from 16.4 to 13.4% of

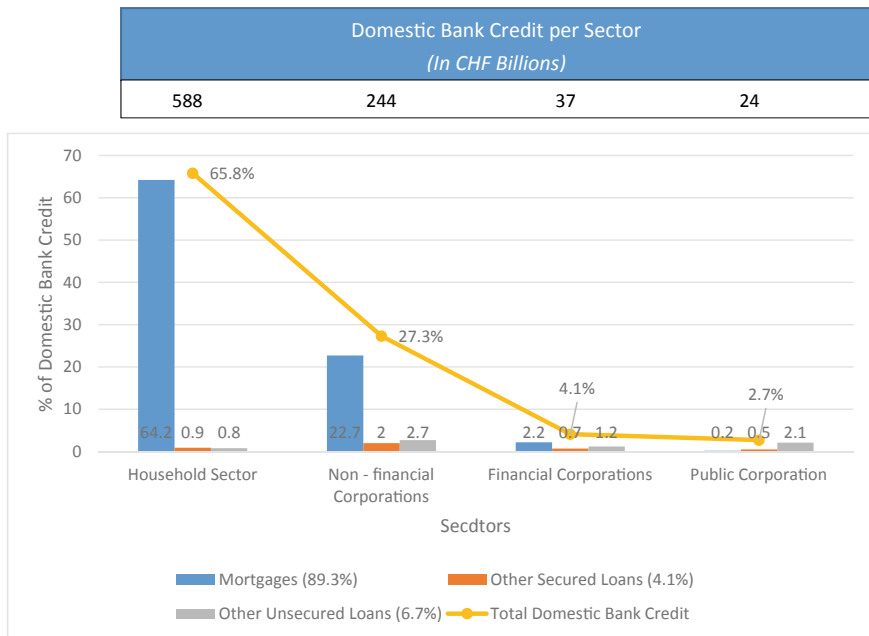


Fig. 3.7 Swiss Bank mortgages, secured loans, and unsecured loans: 2021 (Source Swiss National Bank, Financial Stability Report: 2021, Domestic Bank Credit by Type of Borrower and Loan, p. 32, https://www.snb.ch/en/i/about/pub/oecpub/id/pub_oecpub_stabrep [Accessed on August 30, 2022]. *See Table 3.13 in *Appendix* for data by the sector and type of domestic bank credit)

total liabilities, due to the general decline in interbank business, particularly with banks in Switzerland. Trading portfolio liabilities fell slightly, from 2% of total liabilities to 1%, mainly reflecting decreases in big banks' foreign liabilities.

Swiss Banks' Off-Balance-Sheet Assets and Liabilities

Swiss banks offer their domestic and foreign customers a variety of off-balance-sheet services. The main ones are asset management, fiduciary accounts, underwriting, brokerage, foreign exchange, and gold trading. Between 2010 and 2020, off-balance-sheet returns accounted, on average, for 63% of Swiss banks' net revenues (see Fig. 3.3). As a result of these services, the impact of Swiss banks on investment markets is more significant than their balance sheet totals imply.

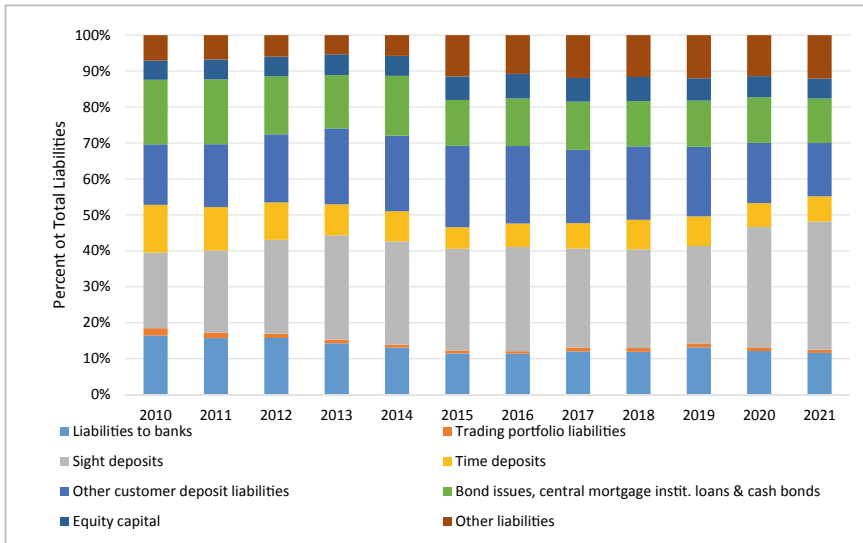


Fig. 3.8 Liabilities of banks in Switzerland: 2010–2021 (by bank category as a percentage of total liabilities) (Source Swiss Bankers Association, Swiss Banking: Banking Barometer 2022, Balance Sheet, Breakdown of Liabilities, <https://publications.swissbanking.ch/banking-barometer-2022/balance-sheet> [Accessed on August 30, 2022]. The original data is sourced from the Swiss National Bank. *See Table 3.14 in Appendix for data by the year)

Asset Administration/Management

Switzerland has developed a competitive advantage in private banking and asset management. In 2021, it was the world leader in cross-border wealth management,¹⁴⁰ with almost half of its managed assets originating abroad.

Switzerland's wealth management expertise has not come at the expense of providing highly efficient financial services to the domestic economy. Credit is readily available to individuals, companies, institutional investors, and public-sector entities. Looking to the future, if Switzerland's labor costs remain high relative to other countries, it will need to compete on the technological frontiers of finance, which will require risk capital in amounts comparable to (or exceeding) global competitors.

Unlike US and UK asset managers, who have focused on institutional investors, Swiss banks and investment specialists have concentrated on private customers (i.e., wealthy individuals), who require relatively higher levels of

¹⁴⁰ Swiss Bankers Association, Swiss Banking, Banking Barometer 2020, *ibid.*

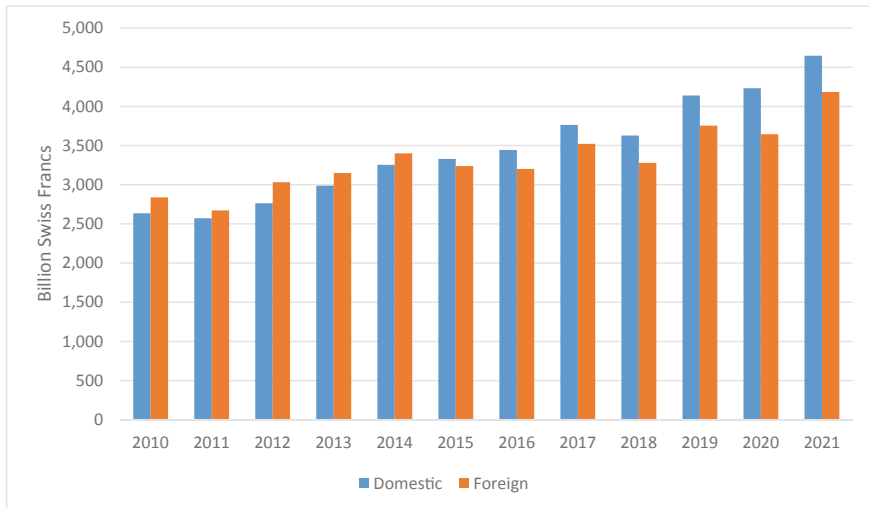


Fig. 3.9 Assets under Management of Banks in Switzerland: Domestic and Foreign: 2010–2021 (Billions of Swiss francs) (Source Swiss Bankers Association, Swiss Banking: Banking Barometer 2022, Assets under Management, <https://publications.swissbanking.ch/banking-barometer-2022/assets-under-management> [Accessed on August 30, 2022]. The original data is sourced from the Swiss National Bank. *See Table 3.15 in Appendix for data by the year)

customer service. Switzerland’s investment philosophy has been rather conservative, with a high priority put on capital preservation. Big Swiss banks have competitive strengths because of their branch networks, direct access to domestic and international exchanges, and underwriting power. Still, the smaller, private banks have been successful using their tradition, experience in personalized service, and discretion to compete.

Assets Under Management

Assets under management (AuMs) are the securities and precious metals that banks hold in custody accounts for their customers plus their fiduciary liabilities to customers. At the end of 2021, total AuMs were CHF 8,830 billion (see Fig. 3.9) with¹⁴¹:

¹⁴¹ Swiss Bankers Association, Swiss Banking, Banking Barometer 2022: Economic Trends in the Swiss Banking Industry, chrome-extension://efaidnbmnnnibpcjpcglclefindmkaj/https://www.swissbanking.ch/_Resources/Persistent/8/0/7/a/807a72b0e81bae717f0f94dd5777d5000e7a5951/SBA_Banking_Barometer_2022_EN.pdf (Accessed on August 30, 2022).

1. Securities holdings in bank custody accounts equaling CHF 7,937.8 billion¹⁴²;
2. Amounts due to customers, excluding sight deposits, totaling CHF 783.7 billion¹⁴³; and
3. Fiduciary liabilities equal to CHF 108.8 billion.¹⁴⁴

Between 2010 and 2021, Swiss banks' AuMs grew by approximately 4.4% per year, ending at CHF 8.8 trillion, with foreign AuMs growing at a yearly rate of less than four percent (i.e., 3.6%) and domestic AuMs growing by 5.3% (see Fig. 3.9). The increase in AuMs since 2010 has been due mainly to global economic and financial growth and Switzerland's relative stability in a volatile global marketplace.

For accounting purposes, Swiss banks' AuMs are measured in Swiss francs, but many customers' accounts, particularly foreign clients, are held in non-Swiss currencies, such as the US dollar and euro. Therefore, any Swiss franc appreciation reduces Swiss managers' AuM growth. Another major factor influencing Swiss banks' AuM growth has been stricter reporting requirements, particularly complying with the OECD's *AEOI* rules. Despite these factors, domestic and foreign AuMs grew by CHF 2.01 trillion and CHF 1.3 trillion, respectively, between 2010 and 2021.

Fiduciary Deposits

Fiduciary deposits are customer funds placed with banks in Switzerland and invested in the bank's name but with depositors remaining the ultimate beneficiaries and risk bearers. For this reason, they are neither assets nor liabilities of these banks. In 2005, fiduciary deposits equaled nearly CHF 380 billion and rose during the next two years to CHF 483 billion. From then on, fiduciary deposits fell progressively to CHF 4.9 billion in 2021. Figure 3.10 shows fiduciary deposits falling from 2005 to 2021 at a compound annual rate of almost 4%.

Swiss-franc-denominated fiduciary investments were a minority of total fiduciary accounts, varying from a low of 2% in 2018 to a high of 10% in 2019. The most popular currency was the US dollar, ranging in dominance from 44% (2008) to 79% (2018). The euro was the second most popular, varying from 6% (2018) to 38% (2008). Japanese yen and precious metals

¹⁴² Ibid.

¹⁴³ Ibid.

¹⁴⁴ Ibid.

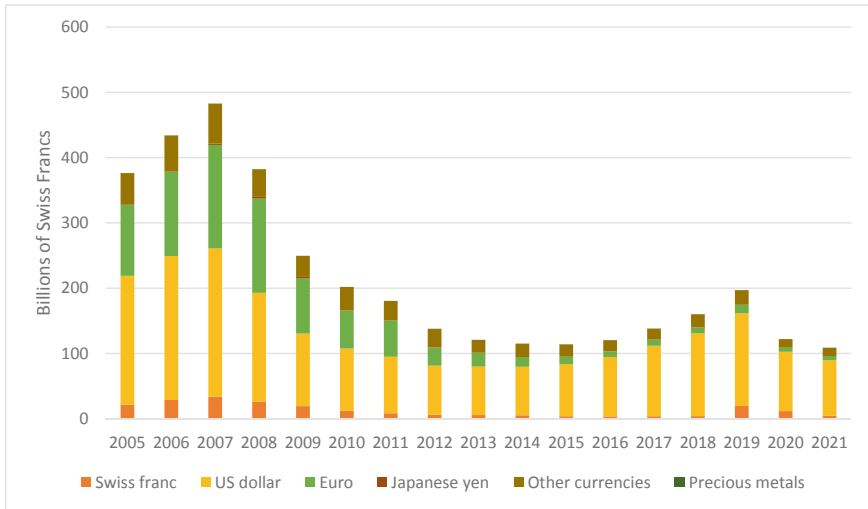


Fig. 3.10 Swiss fiduciary transactions by currency: 2005–2021 (billions of Swiss francs) (Source Swiss National Bank, <https://data.snb.ch/en/topics/banken/chart/batreuhwuach> [Accessed on August 29, 2022]. *See Table 3.16 in *Appendix* for data by the year)

never amounted to more than 1%, and the “other currencies” category ranged from 10 to 20%.

The sharp decline in fiduciary accounts between 2007 and 2008 reflected investors’ reaction to extremely low Swiss franc, US dollar, and euro interest rates and declining US dollar and euro exchange rate values. Because fiduciary funds are invested mainly in money market financial instruments, relative changes in short-term rates reduced the Swiss franc value of the US dollar and euro. In 2008, fiduciary funds managed by banks in Switzerland decreased by almost 21%, with Swiss franc and dollar funds falling by approximately 23% and 27%, respectively.¹⁴⁵ This trend continued into 2009 and cratered in 2015. In 2009, Swiss franc and dollar fiduciary accounts fell by more than 30%, while euro accounts fell by more than 41%.¹⁴⁶ Between 2007 and 2015, fiduciary funds fell by more than 76%.

Swiss financial intermediaries classified as “foreign banks” and “other banks” accounted for most fiduciary deposits. Foreigners favor these deposits because they are free from Switzerland’s 35% withholding tax (if invested outside Switzerland) because they are invested in the name of a bank

¹⁴⁵ SNB, Banks in Switzerland, 2008, June 18, 2009, https://www.snb.ch/en/mmr/reference/banks_2008_summary/source/banks_2008_summary.en.pdf (Accessed on August 24, 2022).

¹⁴⁶ SNB, Banks in Switzerland, 2009 – 2015 editions, June 14, 2010, https://www.snb.ch/en/mmr/reference/pre_20100617_2/source/pre_20100617_2.en.pdf (Accessed on August 24, 2022).

but at the client's risk. This tax treatment is consistent with the fundamental philosophy behind Switzerland's tax system, which does not apply the extra-territoriality concept.

Gold Trading

Swiss banks participate actively in the purchase and sale of gold. Gold exchanges can be physical (e.g., coins, ingots, and medals) or non-physical (e.g., futures, forward, and option contracts). The physical gold market is divided into primary and secondary categories. The primary market caters to the manufacturing industry and the secondary market to investors. Most wholesale trades are cleared through London, New York, and Shanghai, which accounts for about 90% of the over-the-counter (OTC) market.¹⁴⁷ Of the worldwide gold exchanges, the New York Commodity Futures Exchange (COMEX), Shanghai Gold Exchange (SGE), Shanghai Futures Exchange (SHFE), and Multi Commodity Exchange of India Ltd. (MCX) are the world's largest. Gold is also traded as securities backed by this precious metal.

The Zurich Gold Exchange was founded in 1968 by the Union Bank of Switzerland, Swiss Bank Corporation (SBC), and Credit Suisse. Its formation was a reaction to the UK's decision to temporarily close its gold window due to the US dollar crisis. The Zurich Gold Exchange snowballed, eventually capturing nearly 70% of the world market. This surge slowed and stopped abruptly between 1980 and 1986 when the Swiss government imposed a tax on these transactions. By 1987, Zurich's world position had fallen to 40%. Reinforcing this decline were conscious efforts of gold producers, such as South Africa and the former Soviet Union, to diversify their distribution channels. Since then, Switzerland's big banks have moved much of their gold trading from Zurich to London, where Zurich paired with New York to form a robust secondary market. While still a significant participant in the physical bullion trade, the Swiss gold market is a mere fraction of what it once was. In part, Swiss banks' comparative international advantage in gold bullion trading was based on specialized services in conjunction with Switzerland's banking confidentiality laws, but these protections have been weakened dramatically during the past half-decade—especially for non-Swiss residents.¹⁴⁸

¹⁴⁷ World Gold Council, Major Global Trading Hubs, Undated, <https://www.gold.org/gold-market-structure/global-gold-market> (Accessed on August 24, 2022).

¹⁴⁸ See Chapter 4: *Swiss Bank (Customer) Secrecy and the International Exchange of Information*.

Underwriting

The Swiss banks have underwriting and placement power in all major domestic and foreign (including euro)¹⁴⁹ bond and equity markets. Due to the nation's relatively low interest rates, liberal capital export policies, efficiency in underwriting, and ample placing power, Switzerland is among the leaders in placement activity.

The issue market for Eurobonds is fiercely competitive with narrow margins and high volumes. In general, competition has become so intense that these financial instruments are profitable only if attached to cross-currency swaps. Switzerland's high withholding taxes on domestic Swiss bond issues have created incentives to issue Swiss-franc-denominated securities in foreign nations (i.e., the euro-Swiss franc market). Investors have purchased Swiss franc-denominated assets (mainly short-term and medium-term) and avoided paying the relatively high (35%) Swiss withholding taxes. Because the SNB has not officially approved Swiss franc bonds issued abroad, there is no significant market for Swiss franc Eurobonds.

The Swiss capital markets are commonly used to raise funds for private companies, public authorities, and supra-national organizations, such as the World Bank. These service fees have contributed to Swiss banks' profitability without significantly changing their balance sheet ratios.

Derivatives

Derivatives are traded on exchanges and OTC markets, where Swiss banks often act as counterparties to their customers' transactions. Figure 3.11 shows that between 2005 and 2021, Switzerland's OTC derivatives market followed a roller-coaster path,

1. Increasing by 67% between 2005 and 2011, from CHF 31.8 billion to CHF 53.1 billion,
2. Falling by 54% between 2011 and 2015, from CHF 53.1 billion to CHF 24.6 billion,
3. Rising by 23% between 2015 and 2019, from CHF 24.6 billion to CHF 30.4 billion, and finally,
4. Falling by 11% in 2020 from CHF 30.4 billion to CHF 27.0 billion and 5% in 2021 from CHF 27.0 billion to 25.6 billion.

¹⁴⁹ In the "foreign bond market," non-Swiss companies issue Swiss-franc-denominated bonds in Switzerland. In the "Euromarket bond market," companies issue debt instruments denominated in currencies outside the country of issue (e.g., dollar bonds issued outside the US).

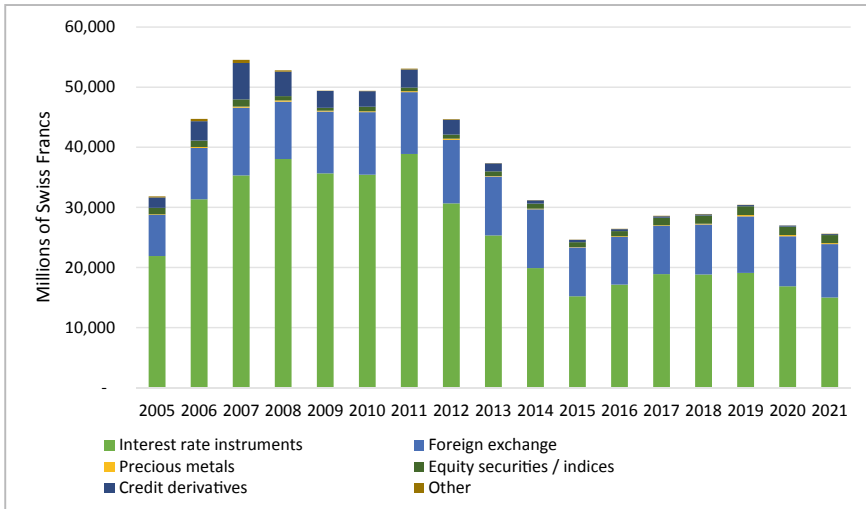


Fig. 3.11 Outstanding derivative financial instruments: 2005–2021 (Billions of Swiss francs) (Source Swiss Bankers Association, Swiss Banking: Capital Market Products, Outstanding Derivative Financial Instruments, <https://publications.swissbanking.ch/swiss-banking-trends-en/capital-market-products/> [Accessed on August 29, 2022]. The original data is sourced from Swiss National Bank. *See Table 3.17 in Appendix for data by the year)

Throughout these fifteen years, interest rate instruments comprised most derivative products (between 62 and 73%). The combination of interest rate- and foreign exchange derivatives accounted for between 85 and 95% of the total. Credit derivatives, such as credit default swaps, rose from 5% in 2005 to 11% in 2007 but fell dramatically to 0.6% in 2020. The early years' plunge was mainly due to volatility in the global financial markets between 2005 and 2009, due to the US-subprime mortgage breakdown, European debt crises, and their aftershocks. Throughout this period, equity derivatives were never more than about 5% of the total and fell as low as 1%. Together, precious metals and “other derivatives” never amounted to much more than about 1%.

Internationalization of Swiss Banks' Balance Sheets

Table 3.5 shows Swiss banks' international assets and liabilities as a percent of total assets and total liabilities as of June 2022. They ranged from 0.8% for regional and savings banks to 57.7% for big banks. International liability percentages ranged from 3.5% for regional and savings banks to 83.5% for branches of foreign banks (highlighted in Table 3.5).

Table 3.5 Assets and liabilities of banks in Switzerland: June 2022 (As a percent devoted to foreign business)

Financial institution	International assets as percent of total bank assets	International liabilities as percent of total bank liabilities	Net assets (+) /liabilities (–)
Cantonal banks	5.4%	14.2%	–8.8%
Big banks	57.7%	54.2%	+3.5%
Regional and savings banks	0.8%	3.5%	–2.7%
Raiffeisen banks	1.7%	8.1%	–6.4%
Stock exchange banks	51.7%	65.7%	–14.0%
Foreign banks	46.8%	70.1%	–23.3%
Foreign-controlled banks	51.6%	65.9%	–14.3%
Branches of foreign banks	31.2%	83.5%	–52.3%

Source Swiss National Bank, Monthly Banking Statistics, [https://data.snb.ch/en/warehouse/BSTA#!/cube/BSTA@SNB.MONA_U.BIL.AKT.TOT?dimSel=KONSOLIDIERUNGSSTUFE\(U\),INLANDAUSLAND\(T,A\),WAEHRUNG\(T\),BANKENGRUPPE\(G10,G15,G20,G25,G35,A25,G65,G70\)&fromDate=2021-09&toDate=2021-09](https://data.snb.ch/en/warehouse/BSTA#!/cube/BSTA@SNB.MONA_U.BIL.AKT.TOT?dimSel=KONSOLIDIERUNGSSTUFE(U),INLANDAUSLAND(T,A),WAEHRUNG(T),BANKENGRUPPE(G10,G15,G20,G25,G35,A25,G65,G70)&fromDate=2021-09&toDate=2021-09) (Accessed on August 29, 2022)

The most internationally active banks, measured by adding the percent of international assets to international liabilities, were stock exchange banks, big banks, foreign-controlled banks, foreign banks, and branches of foreign banks. Banks with the least overall global activity were regional and savings banks, Raiffeisen banks, and cantonal banks. Based on net international assets (i.e., international assets minus international liabilities), the “big banks” category was the only one in the positive range. A few relatively large cantonal banks have entered the international arena with inspired efforts to participate, but the overwhelming portion of their operations is still focused strictly on the cantonal level.

Table 3.6 shows that, from 2000 to 2021, Swiss financial institutions reduced their offices abroad marginally from 214 to 212. The most significant increases were foreign banks, a new category since 2015, which rose from 0 to 40 foreign offices, and stock exchange banks, which increased from 25 to 42 foreign offices. The most significant decreases were foreign-controlled banks, which fell from 80 to 40 foreign offices, and big banks dropped by 19, from 105 to 86. The decline for big banks was even more pronounced relative to 2010 when they had 144 foreign offices.

Table 3.6 Foreign offices of banks in Switzerland: 2000, 2010, 2020, and 2021

Financial institution	2000	2010	2020	2021
Cantonal banks	3	4	4	4
Big banks	105	144	98	86
Regional and savings banks	0	0	0	0
Raiffeisen banks	0	0	0	0
Stock exchange banks	25	40	40	42
Foreign banks ^a	NA	NA	45	40
Foreign-controlled banks	80	91	44	40
Branches of foreign banks	0	1	1	0
Private banks	1	4	0	0
Other banking institutions	0	0	0	0
Total	214	284	232	212

^aThis category was introduced in 2015

Source Swiss National Bank, Annual Banking Statistics, Offices, [https://data.snb.ch/en/warehouse/BSTA/cube/BSTA@SNB.JAHR_U.STK.GST?facetSel=toz_bsta_erhebung\(3267\)&dimSel=KONSOLIDIERUNGSTUFE\(U\),INLAND\(AUSLAND\(A\),GESCHAFTSSTELLEN\(T,SIT,FIL,VER\),BANKENGRUPPE\(A30,G10,G15,G20,G25,G35,G45,A10,A25,G65,G70,S10\)%26fromDate=2020%26toDate=2020](https://data.snb.ch/en/warehouse/BSTA/cube/BSTA@SNB.JAHR_U.STK.GST?facetSel=toz_bsta_erhebung(3267)&dimSel=KONSOLIDIERUNGSTUFE(U),INLAND(AUSLAND(A),GESCHAFTSSTELLEN(T,SIT,FIL,VER),BANKENGRUPPE(A30,G10,G15,G20,G25,G35,G45,A10,A25,G65,G70,S10)%26fromDate=2020%26toDate=2020) (Accessed on August 29, 2022)

Switzerland's Banking Categories

Switzerland has nine categories of banks: big banks, cantonal banks, regional and savings banks, Raiffeisen banks, stock exchange banks, other banking institutions, foreign banks, branches of foreign banks, and private banks.¹⁵⁰ Table 3.7 shows the relative size of these bank categories during the 2015 to 2021 period. From largest to smallest (rounded), big banks averaged 35% of the market, followed by cantonal banks (18%), stock exchange banks (11%), branches of foreign banks (11%), foreign-controlled banks (9%), other banks (8.5%), Raiffeisen banks (5%), regional and savings banks (2%), and private banks (less than 1%, at approximately 0.5%).

Big Banks

The big banks are private joint-stock companies and universal banking institutions, offering virtually all commercial banking and investment banking services, including capital market transactions, securities trading, money market transactions, financial engineering, securities lending, consulting services for company mergers and acquisitions, and the implementation of

¹⁵⁰ A category called “foreign banks” includes foreign-controlled banks and branches of foreign banks.

Table 3.7 Relative size of liquid assets for Switzerland's nine banking categories: 2015–2021 (as a percent of total liquid assets)

Year	Cantonal banks	Big banks	Reg. & savings banks	Raiffeisen banks	Stock exchange banks	Other banking inst's	Private bankers	Foreign-controlled banks	Branches of foreign banks
2015	17%	35%	1%	4%	11%	9%	0.6%	12%	11%
2016	16%	38%	2%	4%	12%	8%	0.5%	11%	9%
2017	18%	33%	2%	4%	13%	8%	0.5%	10%	12%
2018	18%	33%	2%	4%	14%	8%	0.5%	9%	12%
2019	19%	33%	2%	5%	10%	10%	0.4%	8%	13%
2020	21%	35%	2%	5%	10%	7%	0.4%	8%	12%
2021	18%	38%	2%	7%	9%	7%	0.4%	7%	10%
Average	18%	35%	2%	5%	11%	8.55%	0.45%	9%	11%

Source: Swiss National Bank, Annual Banking Statistics, Liquid Assets, [\(https://data.snb.ch/en/warehouse/BSTA/cube/BSTA@SNB_JAHR_K_BIL-AKT.FMI?fromDate=2015&toDate=2020&dimSel=KONSOLIDIERUNGSSTUFE\(K\),INLANDAUSLAND\(T\),WAEHRUNG\(T\),BANKENGRUPPE\(A30,G10,G15,G20,G25,G35,G45,A10,G65,G70\)\)](https://data.snb.ch/en/warehouse/BSTA/cube/BSTA@SNB_JAHR_K_BIL-AKT.FMI?fromDate=2015&toDate=2020&dimSel=KONSOLIDIERUNGSSTUFE(K),INLANDAUSLAND(T),WAEHRUNG(T),BANKENGRUPPE(A30,G10,G15,G20,G25,G35,G45,A10,G65,G70)) (Accessed on August 29, 2022)

these operations.¹⁵¹ Even though they dominate the Swiss banking industry, these banks do not rank among the largest 30 banks in the world. In 2021, UBS placed thirty-fourth on *Global Finance Magazine's* list of the world's largest banks, and Credit Suisse ranked fortieth.¹⁵² The largest banks were in China, the United States, Japan, France, and the UK.

Swiss banks ranked much higher, worldwide, as wealth managers, with UBS (Switzerland) AG's AuMs placing fourth, Credit Suisse fifth, Pictet (Switzerland) seventh, Julius Baer (Switzerland) thirteenth, and Lombard Odier (Switzerland) twenty-second.¹⁵³ Swiss banks also fared relatively better in terms of safety,¹⁵⁴ particularly cantonal banks, such as Zürcher Kantonalbank, which ranked second worldwide, Banque Cantonale Vaudoise eighteenth, and Banque Pictet and Cie twenty-sixth. UBS ranked thirty-seventh.¹⁵⁵ These safety rankings are in stark contrast to the 1990s when big Swiss banks ranked among the safest financial institutions in the world.¹⁵⁶

Figure 3.12 shows that the big banks' balance sheets are weighted toward amounts due from customers, mortgages, liquid assets, and their trading portfolios. The range of financial services the big banks offer is extensive and provides insight into why they are called "universal banks." Their product offerings include deposits, commercial and consumer loans, trade and project financing, mortgages, money market instruments, foreign exchange, factoring, forfeiting, and discounting. They also provide off-balance-sheet transactions, such as portfolio management, credit lines, stock issues, brokerage services, bond and note underwriting, leasing, security custody services, fiduciary accounts, precious metals trading, documentary credits, guarantees, and derivative (e.g., forward exchange) contracts. This array of financial services has created strong financial synergies, such as linkages to asset administration, trading, placing, and underwriting, and it has

¹⁵¹ Swiss National Bank, Notes—Banks, June 21, 2022, https://data.snb.ch/en/topics/banken/doc/epelanations_banken (Accessed on August 24, 2022).

¹⁵² David Sanders, World's Safest Banks 2021 – Biggest Banks, Global Finance, May 26, 2022, <https://www.gfmag.com/magazine/november-2021/worlds-safest-banks-2021-biggest-banks> (Accessed on August 25, 2022).

¹⁵³ Michael S. Fischer, World's 25 Biggest Wealth Management Firms by AUM: 2021, <https://www.thinkadvisor.com/2021/11/16/worlds-25-biggest-wealth-management-firms-by-aum-2021/> (Accessed on August 25, 2022).

¹⁵⁴ "Safety" in this survey was based on asset size and long-term foreign currency ratings issued by Fitch Ratings, Standard & Poor's and Moody's Investors Service. For more details, see David Sanders, World's Safest Banks 2021, November 4, 2021, <https://www.gfmag.com/magazine/november-2021/worlds-safest-banks-2021> (Accessed on August 25, 2022).

¹⁵⁵ David Sanders, World's Safest Banks 2021, Global Finance, November 4, 2021, Ibid.

¹⁵⁶ For example, see Ellen Memmelaar, "The World's Safest Banks," *Global Finance*, September 1994, pp. 98–110.

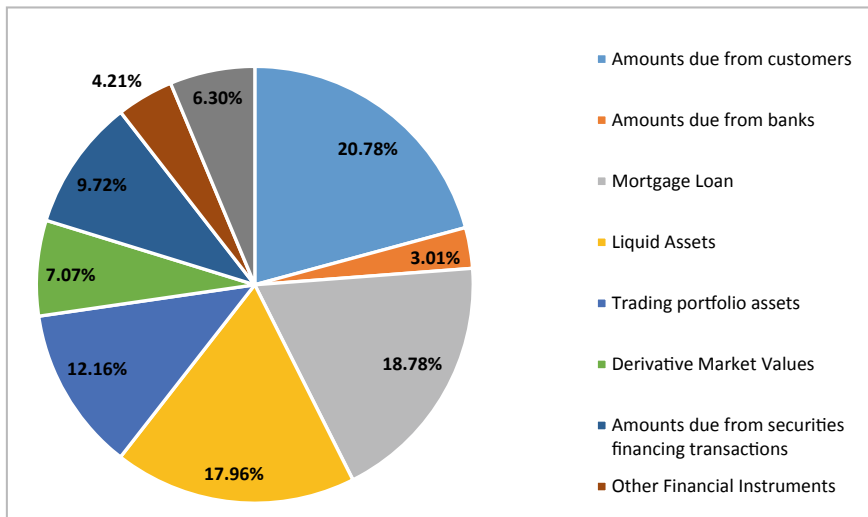


Fig. 3.12 Asset composition of the Big banks: 2021 (Source Swiss National Bank, Supplementary Data on Banking Statistics, [https://data.snb.ch/en/warehouse/BSTA/cube/BSTA@SNB.JAHR_K.BIL.AKT.FMI?facetSel=toz_bsta_bankengruppe\(begriff_bg_g15\)&dimSel=KONSOLIDIERUNGSSTUFE\(K\),INLANDAUSLAND\(A,T,I\),WAEHRUNG\(CHF,JPY,EUR,T,U,USD\),BANKENGRUPPE\(G15\)](https://data.snb.ch/en/warehouse/BSTA/cube/BSTA@SNB.JAHR_K.BIL.AKT.FMI?facetSel=toz_bsta_bankengruppe(begriff_bg_g15)&dimSel=KONSOLIDIERUNGSSTUFE(K),INLANDAUSLAND(A,T,I),WAEHRUNG(CHF,JPY,EUR,T,U,USD),BANKENGRUPPE(G15))) [Accessed on August 29, 2022])

allowed these financial institutions to reduce the variability of their earnings through diversification.

Within Switzerland, the big banks appear to be disconcertingly large when their total assets are compared to the nation's gross domestic product.¹⁵⁷ In 2021, UBS's and Credit Suisse's assets were approximately 590% and 480%, respectively, of Switzerland's nominal GDP.¹⁵⁸ By comparison, of the largest banks in the world, only the assets of Banco Santander in Spain (143%), BNP Paribas in France (116%), HSBC Holdings in the UK (110%), and Credit Agricole in France (104%) exceeded their nations' nominal GDP. The disproportionate size of Switzerland's big banks has caused significant concerns about the systemic financial risks that a failure of one or more might pose to the nation—and possibly the world.

Are the big Swiss banks “too big to fail?” This fear has led the nation's regulators to impose special reserve and liquidity requirements on these financial institutions. Before 1994, Swiss banks' accumulations of “hidden reserves” provided a buffer in case an economic or financial calamity caused bank assets

¹⁵⁷ Ibid. GDP data came from FRED Economic Data, St. Louis Fed, May 26, 2022, <https://fred.stlouisfed.org/> (Accessed on August 25, 2022).

¹⁵⁸ This comparison is representative and should be understood with the caveat that an asset is a stock variable while GDP is a flow variable.

to fall in value. In 1994, the Swiss Federal Banking Commission passed new accounting guidelines restricting their use so that bank gains and losses could not be camouflaged.

Before 2001, Credit Suisse and UBS were the only two financial institutions in Switzerland classified as “big banks.” Founded in 1856, Credit Suisse is the older of the two financial institutions, but since the 1998 creation of UBS via a merger of Union Bank of Switzerland and SBC, UBS has held the market leadership position when measured by balance sheet size and volume of business.

In May 2015, FINMA licensed UBS Switzerland AG as a new member of the “big bank” group, and in October 2016, Credit Suisse (Switzerland) Ltd. joined. This restructuring was part of FINMA’s “Too Big to Fail” recovery and resolution plans for systemically important financial institutions and part of the nation’s efforts to implement the Basel III regulations. The creation of two new banks enabled UBS AG and Credit Suisse AG to separate systemically important activities from the rest of their businesses.

UBS Switzerland AG was licensed to operate as a bank, securities dealer, and custodian bank, giving UBS AG the ability to transfer its retail, corporate, and asset management business to the new bank.¹⁵⁹ Similarly when Credit Suisse (Switzerland) Ltd. was licensed to operate as a bank, securities dealer and custodian bank, it did the same by transferring its Swiss retail and corporate customer businesses from the bank’s Swiss Universal Bank division to the new bank.¹⁶⁰

Cantonal Banks

A cantonal bank has at least one-third of its shares and votes controlled by the canton in which it resides.¹⁶¹ These banks can be established as public, semi-private, or private stock corporations. If they are established as public corporations, their respective cantons supply the share capital, which is sometimes increased by participation certificates, offering private investors the opportunity to own shares in a bank but without the benefit of voting rights. In 1907, cantonal banks formed the Association of Swiss Cantonal

¹⁵⁹ FINMA, Annual Report: 2005, p. 14, https://www.finma.ch/-/media/finma/dokumente/dokumentencenter/myfinma/finma-publikationen/geschaeftsbericht/20160407-finma-jb15.pdf?sc_lang=en (Accessed on August 25, 2022).

¹⁶⁰ FINMA, Annual Report: 2006, p. 15, https://www.finma.ch/en/-/media/finma/dokumente/dokumentencenter/myfinma/finma-publikationen/geschaeftsbericht/20170404_fin_jb16.pdf?la=en (Accessed on August 25, 2022).

¹⁶¹ KPMG, Swiss Federal Act on Banks and Savings Banks of November 8, 1934 (Status as of January 1, 2020), *ibid.*

Banks, promoting cooperation among its members and providing a united face externally.

At the end of 2021, Switzerland had 26 cantons and 24 cantonal banks, one for each of its cantons, except Solothurn and Appenzell Ausserrhoden. Solothurn privatized its cantonal bank in 1994, following a financial crash and costly acquisition of a local bank.¹⁶² Appenzell Ausserrhoden sold its bank to UBS in 1996. Currently, 16 of the 24 cantonal banks are public legal entities, six are mixed-stock companies (i.e., entities under special law), and two are private companies.

In general, cantons provide unlimited guarantees on the deposits of their cantonal banks. The only exceptions are the Banque Cantonale Vaudoise, which has no guarantee, and Banque de Genève, whose guarantee is limited. In October 1999, Switzerland's *BA* was revised, dropping the requirement for cantons, except those mentioned above, to provide full state guarantees for deposits.¹⁶³ Of all the cantons, only the Berner Kantonalbank chose to phase out its guarantee over three years.¹⁶⁴

Founded in the second half of the nineteenth century, cantonal banks have been closely tied to their regional areas' economic growth and development. During the nineteenth century, they invested heavily in Switzerland's industrialization, but today these banks operate more like savings and loan institutions, mainly financing mortgages. Their size varies considerably, with Zürcher Kantonalbank's assets exceeding CHF 192 billion.¹⁶⁵ Figure 3.13 shows mortgages' dominant role in cantonal banks' balance sheets.

In the past, cantonal banks escaped Swiss banking laws in several important ways. Because they did not need federal banking licenses to operate, cantonal banks were free from the rules of Swiss bank regulators, particularly concerning reserves and civil liabilities. As a result, their activities were not governed by the Federal Bank Commission (now called the FINMA), and bankruptcy proceedings could not dissolve them. Only the cantons could end them. With revisions of the *BA* in October 1999, supervision changed depending on the bank's legal structure, which means cantonal banks are no longer granted the freedom they once enjoyed.

The mandates under which cantonal banks were created have undermined, in part, their ability to compete against Switzerland's big banks. Earning

¹⁶² Peter Hänni, *The State and the Financial Industry in Switzerland*, April 2010, <https://www.cairn.info/revue-l-europe-en-formation-2010-4-page-111.htm> (Accessed on August 25, 2022).

¹⁶³ KPMG, *Swiss Federal Act on Banks and Savings Banks of November 8, 1934* (Status as of January 1, 2020), *ibid.*

¹⁶⁴ Swiss National Bank, *Notes—Banks*, *ibid.*

¹⁶⁵ Zürcher Kantonalbank, *Annual Report: Financial Year 2021, 2021*, <https://www.zkb.ch/en/home/investor-relations/annual-and-half-yearly-reports.html> (Accessed on August 25, 2022).

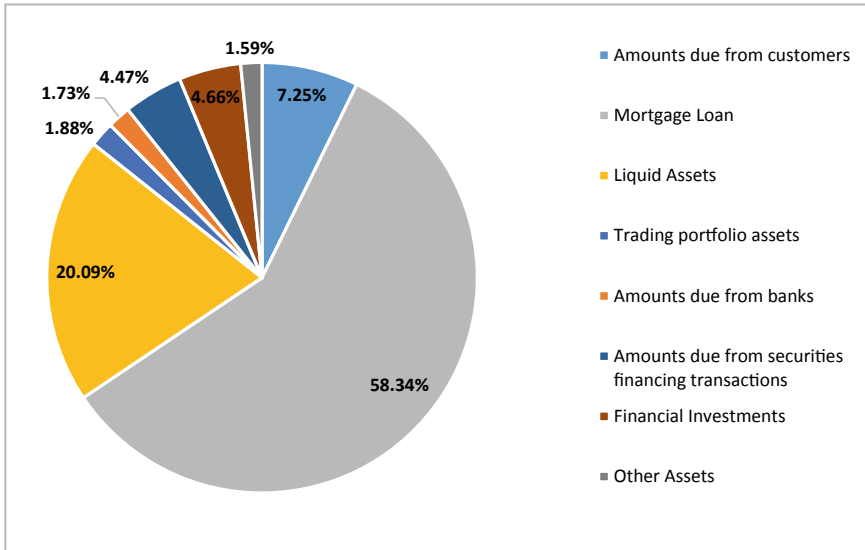


Fig. 3.13 Asset composition of Cantonal banks: 2021 (Source Swiss National Bank, Supplementary Data on Banking Statistics, [\[https://data.snb.ch/en/warehouse/BSTA/cube/BSTA@SNB.JAHR_K.BIL.AKT.TOT?facetSel=toz_bsta_bankengruppe\\(begriff_bg_g_20\\)&fromDate=2015&toDate=2020&dimSel=KONSOLIDIERUNGSSTUFE\\(K\\),INLANDAUSLAND\\(T,I,A\\),WAEHRUNG\\(T,CHF,EM,EUR,JPY,USD,U\\),BANKENGRUPPE\\(G10\]\(https://data.snb.ch/en/warehouse/BSTA/cube/BSTA@SNB.JAHR_K.BIL.AKT.TOT?facetSel=toz_bsta_bankengruppe\(begriff_bg_g_20\)&fromDate=2015&toDate=2020&dimSel=KONSOLIDIERUNGSSTUFE\(K\),INLANDAUSLAND\(T,I,A\),WAEHRUNG\(T,CHF,EM,EUR,JPY,USD,U\),BANKENGRUPPE\(G10\) \[Accessed on August 29, 2022\]\)](https://data.snb.ch/en/warehouse/BSTA/cube/BSTA@SNB.JAHR_K.BIL.AKT.TOT?facetSel=toz_bsta_bankengruppe(begriff_bg_g_20)&fromDate=2015&toDate=2020&dimSel=KONSOLIDIERUNGSSTUFE(K),INLANDAUSLAND(T,I,A),WAEHRUNG(T,CHF,EM,EUR,JPY,USD,U),BANKENGRUPPE(G10)

profits has always been an important goal for cantonal banks, but they also have complementary economic, social, and political objectives, among which are promoting home ownership, fostering new economic activities, encouraging thrift, and supporting cantonal economic growth.

Unlike the big (Swiss) banks, cantonal banks were often restricted from pursuing alternative profit-making activities. Still, they could compete with the big banks and other financial intermediaries by paying no taxes and offering deposits to customers backed by cantonal governments' full faith and credit. Today, the smaller cantonal banks focus primarily on savings and mortgage businesses, but the larger ones provide a complete range of services, making them virtually indistinguishable from larger universal banks.

After they outgrew the original objectives for which they were founded, cantonal banks (unfortunately) became frequent victims of political party objectives or vehicles for advancing politicians' careers. During the 1990s, calamities and abuses at cantonal banks, such as Berner Kantonalbank and Solothurner Kantonalbank, brought the concept of a "state-run bank" under

scrutiny.¹⁶⁶ The status quo of having politicians sit on cantonal banks' boards raised questions about the competencies required to guide banks' operations and strategies and who should be responsible for mistakes. These discussions led to the empowerment of cantonal banks by establishing themselves as public, semi-private, or private stock corporations.

Regional and Savings Banks

Regional and savings banks are in the same basic line of business as cantonal banks but typically restrict their activities to relatively small areas or selected geographic sections within Switzerland. They earn most of their net revenues from the spread between deposit and lending rates (e.g., mortgages and corporate loans), staying away from many off-balance-sheet, fee-generating activities in which big banks are engaged. Nevertheless, there has been a trend for these financial institutions to broaden their banking services.

Regional and savings banks have been among the most vulnerable segments of Switzerland's banking environment. Their numbers have dwindled because of their diminutive size, domestic orientation, and relatively high operating costs per transaction. In general, they are too small to take advantage of competitive economies of scale, offer too wide an array of services, and are excessively reliant on specific regions, leading to disproportionately high geographic risks. These disadvantages have become especially pronounced due to the heavy information technology costs connected to preventing the financing of terrorism and permitting money laundering activities. Between 2000 and 2020, regional and savings banks declined from 103 to 59 banks.¹⁶⁷ Many have been acquired—especially by the big banks. The FINMA recently urged regional banks to restructure themselves.

Regional and savings banks are mainly joint-stock companies, but a few have cooperative or other legal forms. Their sizes vary widely. Historically,

¹⁶⁶ A series of events in 1991 and 1992, involving excessive lending and lack of oversight, caused Berner Kantonalbank to suffer losses that required capital relief. These events led to an investigation into cantonal bank practices, procedures, and reporting. In 1995, Solothurn became the first canton to lose its cantonal bank due to mismanagement. SBC took over Solothurner Kantonalbank in 1994, but regulators forced SBC to sell the bank in 1998 to Baloise Holding as a prerequisite to receiving approval to merge with UBS. Baloise Holding acquired the bank from UBS in 2000. See Private Banking, Baloise Bank SoBa AG, Undated, http://www.privatebanking.com/user/extra_info.jsp?location_id=2271&category_id=1&account_id=12560&published=1&page_id=0&.rnd=976ab570dab247ef92486cd90013cfed (Accessed on August 25, 2022).

¹⁶⁷ Swiss National Bank, Annual Banking Statistics, Total Number of Regional Banks and Savings Banking Institutions in Switzerland from 2001 to 2020, June 16, 2022, <https://data.snb.ch/en/topics/banken/chart/bastrazbach> (Accessed on August 25, 2022).

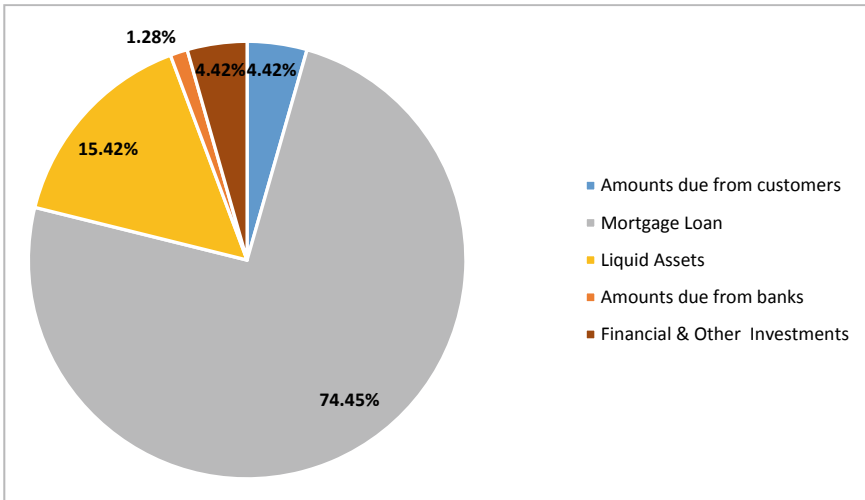


Fig. 3.14 Asset composition of regional and savings banks: 2021 (Source Swiss National Bank, Annual Banking Statistics, [https://data.snb.ch/en/warehouse/BSTA/facts?facetSel=toz_bsta_bankengruppe\(begriff_bg_g20\)](https://data.snb.ch/en/warehouse/BSTA/facts?facetSel=toz_bsta_bankengruppe(begriff_bg_g20)) [Accessed on August 29, 2022])

they have financed their activities with the deposits of local customers and have lent to support local home purchases. Figure 3.14 shows the composition of their assets in 2021, with the heavy concentration of mortgages and liquid assets.

In 1994, 98 of these financial institutions formed the Association of Swiss Regional Banks, called RBA Holding, to provide collective support and economies of scale for auditing, financial management services, inter-bank operations, and managing back-office business. These responsibilities were carried out by the three RBA Holding subsidiaries: RBA-Finance, RBA-Service, and RBA-Central Bank. Since 2018, the RBA has been operating under the name Entris Holding AG, which performs services for the affiliated regional banks within the Entris group, including reporting data for the “Minimum Reserves” survey.¹⁶⁸

In 2003, a group of small- and medium-sized regional and savings banks established Clientis Group, a legal community, liability association, and umbrella brand for member banks. It provides affiliates with a convenient way to exchange know-how and benefit from back-office synergies and services, such as refinancing, hedging, access to capital markets, IT, marketing, legal, compliance, risk management, marketing communication, and an ability

¹⁶⁸ Swiss National Bank, Notes—Banks, *ibid.*

to be rated by leading credit rating agencies.¹⁶⁹ Using Clientis, members' services are relatively homogeneous, reducing local competition via product differentiation.

In 2018, a new association called Verband Schweizer Regionalbanken (VSRB) was established by a large majority of the regional banks. Its purpose is to protect common interests and increase exchanges among members. VSRB does so through political discussions and consultations and by maintaining contact with important counterparties, such as government officials, the SNB, the SBA, and the FINMA. The Association also informs the public about association issues.¹⁷⁰

Raiffeisen Banks¹⁷¹

Traditionally, Raiffeisen banks have focused primarily on interest-income business by taking deposits from and making collateralized loans (mainly mortgages) to members (see Fig. 3.15). More recently, investment management has become a second important pillar of Raiffeisen's activities. In contrast to regional and savings banks, Raiffeisen banks have had remarkable success defending and growing their small market shares. Typically, they operate in small regional areas, where it is generally unprofitable for the larger banks to do business. Raiffeisen banks keep their costs low by practical means. Twenty years ago, Raiffeisen banks spread their wings, becoming increasingly active in the larger cities. Because they are the only group of Swiss banks structured as cooperatives,¹⁷² these financial institutions maintain their own legal identities but are supported and monitored by a central association, *Raiffeisen Switzerland Cooperative*. Whose liability pool guarantees all debts of its member banks, while the banks are jointly responsible for each other.¹⁷³

Membership in a Raiffeisen cooperative offers many benefits, including sharing operating tasks, reducing costs, distributing risks to the Association, and accessing broader pools of funds. The Association's job is to

¹⁶⁹ Clientis, Clientis' Service Center for Regional Banks, Undated, <https://www.clientis.ch/de/> (Accessed on August 25, 2022).

¹⁷⁰ VSRB, The Banking SMEs: The Regional Backbone, Undated, <https://www.regionalbanken.ch/der-verband/> (Accessed on August 25, 2022).

¹⁷¹ Named after F.W. Raiffeisen (1818–1888), Raiffeisen banks were founded in Switzerland at the beginning of the twentieth century. Raiffeisen was mayor of one of the poorest regions in Germany, an experience that engendered his intense interest in helping local farmers and peasants survive and prosper. In 1864, he founded the first banking cooperative in Anhausen, Germany, later serving as the prototype for Switzerland's Raiffeisen banking system.

¹⁷² Raiffeisen banks reinvest 100% of their profits (i.e., no profits are distributed).

¹⁷³ Swiss National Bank, Glossary, Undated, <https://www.snb.ch/en/srv/id/glossary#R> (Accessed on August 25, 2022).

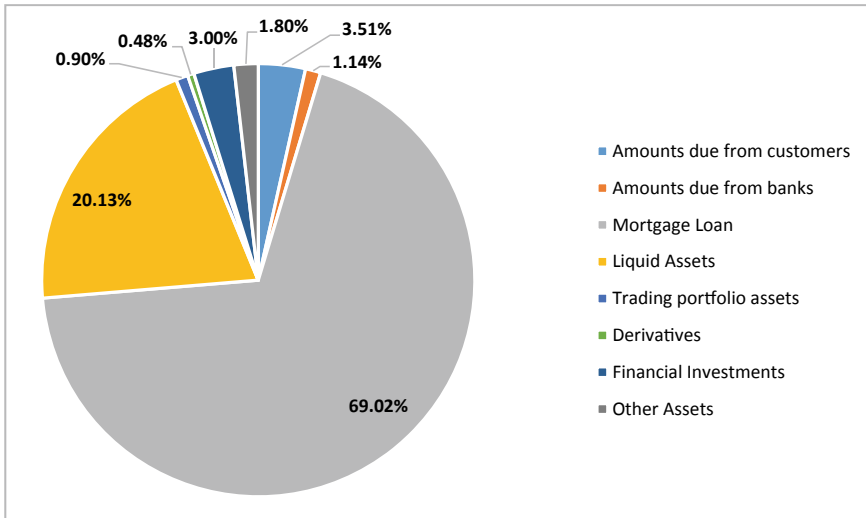


Fig. 3.15 Asset composition of Raiffeisen banks: 2021 (Source Swiss National Bank, Annual Banking Statistics, [https://data.snb.ch/en/warehouse/BSTA/facets?facetSel=toz_bsta_bankengruppe\(begriff_bg_g25\)](https://data.snb.ch/en/warehouse/BSTA/facets?facetSel=toz_bsta_bankengruppe(begriff_bg_g25)) [Accessed on August 29, 2022])

provide many of the banks' administrative tasks, such as liquidity management, risk management, equalizing cash and equity holdings, refinancing, and accounting, as well as providing research, marketing, and advice on matters relating to business management, information technology, investment counseling, personnel, and law. This way, members can take advantage of economies of scale and reduce costs below levels they could accomplish independently. To diversify away from the home mortgage market and reduce institutional risks, Raiffeisen banks have partnered with larger financial institutions, such as Mobiliar, for pension and insurance solutions, Vontobel and Leonteq for trading and investment services, and Viseca for consumer lending.

Stock Exchange Banks

Swiss stock exchange banks specialize in securities brokerage and asset management to enable and expedite security investments by private individuals and business entities—domestic and foreign. They are organized as private joint-stock companies, and their main sources of revenue are brokerage fees and interest on loans. Like other financial intermediaries, Swiss stock exchange banks are regulated by the FINMA and provide depositor

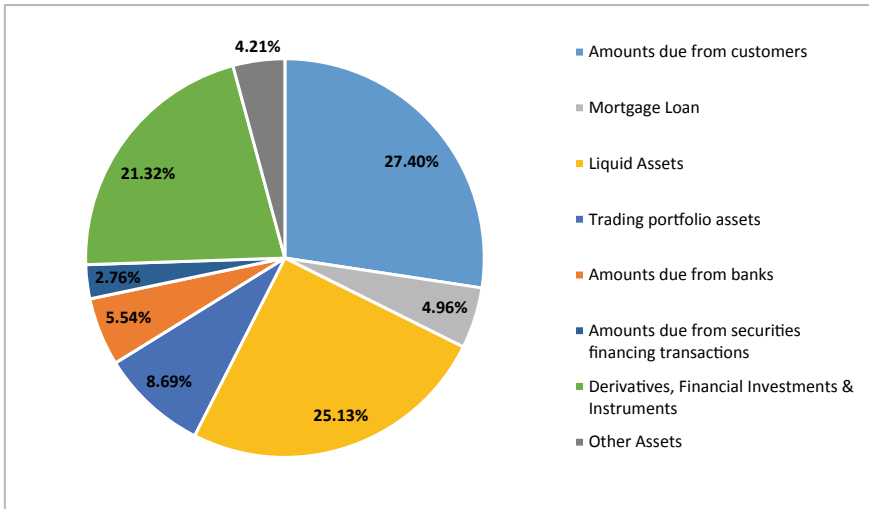


Fig. 3.16 Asset composition of stock exchange banks: 2021 (Source Swiss National Bank, Annual Banking Statistics, [https://data.snb.ch/en/warehouse/BSTA/facets?facetSel=toz_bsta_bankengruppe\(begriff_bg_g35\)](https://data.snb.ch/en/warehouse/BSTA/facets?facetSel=toz_bsta_bankengruppe(begriff_bg_g35)) [Accessed on August 29, 2022])

insurance through *esisuisse*.¹⁷⁴ In 1981, these banks formed the Association of Swiss Asset and Wealth Management Banks to represent members' joint interests.¹⁷⁵

Figure 3.16 shows the asset structure of Switzerland's stock exchange banks in 2021, with a relatively heavy emphasis on amounts due from customers (27.4%), liquid assets (25.1%) and derivatives, financial investments and instruments (21.3%).

Other Banking Institutions

Until 2014, the category called "other banks" included (1) stock exchange banks, (2) other banking institutions, and (3) foreign-controlled banks. Since then, this category has not been reported separately and replaced by a new category called "other banking institutions," which includes banks that do not fit neatly into any other category. In short, these financial institutions have no common service features or sizes.¹⁷⁶ "Other banking institutions"

¹⁷⁴ Swiss National Bank, Notes—Banks, *ibid*.

¹⁷⁵ Association of Swiss Asset and Wealth Management, Homepage, Undated, <https://www.vav-abg.ch/en/about-us/> (Accessed on August 25, 2022). Until 2014, this Association was called the Association of Swiss Commercial and Investment Banks.

¹⁷⁶ Swiss National Bank, Notes—Banks, *ibid*.

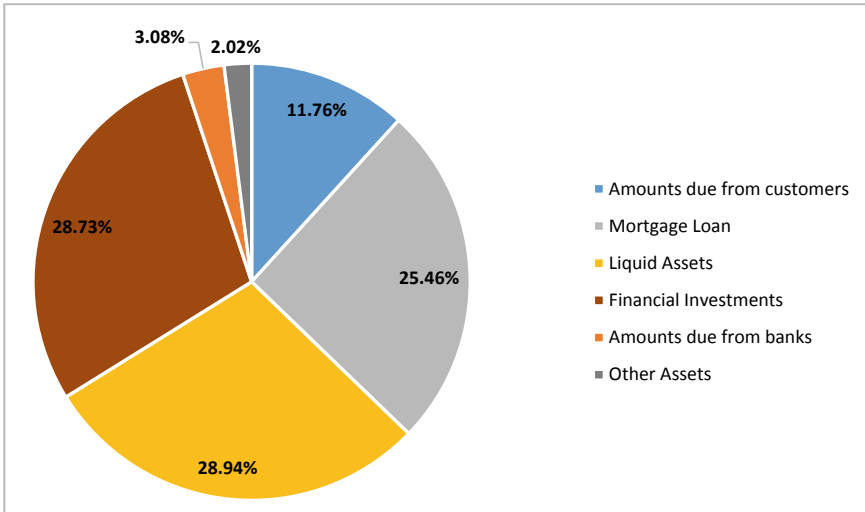


Fig. 3.17 Asset composition of “other banks”: 2021 (Not including foreign banks) (Source Swiss National Bank, Annual Banking Statistics, [https://data.snb.ch/en/warehouse/BSTA/facets?facetSel=toz_bsta_bankengruppe\(begriff_bg_g45\)](https://data.snb.ch/en/warehouse/BSTA/facets?facetSel=toz_bsta_bankengruppe(begriff_bg_g45)) [Accessed on August 29, 2022])

include commercial banks, investment management specialists, small credit institutes, and consumer credit banks. Figure 3.17 shows their average asset distribution, 29% of which is devoted to liquid assets, another 28% to financial investments with about 25% invested in mortgage loans.

Foreign-Controlled Banks

A Swiss bank is “foreign-controlled” if more than half its voting shares are owned, either directly or indirectly, by individuals or legal entities resident or domiciled abroad (Art. 3^{bis} para. 3 of the *BA*).¹⁷⁷ Under Swiss banking law, foreign-controlled banks have, essentially, the same rights and obligations as Swiss banks, but Swiss law permits them to practice in Switzerland only if their home countries offer reciprocal privileges to Swiss banks. Moreover, foreign banks must have names that do not suggest Swiss ownership and must obey the SNB’s credit and monetary policies. In 2020, Switzerland’s foreign-controlled banks employed 13,984 people.¹⁷⁸

¹⁷⁷ Ibid.

¹⁷⁸ Swiss National Bank, Key Figures for All Bank Categories, May 26, 2022, [https://data.snb.ch/en/topics/banken/cube/bastrbwa?fromDate=2000&toDate=2020&dimSel=D0\(D0_0,D0_1,D0_2,D0_3,D0_4,D0_5\),D1\(D1_8,D1_9\)](https://data.snb.ch/en/topics/banken/cube/bastrbwa?fromDate=2000&toDate=2020&dimSel=D0(D0_0,D0_1,D0_2,D0_3,D0_4,D0_5),D1(D1_8,D1_9)) (Accessed on August 25, 2022).

These financial institutions are organized as private joint-stock companies, operating as universal banks and functioning potentially in all financial fields but generally focusing on asset management or investment banking. As asset managers, foreign-controlled banks' customers are mainly foreign (i.e., non-Swiss residents). In 1972, they formed the Association of Foreign Banks in Switzerland, including foreign-controlled banks and branches of foreign banks.

Branches of Foreign Banks

Branches of foreign banks operate mainly in the investment banking area, but some perform asset management services for foreign customers, particularly clients from countries of origin. They tend to focus on portfolio management, a fee-generating activity that is not reflected fully in their balance sheets. These banks also account for a healthy share of Switzerland's fiduciary accounts, which offer substantial tax advantages for their home-country customers. In 2021, foreign banks controlled CHF 81.3 billion in fiduciary accounts, which was 75% of the total for Switzerland.¹⁷⁹

In contrast to foreign-controlled banks, which are independent legal entities, the legal status of foreign bank branches is subordinate to their parent companies. Nevertheless, they must have licenses to establish registered offices, branch offices, or agencies in Switzerland. In 1972, branches of foreign banks joined the Association of Foreign Banks in Switzerland. In 2020, they hired 1,161 full-time equivalent employees.¹⁸⁰

For the most part, branches of foreign banks focus on the financial needs of non-Swiss businesses and residents. They are in Switzerland mainly to follow their domestic customers' expansion into foreign countries. Many of these banks were established when Switzerland became a major international capital market during the 1960s. Before World War II, only a handful of foreign bank branches were in Switzerland, mainly from neighboring countries.

During the 1970s, excessive worldwide liquidity in Western developed countries created intense competition among the international lenders, which reduced spreads to paper-thin levels, rendering balance sheet-based business

¹⁷⁹ Swiss National Bank, Annual Banking Statistics, May 26, 2022, Fiduciary Assets, [https://data.snb.ch/en/warehouse/BSTA/cube/BSTA@SNB.JAHR_U.ABI.TRE.AKT?facetFilter=fiduciary&facetSel=toz_bsta_erhebung\(3267\)&dimSel=KONSOLIDIERUNGSSSTUFE\(U\),INLANDAUSLAND\(T,I,A\),WAEHRUNG\(T\),ENTGEGENGENOMMEN\(T,I,A\),BANKENGRUPPE\(A30\)&fromDate=1990&toDate=2020](https://data.snb.ch/en/warehouse/BSTA/cube/BSTA@SNB.JAHR_U.ABI.TRE.AKT?facetFilter=fiduciary&facetSel=toz_bsta_erhebung(3267)&dimSel=KONSOLIDIERUNGSSSTUFE(U),INLANDAUSLAND(T,I,A),WAEHRUNG(T),ENTGEGENGENOMMEN(T,I,A),BANKENGRUPPE(A30)&fromDate=1990&toDate=2020) (Accessed on August 25, 2022).

¹⁸⁰ Swiss National Bank, Key Figures for All Bank Categories, May 26, 2022, [https://data.snb.ch/en/topics/banken/cube/bastrbwa?fromDate=2000&toDate=2020&dimSel=D0\(D0_0,D0_1,D0_2,D0_3,D0_4,D0_5\),D1\(D1_8,D1_9\)](https://data.snb.ch/en/topics/banken/cube/bastrbwa?fromDate=2000&toDate=2020&dimSel=D0(D0_0,D0_1,D0_2,D0_3,D0_4,D0_5),D1(D1_8,D1_9)) (Accessed on August 25, 2022).

less attractive. Increasingly, these institutions sought to supplement interest-based income with off-balance-sheet revenues. A glance at Swiss banks' relatively healthy income statements induced many international banks to enter the Swiss markets. For some, the banking activities they conducted in Switzerland were restricted in their home countries. For these reasons, Japanese brokerage houses and banks were, until 1990, particularly prominent among the newcomers.

“Foreign Banks” ≡ “Foreign-Controlled Banks” Plus “Branches of Foreign Banks”

The category called “foreign banks” is a hybrid containing both “foreign-controlled banks” operating under Swiss law and “branches of foreign banks” operating in Switzerland. In general, they tend to be larger than regional or Raiffeisen banks. As Fig. 3.18 shows, about 75% of their assets were concentrated in liquid assets and amounts due from customers and banks in 2021.

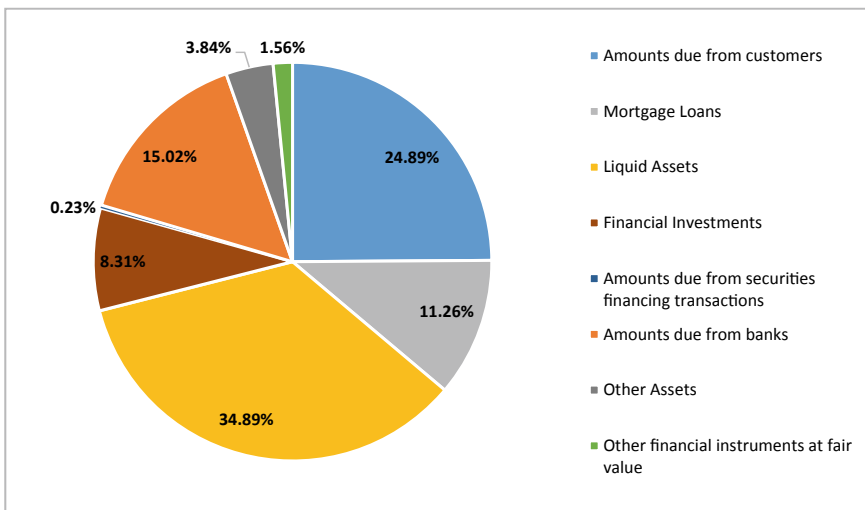


Fig. 3.18 Composition of foreign banks' assets: 2021 (Source Swiss National Bank, Annual Banking Statistics, [https://data.snb.ch/en/warehouse/BSTA/cube/BSTA@SNB.JAHR_K.BIL.AKT.FMI?facetSel=toz_bsta_bankengruppe\(begriff_bg_g20\)&dimSel=KONSOLIDIERUNGSSTUFE\(K\),INLANDAUSLAND\(T,I,A\),WAEHRUNG\(T,CHF,EUR,JPY,USD,U\),BANKENGRUPPE\(A25\)&fromDate=2015&toDate=2020](https://data.snb.ch/en/warehouse/BSTA/cube/BSTA@SNB.JAHR_K.BIL.AKT.FMI?facetSel=toz_bsta_bankengruppe(begriff_bg_g20)&dimSel=KONSOLIDIERUNGSSTUFE(K),INLANDAUSLAND(T,I,A),WAEHRUNG(T,CHF,EUR,JPY,USD,U),BANKENGRUPPE(A25)&fromDate=2015&toDate=2020)) [Accessed on August 29, 2022])

Private Bankers and Private Banks

A “private banker” is a person who forms a sole proprietorship, general and limited partnership, or partnership that is limited by shares. As a group, founders may be individually or jointly liable, but at least one company member must bear unlimited liability for the bank’s commitments. Private bankers are Switzerland’s oldest financial institutions, specializing in the administration and management of portfolios for both Swiss and non-Swiss clients. To this end, they conduct all types of security activities such as trading, underwriting, and placement.

Since 2002, “private bankers” have included only financial institutions that do not actively seek deposits from the public and, therefore, are not required to build reserves, report detailed business figures to the SNB, or publish either annual or interim financial statements. As a result, there are no firm estimates of their client numbers or business volume. Private bankers compete using confidentiality, investment management skills, and international reputations for their high-quality and individualized financial services (i.e., a family, office-type approach, offering a variety of individual services).¹⁸¹

Private bankers’ numbers have withered from 200, at the beginning of the century, to only five in 2022. The survivors are Rahn and Bodmer Co. (1750, Zurich), Bordier and Cie. (1844, Geneva), E. Gutzwiller and Cie. Banquiers (1886, Basel), Baumann and Cie. (1920, Basel), and Reichmuth and Co. (1998, Luzern).¹⁸²

A “private bank” is a corporation that focuses on asset management and investment advice for wealthy private clients. In contrast to a private banker, whose personal liability is unlimited, a private bank’s liability is limited by the legal form chosen.¹⁸³ As a group, private banks are misrepresented in the official statistics, showing assets of less than one percent of total Swiss bank assets. Based on these statistics, this sector would appear to be scarcely worth mentioning, but, in this case, appearances are deceiving. These banks punch above their weight in the international arena due to their extensive (off-balance-sheet) activities.

The Swiss Private Bankers Association was founded in 1934 to represent the private professional interests of Switzerland’s private bankers. Eighty years later, in 2014, the Association of Swiss Private Banks (ASPB) was formed to

¹⁸¹ Swiss National Bank, Notes—Banks, *ibid.*

¹⁸² Top-bank.ch, List of Private Banks and Private Bankers in Switzerland, <https://www.top-bank.ch/en/private-bank> (Accessed on May 27, 2022).

¹⁸³ René Bösch and Franziska-Geret, Banking Regulation in Switzerland: Overview, *ibid.*

represent a wider group of private bankers and stock exchange banks specializing in asset management. The ASPB was formed after four private bankers changed their legal classification to joint-stock companies on January 1, 2014, and became stock exchange banks.¹⁸⁴

Reichmuth and Co

One of the glaring facts emerging about Swiss private banks is the long hiatus of nearly 80 years between the creation of Baumann and Cie in 1920 and the founding of Reichmuth and Co in 1998. What significant obstacles inhibited the creation of a new private bank? Primary among the factors eroding these banks' numbers were the deaths of vital partners, stock exchange crashes, and severe restraints of low capitalization on their activities.

Reichmuth and Co. was not founded in Zurich, Geneva, or Basel, which are considered the centers of Switzerland's financial system. Instead, it began in Luzern, regarded as the heart of Switzerland because of its geographic proximity to Rütli, where the original three cantons formed Switzerland in 1291, and, therefore, its affinity with the hero Wilhelm Tell. The entrepreneur behind the venture, Karl Reichmuth, placed his savings and reputation on the line to start this bank, which may seem like standard fare for entrepreneurs in some countries, but, at the time, it was quite exceptional in Switzerland.¹⁸⁵

Portfolio Managers

Portfolio managers administer customers' portfolios through powers of attorney and may also offer trustee services, albeit working as a trustee requires a separate FINMA license.¹⁸⁶ Aside from their skills as investment managers, customers prize portfolio managers for their independence from other financial institutions and trust-based relationships. Portfolio management companies range from single-person establishments to family offices and asset management companies. The Swiss business newspaper *Finanz und Wirtschaft* reports that "they manage customer deposits in Switzerland and

¹⁸⁴ Swiss National Bank, Notes—Banks, *ibid.*

¹⁸⁵ Karl Reichmuth, Beat Kappler, Joachim Starbatty, and Uwe Wagschal, *Weg aus der Finanzkrise, Entscheid und Haftung wieder zusammenführen*, Zürich: Verlag Neue Zürcher Zeitung (2008).

¹⁸⁶ FINMA, Trustees, Undated, www.finma.ch/de/bewilligung/vermoegensverwalter-und-trustees/trustees (Accessed on August 25, 2022).

Liechtenstein of CHF 475 to 600 billion, corresponding to a market share of around 11%.”¹⁸⁷

Portfolio managers both compete and cooperate with banking institutions. To service clients, they rely on banks to implement portfolio decisions and administer basic services, such as custody, account management, and e-banking. Most banks have separate desks to deal with external asset managers (EAMs). Some portfolio managers are associated with banks’ private banking desks, but this is rare. Cooperation is not universal. Some banks in Switzerland strictly prohibit working with EAMs because their policies are to provide these services exclusively (i.e., through internal wealth managers).

Becoming a portfolio manager is a two-step process, requiring a positive review by and affiliation with one of five FINMA-approved supervisory organizations (Sos), and afterward, successful appraisal and licensure by the FINMA, which is based on financial, personnel, and organizational requirements.¹⁸⁸ Among the financial requirements are sufficient equity and securities. Personnel requirements include irreproachable business conduct, a good reputation, specialist qualifications, and relevant personal documents, such as passports, curricula vitae, and work certificates. Finally, organizational requirements take into consideration adequate internal controls and acceptable risk management systems and models.¹⁸⁹

The FINMA continues to inspect portfolio managers’ business plans, balance sheets, income statements, and equity requirements for up to three years after receiving licensure. After that initial phase, periodic inspections are the responsibility of the respective Sos. In mid-2020, 1,934 portfolio managers notified the FINMA of their intention to apply for licenses, but by mid-2022, only 317 of them had been approved.¹⁹⁰

¹⁸⁷ Monica Hegglin, Lädelersterben bei den unabhängigen Vermögensverwaltern, March 28, 2022, Finanz und Wirtschaft (Accessed on August 25, 2022).

¹⁸⁸ Switzerland’s *Financial Institutions Act (FinIA)*, which came into force on January 1, 2020, requires portfolio managers to have FINMA licenses. Ibid. FINMA, FINMA Guidance: 01/22: Timetable for the Licensing Process for Portfolio Managers and Trustees, May 4, 2022, https://www.finma.ch/-/media/finma/dokumente/dokumentencenter/myfinma/4dokumentation/finma-aufsichtsmitteilungen/20220504-finma-aufsichtsmitteilung-01-2022.pdf?sc_lang=en&hash=AE224914116FE127E6A82B6918B283EB (Accessed on August 25, 2022).

¹⁸⁹ These requirements can be found at Anonymous, Authorization Requirements for Portfolio Managers, December 1, 2020, *ibid.*

¹⁹⁰ Jean-Claude Spillmann, Swiss External Asset Managers—The Time to Act Is Now!, Julius Bär, July 1, 2022, <https://www.juliusbaer.com/de/business-navigator/regulierung/the-time-to-act-is-now/> (Accessed on August 25, 2022).

Mortgage Funding Institutes

Only two financial institutions are permitted to issue mortgage bonds in Switzerland, the Central Mortgage Bond Institute of the Swiss Cantonal Banks (Pfandbriefzentrale der schweizerischen Kantonalbanken AG, PBZ) and the Mortgage Bond Bank of the Swiss Mortgage Institutes (Pfandbriefbank schweizerischer Hypothekarinstitute, PBB). Both institutions are headquartered in Zurich, issue public bonds, and use the proceeds to refinance members' mortgage loans. Because mortgage funding is such a significant part of the Swiss financial markets, we will return to these two key financial institutions in Chapter 8: *Swiss Debt Markets*.

Conclusion

The challenges confronting Swiss financial institutions are faced by nations worldwide trying to attain a top spot among elite global competitors. Digitalization, access to foreign markets, sustainable finance, competitive tax rates, problematic interest rates, the risks of systematically important financial institutions, and paradigm-changing events are realities of the twenty-first century that will not fade soon. The structure of Switzerland's banking system has evolved to address these new realities and will continue to do so.

For many decades, Switzerland has had a global competitive advantage in delivering financial services, mainly due to its access to ample intellectual talent, world-class universities and research institutes, a growing spirit of entrepreneurship, and global trust in the Swiss franc. Crucial has been the nation's relatively stable political climate, moderate tax rates, and a legal system that upholds private property and rule-of-law. Together, these attributes have given official and unofficial certainty to businesses' and individuals' financial transactions. So long as the nation continues to maintain these fundamentals, the chances are high that it will adapt successfully to competitive challenges on the horizon.

Appendix: Data for Chapter Tables

See Tables 3.8, 3.9, 3.10, 3.11, 3.12, 3.13, 3.14, 3.15, 3.16, and 3.17.

Table 3.8 Assets of banks in Switzerland: 1990–2022 June (millions of Swiss francs) (Consolidation level: Parent company)

Year	Swiss Bank assets (<i>in CHF million</i>)
1990	1,036.05
1991	1,071.25
1992	1,106.61
1993	1,170.27
1994	1,179.38
1995	1,294.04
1996	1,471.40
1997	1,753.57
1998	2,023.35
1999	2,229.52
2000	2,107.94
2001	2,202.09
2002	2,233.64
2003	2,221.54
2004	2,484.72
2005	2,842.90
2006	3,221.23
2007	3,488.46
2008	3,124.42
2009	2,712.99
2010	2,755.85
2011	2,837.09
2012	2,857.49
2013	2,932.35
2014	3,130.86
2015	3,117.56
2016	3,205.81
2017	3,384.36
2018	3,377.00
2019	3,489.71
2020	3,683.55
2021	3,732.92
2022–June	3,754.14

Source Swiss National Bank, Monthly Banking Statistics, [https://data.snb.ch/en/warehouse/BSTA#!/cube/BSTA@SNB.MONA_U.BIL.AKT.TOT?fromDate=1987-09&toDate=2021-09&dimSel=KONSOLIDIERUNGSSTUFE\(U\),INLANDAUSLAND\(T\),WAEHRUNG\(T\),BANKENGRUPPE\(A40\)](https://data.snb.ch/en/warehouse/BSTA#!/cube/BSTA@SNB.MONA_U.BIL.AKT.TOT?fromDate=1987-09&toDate=2021-09&dimSel=KONSOLIDIERUNGSSTUFE(U),INLANDAUSLAND(T),WAEHRUNG(T),BANKENGRUPPE(A40)) (Accessed on August 26, 2022)

Table 3.9 Staff at banks in Switzerland (domestic): 2010–2021 (total staff and percent by bank category)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Big banks	39.9	39.7	39.3	37.3	36.1	35.8	34.5	24.9	24.1	22.8	23.2	22.9
Cantonal banks	17.4	17.4	17.4	17.2	17.1	17.3	17.3	17.3	17.3	17.6	17.9	18.1
Foreign banks	21.2	20.7	19.8	18.5	18.3	16.2	15.6	15.1	14.2	13.9	13.4	13.5
Stock exchange banks	9.1	9.6	8.6	9.3	12.6	12.5	12.9	13.4	13.7	13.6	13.7	13.8
Raiffeisen banks	8.1	8.2	8.2	8.3	8.4	8.8	8.9	9.1	9.2	9.3	9.5	9.7
Other banking institutions	3.5	3.6	3.5	7.0	7.1	7.9	7.8	7.7	7.7	7.9	8.1	8.3
Regional and savings banks	4.0	4.1	4.2	4.0	3.9	3.9	3.8	3.9	3.9	4.0	3.5	3.6
Private banks	4.8	4.8	4.2	4.2	0.6	0.6	0.5	0.5	0.5	0.5	0.6	0.6
Total	108.0	108.1	105.2	105.8	104.1	103.0	101.3	91.9	90.6	89.6	89.9	90.6

Source Swiss Bankers Association, Swiss Banking: Banking Barometer 2022, Number of Staff at Banks in Switzerland, Undated, <https://publications.swissbanking.ch/banking-barometer-2022/number-of-staff-at-banks-in-switzerland> (Accessed on August 30, 2022). The original data is sourced from the Swiss National Bank

Table 3.10 Net income by banking activity: 2005–2021 (percent and Swiss franc total)

Year	Profits (in CHF billions)				Total profits
	Result from interest operations	Result from commission business and services	Result from trading activities	Other result from ordinary activities	
2005	22.2	26.0	10.8	0	59.0
2006	22.1	31.7	13.8	0	67.6
2007	22.9	36.8	5.6	0	65.3
2008	21.4	30.0	−8.2	0	43.2
2009	19.4	25.8	3.5	0	48.7
2010	19.8	24.9	11.8	5	61.5
2011	20.8	23.6	8.7	6	59.1
2012	20.9	23.4	8.6	6	58.9
2013	22.2	24.5	8.3	5.8	60.8
2014	23.7	23.9	7.6	6.3	61.5
2015	24.8	22.4	8.6	8.9	64.7
2016	24.1	20.9	6.2	11.3	62.5
2017	24	21.7	7.7	9	62.4
2018	23.5	22	8.2	11.6	65.3
2019	23.8	22.4	7.4	12.5	66.1
2020	23.6	23	10.9	12.4	69.9
2021	23.8	25.5	7.7	13.9	70.9

Source Swiss Bankers Association, Swiss Banking: Banking Barometer 2022, Net Income, <https://publications.swissbanking.ch/banking-barometer-2022/net-income> (Accessed on August 30, 2022). The original data is sourced from the Swiss National Bank. Figures prior to 2011 come from Henri B. Meier, John E. Marthinsen, and Pascal A. Gantenbein, *Swiss Finance: Capital Markets, Banking, and the Swiss Value Chain*, John Wiley & Sons, 2012

Table 3.11 Portion of total bank assets by bank category: 2005–2021 (millions of Swiss francs) (Parent company perspective [survey: comprehensive year-end statistics])

Year	Regional						Branches				Total bank assets
	Cantonal banks	Big banks	& savings banks	Raiffeisen banks	Stock exchange banks	Other banking institutions	Private bankers	Foreign-controlled banks	of foreign banks		
2005	327.00	1910.45	83.88	108.19	106.07	3.43	17.21	228.23	17.43	2,801.86	
2006	343.08	2198.37	85.94	114.00	121.92	3.62	18.56	239.11	23.66	3,148.26	
2007	356.58	2341.14	85.31	123.08	144.64	7.18	29.51	288.80	34.44	3,410.68	
2008	389.32	1885.32	89.92	131.57	131.39	56.05	40.68	331.64	23.72	3,079.61	
2009	403.55	1444.80	92.28	139.52	138.42	58.74	39.21	327.81	23.89	2,668.22	
2010	421.55	1482.15	96.07	147.24	122.97	61.14	45.80	312.71	24.91	2,714.53	
2011	449.39	1466.70	101.12	155.89	137.25	65.72	54.40	305.70	56.81	2,792.97	
2012	482.28	1364.75	104.31	164.67	125.34	69.14	61.77	311.90	94.12	2,778.28	
2013	495.56	1322.28	106.43	173.62	139.99	188.31	65.64	278.69	78.65	2,849.16	
2014	522.63	1460.24	108.95	185.70	206.69	196.64	7.41	294.20	59.25	3,041.72	
2015	537.44	1424.23	113.08	202.41	210.05	198.58	6.70	260.96	72.67	3,026.12	
2016	533.23	1454.81	116.14	215.26	226.30	205.69	5.94	248.08	75.92	3,101.38	
2017	575.34	1566.44	118.13	225.25	223.99	209.47	6.20	231.30	93.32	3,249.44	
2018	600.32	1520.78	120.28	225.33	228.73	209.73	6.32	222.56	90.94	3,225.00	
2019	626.73	1540.71	126.32	248.35	223.69	223.74	5.75	224.18	98.15	3,317.62	
2020	697.08	1566.63	111.44	259.65	256.87	222.27	6.83	232.21	114.26	3,467.24	
2021	725.64	1578.05	117.96	284.48	269.69	234.07	7.32	249.00	121.54	3,587.80	

Source Swiss National Bank, Balance Sheet Total, Development by Bank category, <https://data.snb.ch/en/topics/banken/chart/balientb> (Accessed on August 26, 2022)

Table 3.12 Selected assets of banks in Switzerland: 2010–2021 (millions of Swiss francs)

Year	Trading portfolios										Amounts due:		Total assets
	Liquid assets	precious metals)	Mortgage loans	Financial investments	Amounts due from banks	Amounts due from customers	Securities financing transactions	Other assets	assets	assets			
2010	106.1	207.0	767.1	289.6	601.8	517.3	0.0	225.6	2,714.5				
2011	259.0	179.5	809.4	200.7	600.8	514.9	0.0	228.8	2,793.1				
2012	340.8	166.8	847.9	186.2	498.3	559.7	0.0	178.6	2,778.3				
2013	399.4	146.4	884.0	225.9	461.4	564.7	0.0	167.4	2,849.2				
2014	425.9	153.6	918.6	227.7	447.6	652.9	0.0	215.3	3,041.6				
2015	468.9	157.6	943.3	224.0	271.9	594.3	164.8	201.3	3,026.1				
2016	520.5	127.0	967.5	240.4	270.3	573.3	163.8	238.4	3,101.2				
2017	511.4	197.1	995.3	225.7	267.2	625.9	195.2	231.7	3,249.5				
2018	509.7	175.0	1031.8	231.9	241.4	601.3	207.2	226.8	3,225.1				
2019	542.9	207.9	1064.7	225.1	252.4	619.1	197.2	208.2	3,317.5				
2020	684.6	202.9	1098.0	238.2	253.3	617.6	166.8	205.9	3,467.3				
2021	760.6		1134.94		252.10	626.45	199.3						

Source Swiss National Bank, Selected Assets—Annual, <https://data.snb.ch/en/topics/banken/chart/babilaapouach> (Accessed on August 26, 2022)

Table 3.13 Swiss mortgages, secured loans, and unsecured loans: 2021

	Household sector	Non-financial corporations	Financial corporations	Public corporations	All sectors
Domestic Bank Credit	588	244	37	24	892
<i>(in CHF billions)</i>					
<i>(in percent)</i>	65.8%	27.3%	4.1%	2.7%	100%
• <i>Of which mortgages</i>	64.2%	22.7%	2.2%	0.2%	89.3%
• <i>Of which other secured loans</i>	0.9%	2%	0.7%	0.5%	4.1%
• <i>Of which other unsecured loans</i>	0.8%	2.7%	1.2%	2.1%	6.8%

Source Swiss National Bank, Financial Stability Report: 2021, Domestic Bank Credit by Type of Borrower and Loan, p. 32, chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.snb.ch/en/mmr/refere/nc/stabrep_2021/source/stabrep_2021.en.pdf (Accessed on August 30, 2022)

Table 3.14 Liabilities of banks in Switzerland: 2010–2021 (millions of Swiss francs)

Year	Liabilities to banks	Trading portfolio liabilities	Sight deposits	Time deposits	Other customer deposit liabilities	Bond issues,			Equity capital	Other liabilities	Total liabilities
						central	mortgage	instit. Loans & cash bonds			
2010	446.1	55.4	571.2	360.8	456.7	487.5	487.5	144.1	192.7	2,714.5	
2011	438.9	42.1	640.1	336	488.5	504.7	504.7	153.6	189.1	2,793	
2012	437.6	33.3	725.8	288.7	526.5	449.4	449.4	151.5	165.5	2,778.3	
2013	406.7	29	827.2	245.6	601.7	422.4	422.4	165.8	150.8	2,849.2	
2014	397.8	24	873.8	256.4	639.3	506.8	506.8	169.1	174.5	3,041.7	
2015	346.2	25.3	856.8	180.8	685.7	386.5	386.5	197.2	347.5	3,026.0	
2016	353	21.1	900.2	202.4	668.3	410.9	410.9	211.2	334.3	3,101.4	
2017	390.4	34.5	895.1	230.4	662.6	435.8	435.8	214.1	386.7	3,249.6	
2018	384.2	33.4	886.2	265.2	659.1	405.7	405.7	215.8	375.5	3,225.1	
2019	435.5	37.2	898.9	274.3	642.1	426.5	426.5	205.1	398.1	3,317.7	
2020	420.9	34.3	1161.6	230.4	582.1	439.2	439.2	203.3	395.4	3,467.2	
2021	415.6	32	1281	251.1	532.6	442.7	442.7	200.7	432.1	3,587.8	

Source Swiss Bankers Association, Swiss Banking: Banking Barometer 2022, Balance Sheet, Breakdown of Liabilities, <https://publicatiions.swissbanking.ch/banking-barometer-2022/balance-sheet> (Accessed on August 30, 2022). The original data is sourced from the Swiss National Bank

Table 3.15 Assets under Management of banks in Switzerland: domestic and foreign: 2010–2021 (billions of Swiss francs)

Year	Domestic	Foreign
2010	2,636.3	2,839.1
2011	2,572.7	2,672.4
2012	2,762.9	3,032.5
2013	2,988.7	3,149.3
2014	3,254.8	3,400.9
2015	3,329.7	3,238.6
2016	3,443.6	3,201.7
2017	3,764.1	3,522.6
2018	3,629.1	3,279.6
2019	4,139.3	3,754.2
2020	4,232.5	3,646.2
2021	4,646.9	4,183.3

Source Swiss Bankers Association, Swiss Banking: Banking Barometer 2022, Assets under Management, <https://publications.swissbanking.ch/banking-barometer-2022/assets-under-management> (Accessed on August 30, 2022). The original data is sourced from the Swiss National Bank

Table 3.16 Swiss fiduciary deposits by currency: 2005–2021 (billions of Swiss francs)

Year	Swiss franc	US dollar	Euro	Japanese yen	Other currencies	Precious metals	Total
2005	21.5	197.5	108.8	0.9	47.7	0.1	376.5
2006	28.7	220.6	128.8	0.9	55.0	0.1	434.1
2007	33.9	226.9	158.8	2	61.2	0.2	483
2008	26.2	166.8	144.4	2.7	42.4	0.1	382.6
2009	19.3	111.3	84.5	2.3	32.1	0.1	249.6
2010	12.3	95.3	58.3	0.7	35.2	0	201.8
2011	8.4	86.7	54.9	0.4	29.9	0	180.3
2012	6.0	75.4	27.7	0.4	28.2	0.1	137.8
2013	5.6	74.3	20.9	0.4	19.4	0	120.6
2014	5.3	74.5	14.6	0.2	20.5	0	115.1
2015	3.9	79.6	11.4	0.1	19.0	0.1	114.1
2016	3.6	91.0	8.7	0.2	16.9	0.1	120.5
2017	3.8	108.1	9.2	0.3	16.8	0.1	138.3
2018	3.9	127.0	8.8	0.4	19.9	0	160
2019	19.7	141.8	13.1	0.2	22.2	0	197
2020	11.8	90.8	7.3	0	12.2	0	122.1
2021	4.9	84.6	6.5	0	12.7	0.1	108.8

Source Swiss National Bank, <https://data.snb.ch/en/topics/banken/chart/batrehwuach> (Accessed on August 29, 2022)

Table 3.17 Outstanding derivative financial instruments: 2005–2021 (millions of Swiss francs)

Year	Interest rate instruments	Foreign exchange	Precious metals	Equity securities/indices	Credit derivatives	Other	Total
2005	21,902	6,835	99	1,077	1,727	197	33,842
2006	31,348	8,542	151	1,076	3,222	375	46,720
2007	35,312	11,269	193	1,204	6,051	514	56,550
2008	38,051	9,531	197	728	4,076	216	54,807
2009	35,653	10,298	140	469	2,815	28	51,412
2010	35,438	10,398	140	767	2,584	55	51,392
2011	38,894	10,270	175	592	3,019	126	55,087
2012	30,663	10,572	193	690	2,456	101	46,687
2013	25,334	9,793	96	766	1,330	50	39,382
2014	19,906	9,782	94	835	550	40	33,221
2015	15,210	8,130	73	790	383	48	26,649
2016	17,153	7,914	115	868	321	56	28,443
2017	18,903	8,009	107	1,267	241	64	30,608
2018	18,831	8,332	119	1,361	193	60	30,914
2019	19,098	9,396	218	1,482	185	39	32,437
2020	16,863	8,320	199	1,415	175	30	29,022
2021	14,999	8,884	160	1,354	148	68	27,633

Source Swiss Bankers Association, Swiss Banking: Capital Market Products, Outstanding Derivative Financial Instruments, <https://publications.swissbanking.ch/swiss-banking-trends-en/capital-market-products/> (Accessed on August 29, 2022). The original data is sourced from Swiss National Bank

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.





4

Swiss Bank (Customer) Secrecy and the International Exchange of Information

Introduction

The roots of Swiss banking secrecy can be traced back more than 300 years, to a time before the nation was founded, when Switzerland was just an assortment of loosely connected cantons,¹ and Geneva banks protected sizeable deposits of European aristocrats. Realizing the value of secrecy and the economic contributions of banks, in the early eighteenth century, the Great Council of Geneva imposed rules prohibiting the release of bank client information. Since then, Switzerland's banking secrecy practices have been shaped by three major forces:

- The nation's Constitution;
- Changes in domestic laws governing the disclosure of bank customer information; and
- A forceful international current toward transparency and the automatic exchange of information.

Switzerland's Constitution guarantees an individual's right to privacy, but the protection of information residing in banks is a bestowed entitlement with limits defined by Switzerland's civil and criminal laws. On the international level, other nations have pressured Switzerland to reveal information

¹ Switzerland's Federal Charter was signed in August 1291 and is the nation's oldest constitutional document. It united three cantons—Uri, Schwyz, and Unterwalden—in a defense agreement, following the opening of the Gotthard pass, which made these cantons strategic targets for the powers around them. Thereafter, other cantons joined this defense club, called the "Eidgenossenschaft."

on non-resident bank customers who are suspected of crimes, such as tax evasion and money laundering. Russia's invasion of Ukraine in February 2022 brought new challenges to Switzerland's neutrality policy. In a show of support for Ukraine, the Swiss government participated in internationally coordinated sanctions against Russia, both economic and financial. This decision will have interesting banking secrecy implications for the twenty-first century.

To some, Switzerland has been a brave international defender of privacy, which is a fundamental human right. To others, its defense of bank customers' secrecy has been interpreted as an unwillingness to join the global fight against illegal financial transactions. On a spectrum ranging from no disclosure to complete transparency, it is fair to say that, during the past 90 years, Switzerland has taken significant steps (legislative and private) to become more open and accommodating to official international requests for bank-held customer information. This chapter explains Switzerland's current banking secrecy status and its history of sharing confidential bank customer information with foreign nations.

Particular attention is paid to tax evasion because it has been one of the thorniest issues. The last significant remnant of Switzerland's banking secrecy protection for tax evaders from *developed nations* was removed in 2018 when the Swiss government exchanged its first batch of bank customer information under the OECD's *Multilateral Convention on Mutual Administrative Assistance in Tax Matters (AEOI or the "Convention")*.² The *Convention* requires banks to identify foreign account holders, collect internationally exchangeable information on them, and automatically report their findings to competent domestic tax authorities. After that, domestic tax authorities exchange this information with their counterparts in foreign participant nations. These exchanges include only clearly defined bank customer information, and to qualify as a participant in the *Convention*, countries must prove that their confidentiality and data protection safeguards meet OECD standards, which many *developing nations* have found challenging to do. Because information exchanges are multilateral and standards are enforced, no participant nation

² Organization for Economic Cooperation and Development (OECD), *The Multilateral Convention on Mutual Administrative Assistance in Tax Matters: Amended by the 2010 Protocol*: READ Online, 2011, https://read.oecd-ilibrary.org/taxation/the-multilateral-convention-on-mutual-administrative-assistance-in-tax-matters_9789264115606-en#page1 (Hereafter OECD, *Multilateral Convention on Mutual Administrative Assistance in Tax Matters*) (Accessed on August 30, 2022). The original *Multilateral Convention on Mutual Assistance in Tax Matters* was developed in 1988 by the OECD and the Council of Europe. It was amended twelve years later by the 2010 Protocol. This *Convention* is considered the most inclusive guide for multinational cooperation in the fight against tax evasion.

should have a banking secrecy advantage over another, forcing financial intermediaries to compete on the quality, quantity, and cost of their services. Acceptance of automatic information exchanges brought Switzerland into the mainstream of developed nations with rules to better fight illegal financial activities, particularly concerning the assessment and collection of taxes. As of February 2023, 99 jurisdictions had committed to participate in this agreement. Unfortunately, some of the most prominent nations, such as the United States and China, had not agreed.³

This chapter puts Switzerland's bank (customer) secrecy rights into a historical and contemporary perspective. It explains Switzerland's main bank secrecy pillars, the limits of bank customer privacy under Swiss laws, and how these limits have evolved. The chapter goes on to discuss the *Banking Act of 1934 (BA)*, which made the unauthorized disclosure of confidential bank customer information a federal crime. It then focuses on the international exchange of information, emphasizing on tax fraud, tax evasion, insider trading, market and price manipulation, money laundering, organized crime, financing terrorism, and corruption (bribery). The efforts and contributions of the Swiss Bankers Association, Swiss National Bank, Organization for Economic Cooperation and Development, and a host of other domestic and international groups are discussed. *Appendix 1* describes Switzerland's administrative, mutual, and judicial assistance in international tax matters. *Appendix 2* explains the history behind the passage and enactment of the *BA*, and *Appendix 3* ends the chapter by discussing Switzerland's dormant accounts controversy from 1947 to 2022.

Putting Swiss Bank (Customer) Secrecy into Perspective

Controversy over Swiss banking secrecy is not new to the worlds of finance, law, and ethics. During the past century, this debate has evolved and matured with the advent of rules and international agreements, as global financial systems have become increasingly more integrated. For many, it is difficult to draw a clear line between the myth and reality of Swiss banking secrecy. There is an adage that “things aren't like they used to be and never were.” For this reason, it is helpful to start with the facts, and, for this discussion, there are ten important ones to remember:

³ Deloitte, Perspectives: Implementation of the Multilateral Convention: Status of the Multilateral Convention, Undated, <https://www2.deloitte.com/global/en/pages/tax/articles/implementation-of-the-multilateral-convention.html> (Accessed on August 30, 2022).

1. Banking secrecy rules are not unique to Switzerland. Most nations require banks to protect the confidential information of their customers. On paper, the banking secrecy laws of other countries have been as strict as or stricter than Switzerland's. The difference has been Switzerland's proven willingness and ability to deliver on its promises to defend customer confidentiality.
2. Switzerland's *Constitution* guarantees an individual's right to privacy, but it does not guarantee (and has never guaranteed) the confidentiality of all personal information residing in banks. Banking secrecy is a bestowed entitlement with roots in the nation's civil, commercial, criminal, and banking laws. Because it is not a fundamental human right, there are (and have always been) exceptions to bank secrecy embedded in Swiss laws.
3. Switzerland did not pass privacy laws to protect or encourage illegal activities, such as tax evasion, money laundering, insider trading, corruption, or financing terrorism. Virtually all the significant changes in Swiss banking secrecy laws during the past 90 years have been designed specifically and intentionally to discourage and penalize criminal activities and protect potential victims.
4. Switzerland's customs, practices, and laws protect the confidentiality of information belonging to bank customers. They do not protect banks. Therefore, the term "banking secrecy" is a misnomer that more accurately should be called "protecting bank-customer confidentiality."
5. The confidentiality that Swiss banks owe to their customers has two essential parts. First is the legal requirement that banks and their employees keep client information confidential or risk criminal penalties, which could include fines or incarceration. The second part is who has access to the bank customer information and for what purposes.⁴ Switzerland has had strict rules on disclosure, access, and purpose.
6. Switzerland did not pass banking secrecy laws to inhibit the free flow of aggregated financial information. Regulating and monitoring banks and systemic financial risks can be done only if macro-level exposures are transparent and accurate, especially for multinational financial institutions. Therefore, Switzerland's banking secrecy laws do not give individuals and businesses the right to prevent their confidential information from being aggregated and reported externally by banks. Similarly, these

⁴ Katrin Eggenberger and Patrick Emmenegger, Economic Vulnerability and Political Responses to International Pressure: Liechtenstein, Switzerland and the Struggle for Banking Secrecy, *Swiss Political Science Review* 21:4 (2015), <https://onlinelibrary.wiley.com/doi/full/10.1111/spsr.12181> (Accessed on August 30, 2022).

rules do not give banks the right to refuse the disclosure of aggregated customer information.

7. Swiss democracy is based on a belief that the State exists for the people; people do not exist for the State. Individuals are presumed to have exclusive rights to their personal information, and its release is permitted by banks only if authorized by law and executed using formal and approved administrative or judicial procedures. Swiss laws do not empower banks to decide what information should or should not be disclosed.
8. Regarding Swiss numbered accounts, all bank accounts in Switzerland are numbered, but none is anonymous. To open a Swiss bank account, a depositor must provide proof of identity. A “Swiss numbered account” is nothing more than a regular bank account for which the owner’s name is known to a restricted number of bank employees. It exists mainly to protect the privacy of high-profile, easily identifiable individuals, such as entertainers, athletes, and politicians.
9. The relaxation of Swiss bank (customer) secrecy rules has only affected the confidentiality of foreign residents. Swiss residents’ protections have remained largely in force.
10. Finally, Swiss laws provide individuals with both substantive and procedural rights to privacy. Substantive rights reflect the protective content of Switzerland’s domestic laws and international treaties regarding essential fundamentals such as ownership, family, religion, occupation, and the protection of confidential information. Procedural rights are anchored in the process of exchanging information and reflect an individual’s right to be informed, participate, and be heard, as well as object to disclosures and appeal decisions.⁵

Historic Layers of Protection for Swiss Banking Secrecy

During most of the twentieth century and into the twenty-first century, discussions about Switzerland’s banking secrecy laws have been directed mainly at federal protections, initially included in the *BA*. Figure 4.1 shows that this *Act* is just one layer of protection that Switzerland has offered individuals to defend against unwarranted disclosures of private information. At the base of the pyramid are internal bank rules and cantonal laws, which existed long before the codification of federal regulations. Moving up the

⁵ Xavier Oberson, *International Exchange of Information in Tax Matters: Towards Global Transparency*, Edward Elgar Publishing Limited, 2015.

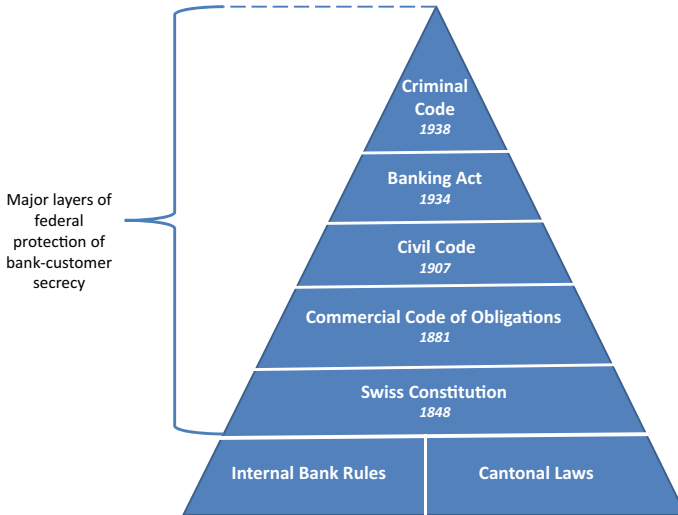


Fig. 4.1 Historic layers of privacy protection for Swiss residents (Source Authors' representation)

pyramid, there are multiple layers of federal protection, such as Switzerland's *Constitution*, *Commercial Code of Obligations*, *Civil Code*, *BA*, and *Criminal Code*. Covering this pyramid base is a blanket of legislative reforms and new acts that have affected Swiss banking secrecy practices.

Internal Bank Rules

Even without cantonal or federal rules to protect customer information, Swiss banks have always had stakes in doing so because the assurance of confidentiality is a vital product attribute in the financial industry. This feature heavily influences many customers' bank selection. Banks in countries located near Switzerland, such as Austria, Belgium, and Luxembourg, have long promised confidentiality to their customers, but none of them matched Switzerland's standard.

More than three centuries ago, Swiss banks had already developed a penchant for confidence and discretion when French kings used them as financiers. The spread of Swiss banks into the international arena reinforced the need to maintain customers' privacy. Swiss banks became well known for their consistent, persistent, and aggressive defense of confidential customer information from governments looking for ways to increase their tax bases and from the curious, covetous, and prying eyes of others, particularly for politically exposed people. They took their roles seriously as

trusted fiduciary agents and protectors of privacy. After decades of experience, Swiss banks earned worldwide trust and well-deserved reputations for steadfastly guarding customers' financial records and identities. Prudent and discreet money management practices enhanced Swiss banks' international competitive positions, combined with strident defenses of customers' privacy. They also had salubrious macroeconomic effects, such as encouraging foreign capital inflows, which supported the international value of the Swiss franc and kept the nation's inflation rates and interest rates relatively low.

Cantonal Laws

Switzerland was founded in 1291 when Schwyz, Uri, and Unterwalden, the three original Swiss cantons, agreed to a mutual protection pact against foreign aggression. For hundreds of years before (and after) the Confederation was created, the land regions that eventually became cantons enacted civil, commercial, and criminal laws to address social interactions. Among the civil and commercial rights written into cantonal laws were those addressing privacy. For example, the Great Council of Geneva, in 1713, required the maintenance of customer records but prohibited banks from disclosing customer information to third parties unless the Council approved its release. One problem with this system was that confidentiality rules and regulations differed by canton. As the Confederation grew in number, the resulting patchwork of privacy rules rendered the legality and enforceability of these rights problematic.

Swiss Constitution

In 1848, Switzerland placed its politically equal, autonomous cantons under a federal *Constitution*, which granted fundamental, inalienable rights to all individuals. Among them was the right to privacy of personal information. *Article 13 (Right to Privacy)* of the Swiss *Constitution* empowers individuals with the "right to privacy in their private and family life and in their home, and in relation to their mail and telecommunications."⁶ It also guarantees the "right to be protected against the misuse of their personal data."⁷ *Article 27 (Economic Freedom)* and *Article 94 (Principles of the Economic System)*

⁶ The Federal Council, Federal Constitution of the Swiss Confederation, April 18, 1999 (Status as of February 13, 2022), <https://www.fedlex.admin.ch/eli/cc/1999/404/en> (Accessed on August 30, 2022).

⁷ Ibid.

guarantee additional economic rights, such as choosing a profession, engaging in private activities, and abiding by “the principle of economic freedom.”⁸

Commercial Code of Obligations

Switzerland codified its *Commercial Code of Obligations* (CCO) in 1881.⁹ This *Code* includes five major divisions, which are General Provisions, Types of Contractual Relationships, Commercial Enterprises and the Cooperative, The Commercial Register, Business Names, and Commercial Accounting, and Negotiable Securities. Each division is general, leaving room for courts and scholars to update interpretations, to stay in step with a changing economic and social environment.

When a bank acts as a proxy or agent for a customer with confidential information, *Article 321a (Duty of Care and Loyalty)* of the CCO states that “[f]or the duration of the employment relationship the employee must not exploit or reveal confidential information obtained while in the employer’s service, such as manufacturing or trade secrets. He or she remains bound by such duty of confidentiality even after the end of the employment relationship to the extent required to safeguard the employer’s legitimate interests.”¹⁰

Privacy rights are also embedded in *Article 364 (Contractor’s Obligations: In General)* and *Article 398 (Faithful Performance)* of the CCO, which deal with contract law and agency relationships. They require contractors and agents to use “the same duty of care as the employee in an employment relationship.”¹¹ *Article 398* goes on to make agents “liable to the principal for the diligent and faithful performance of the business entrusted to him or her.”¹² Under the Swiss CCO, agency responsibilities must be conducted in person “unless authorized or compelled by circumstance to delegate it to a third party or where such delegation is deemed admissible by custom.”¹³

⁸ Ibid.

⁹ The Federal Council, Federal Act on the Amendment of the Swiss Civil Code (Part Five: The Code of Obligations) of March 30, 1911 (Status as of January 1, 2022), https://www.fedlex.admin.ch/eli/cc/27/317_321_377/en (Accessed on August 30, 2022).

¹⁰ Ibid.

¹¹ Ibid.

¹² Ibid.

¹³ Ibid.

Swiss Civil Code

In 1907, Switzerland added another formal layer of federal bank customer protection by codifying its *Civil Code*,¹⁴ which deals with individual rights, associations, and family matters, such as marriage, divorce, engagement, parental rights, guardianship, inheritance,¹⁵ debt collection, bankruptcy,¹⁶ spousal rights to financial information, death, succession, and property law. Common to each of these exempt areas is the inability of an aggrieved, legitimate third party to build a credible case without access to confidential bank information. In civil proceedings, the obligation of banks to testify in court varies by canton. Some cantons prohibit banks from testifying in these proceedings; others require it, and the rest leave this decision to judges' discretion.

Under Swiss civil law, every individual has a right to privacy concerning his or her personal records and economic background. *Article 2 (Scope and Limits of Legal Relationships)* of the *Civil Code* states that “[e]very person must act in good faith in the exercise of his or her rights and in the performance of his or her obligations,” and “[t]he manifest abuse of a right is not protected by law.” *Article 7 (General Provisions of the Code of Obligations)* reinforces *Article 2* by asserting, “[t]he general provisions of the Code of Obligations concerning the formation, performance, and termination of contracts also apply to other civil law matters.”

Article 28 (Against Infringements) of the Swiss *Civil Code* goes on to state that “[a]ny person whose personal rights are unlawfully infringed may petition the court for protection against all those causing the infringement,” and “[a]n infringement is unlawful unless it is justified by the consent of the person whose rights are infringed or by an overriding private or public interest or by law.”¹⁷ *Article 28a (Actions: In General)* grants any person whose privacy is violated the right to seek protection through a court to “(1) prohibit a threatened infringement; (2) order that an existing infringement cease; or (3) make a declaration that an infringement is unlawful if it continues to have an offensive effect.”

¹⁴ The Federal Assembly of the Swiss Confederation, Swiss Civil Code, January 1, 2021, https://fedlex.data.admin.ch/filestore/fedlex.data.admin.ch/eli/cc/24/233_245_233/20210101/en/pdf-a/fedlex-data-admin-ch-eli-cc-24-233_245_233-20210101-en-pdf-a.pdf (Accessed on August 30, 2022). The Swiss *Civil Code* was formally adopted in 1907 and went into effect in 1912.

¹⁵ Banks must report to the heirs of an estate but not to tax authorities.

¹⁶ Swiss bankruptcy attachment cases require banks to disclose requested information only after a seizure of assets order or bankruptcy declaration has been issued.

¹⁷ *Ibid.*

Article 28b (Violence, Threats, or Harassment) reinforces these protections by addressing protection from violence, threats, and harassment. *Articles 28g–28l* address an individual's privacy rights relative to the media. These confidentiality rights cover both the content of an individual's personal information and the identities of the counterparties with whom he or she interacts (e.g., a particular individual, bank, or broker).

Federal Act on Banks and Savings Banks (Banking Act of 1934—BA)

Passage and enactment of the *Federal Act on Banks and Savings Banks* (i.e., *Banking Act of 1934*)¹⁸ was a punctuating event in Switzerland's history because it explicitly linked violations of banking secrecy to the nation's criminal laws. *Appendix 2: History Behind the Banking Act of 1934* explains the Act's origin and the multifaceted relationships between Switzerland's internal and external politics. It also describes the financial, political, and economic uncertainty the nation faced due to (1) trade restrictions caused by the Great Depression, (2) turbulence in surrounding countries, (3) the overexpansion of credit by major Swiss banks to Germany, (4) efforts by European countries (particularly France) to increase their tax bases, (5) the rise of Adolf Hitler and his National Socialist Party, (6) the Basler Handelsbank Affair, and (7) Swiss Supreme Court sequestration decision.

In scope, *Article 47* of the *BA* protects the same basic privacy and agency rights as Switzerland's *Civil Code* and *Commercial Code of Obligations*, but it goes one step further by attaching the sanction of either imprisonment or fine to confidentiality infringements and by making breaches of the law a responsibility of the State to prosecute.¹⁹ By contrast, under civil law, the injured party must sue and prove damages, and, if the allegation is confirmed, punishment is limited to a fine.

The *BA* explicitly forbids bank executives, officials, employees, bank auditors, assistants to bank auditors, and employees of the Banking Commission from disclosing private information entrusted to a bank. It broadens the penalties to bankers who fail to protect confidential customer information. Violators who deliberately disclose secrets can be punished by prison terms

¹⁸ KPMG, Swiss Federal Act on Banks and Savings Banks, January 1, 2021, <https://assets.kpmg/content/dam/kpmg/ch/pdf/ch-banking-act-en.pdf> (Accessed on August 30, 2022). The original German version can be found at The Federal Council, Bundesgesetz über die Banken Und Sparkassen (Bankengesetz, BankG), August 1, 2021, https://www.fedlex.admin.ch/eli/cc/51/117_121_129/de (Accessed on August 30, 2022). Since its enactment, the *BA* has been amended seven times.

¹⁹ Under civil law, only simple damages can be recovered. There are no punitive damages imposed on the discloser.

of up to three years or fines as high as CHF 250,000. Those who enrich themselves by doing so could face as many as five years in prison.

Table 4.1 shows provisions in the most recent version of *Article 47* in the *BA*.

Table 4.1 Article 47: Swiss Federal Act on Banks and Savings Banks (*Status as of January 1, 2020*)

Paragraph	Provisions
1	Whoever intentionally does the following shall be imprisoned up to three years or fined accordingly: <ul style="list-style-type: none"> • disclose confidential information entrusted to them in their capacity as a member of an executive or supervisory body, employee, representative, or liquidator of a bank or a person in accordance with Article 1b, as member of a body or employee of an audit firm or that they have observed in this capacity • attempt to induce an infraction of the professional secrecy • disclose confidential information to third parties or use this information for their own benefit or the benefit of others
1 ^{bis}	Whoever enriches themselves or others with an action in accordance with (1)(a) or (c) shall be punished with imprisonment for up to five years or fined accordingly
2	Whoever acts in negligence shall be penalized with a fine of up to CHF 250,000
3	<i>Repealed by Annex Section 10 of the Financial Markets Infrastructure Act of June 19, 2015, with effect from January 1, 2016^a</i>
4	The violation of professional confidentiality shall remain punishable even after a bank license has been revoked or a person has ceased his/her official responsibilities
5	The federal and cantonal provisions on the duty to provide evidence or on the duty to provide information to an authority shall be exempted from this provision
6	Prosecution and judgment of offenses pursuant to these provisions shall be incumbent upon the cantons. The general provisions of the Swiss <i>Criminal Code</i> shall be applicable

^aThe Federal Council, Federal Act on Financial Market Infrastructures and Market Conduct in Securities and Derivatives Trading (Financial Market Infrastructure Act, FinMIA), August 1, 2021, <https://www.fedlex.admin.ch/eli/cc/2015/853/en> (Accessed on August 30, 2022)

Source Translations by the authors and from *Swiss Federal Act on Banks and Savings Banks* (Status as of January 1, 2020). Translated by KPMG at <https://assets.kpmg/content/dam/kpmg/ch/pdf/ch-banking-act-en.pdf> (Accessed on September 28, 2021). The original German version can be found at https://www.fedlex.admin.ch/eli/cc/51/117/_121_129/de (Accessed on August 30, 2022)

Swiss Criminal Code (SCC)

The *Swiss Criminal Code* (SCC) provides another layer of protection for the privacy rights of individuals.²⁰ Approved by a national referendum in 1938 and enacted four years later, the *SCC* brought uniformity to Switzerland's penal legislation by abrogating inconsistent laws. This *Code* incorporated banking secrecy violations as breaches of federal criminal laws.

Article 162 (Breach of Manufacturing or Trade Secrecy) of the *SCC* focuses on the non-bank portion of Switzerland's financial sector. It imposes a sentence not exceeding three years or a monetary penalty on anyone "who betrays a manufacturing or trade secret that he or she is under a statutory or contractual duty contract not to reveal." Because banks house private information, they are covered under the umbrella of *Article 321 (Breach of Professional Confidentiality)*, putting them in the same category of confidence and trust as clergy, lawyers, notaries, doctors, dentists, pharmacists, and midwives. Violators face custodial sentences not exceeding three years or monetary penalties. There is no statute of limitations on the enforcement of the *SCC*, which means it extends beyond an individual's employment contract, giving the State a right to prosecute violators after they have left their places of business or means of employment.

Inappropriate releases of confidential information could create criminal liability under the *SCC*. Specifically, *Article 158 (Criminal Mismanagement)* criminalizes the mismanagement of property and abuse of authority that cause a financial loss to a customer. *Article 273 (Industrial Espionage)* makes it a crime to release trade secrets to an "external official agency, a foreign organization, a private enterprise, or the agents of any of these, or, any person who makes a manufacturing or trade secret available to an official foreign agency, a foreign organization, a private enterprise, or the agents of any of these." In this respect, the *SCC* draws a link between disclosure of confidential domestic information and potential harm to the interests of Switzerland as a nation.²¹

²⁰ The Federal Council, Swiss Criminal Code of December 21, 1937 (Status as of January 1, 2012), <https://www.legal-tools.org/doc/8204e0/pdf/> (Accessed on August 30, 2022).

²¹ Michele Moser, Switzerland: New Exceptions to Bank Secrecy Laws Aimed at Money Laundering and Organized Crime, *Case Western Reserve Journal of International Law*, 1995, <https://scholarlycommons.law.case.edu/jil/vol27/iss2/4/> (Accessed on August 30, 2022).

International Exchanges of Confidential Bank-Customer Information in Criminal Proceedings

Illegal activities have never been protected by Switzerland's privacy laws, which is why banks are required to disclose customer information to authorities that are investigating suspected criminal behavior. As a result, it is not a confidentiality violation for employees of Swiss-domiciled banks to report (nationally and internationally) suspected illegal acts, but the trigger for such disclosures has been criminality under Swiss law. Misdemeanors are not prosecutable in Switzerland as criminal offenses. Money laundering and insider trading became crimes in 1990 and 1995, respectively, and in 1999, 2003, and 2012, the nation explicitly and formally criminalized bribery, financing terrorism, and tax evasion.

The significant areas of criminality that intersect with federal bank secrecy rules are tax fraud, criminal mismanagement, insider trading, bankruptcy, debt collection felonies, frauds against seizure, mismanagement, financing terrorism, unlawful association, money laundering, bribery, and corruption. When money laundering or terrorist financing, as defined under Swiss laws, is suspected, banks are required to report their suspicions to the Money Laundering Reporting Office of Switzerland (MROS),²² managed by the Federal Office of Police. "Reasonable suspicion" exists when the results of these clarifications fail to refute the suspicion that the assets are linked with a crime.²³

The MROS is charged with assessing reports of suspected money laundering, terrorist financing, criminal activities, and criminal organizations.²⁴ After making preliminary judgments about sufficiency of the evidence, the MROS forwards warranted cases to the appropriate law enforcement authorities. The MROS maintains an active database and a data processing system to combat money laundering. In addition to the MROS, the Swiss Federal Audit Office (SFAO) has a whistleblowing website for private individuals and federal employees to report suspicions of corruption within the administrative units of the Federal Administration.

²² Federal Office of Police Fedpol, Money Laundering Reporting Office Switzerland (MROS), <https://www.fedpol.admin.ch/fedpol/en/home/kriminalitaet/geldwaescherei.html> (Accessed on August 30, 2022).

²³ FINMA, Case Law and Practice for Reporting Requirements, <https://www.finma.ch/en/documentation/dossier/dossier-geldwaeschereibekaempfung/rechtsprechung-und-praxis-zur-meldepflicht/> (Accessed on August 30, 2022). Also, see *Articles 6 and 9 of the AMLA*, *ibid.*

²⁴ "Organized crime" includes gangs of drug traffickers, car thieves, check stealers, and arms dealers. The main fear is that, eventually, these organizations will interact seamlessly with Switzerland's legitimate economic, legal, and political systems.

The MROS is not an official police authority but rather an administrative unit with specific tasks for fighting money laundering, organized crime, and terrorist financing in Switzerland.²⁵ It helps banks identify evolving ways to combat illegal financial activities and publish annual statistics on its efforts. To foster the international exchange of information where money laundering, terrorist financing, and other financial crimes are suspected, the MROS is a member of the Egmont Group of Financial Intelligence Units, which is an international network dedicated to improving communication, sharing information, and training among financial intermediaries.²⁶

Tax Fraud

Tax fraud is the use of intentional deception (e.g., forgery or willful falsification of documents) to reduce an individual's withholding taxes, stamp duties, or customs duties. It violates *Articles 146 (Fraud) and 147 (Computer Fraud)* in the *SCC* and is fully prosecuted by Switzerland's federal criminal justice system. Access to bank-client information when there are suspicions of tax fraud supersedes the confidentiality protections offered by the *BA*.

Insider Trading

Swiss law defines "insider trading" as the disclosure of confidential information that "would significantly affect the prices of securities admitted to trading on a trading venue or DLT (distributed ledger technology) trading facility which has its registered office in Switzerland."²⁷ Examples of information having such importance are impending mergers, acquisitions, joint ventures, management changes, unexpected financial information, and patent approvals. Individuals possessing this information can derive pecuniary rewards or avoid losses by advantageously timing their buy and sell orders for tradeable shares, bonds, bills, notes, or derivatives. This offense is punishable under Swiss law at the administrative and criminal levels.

²⁵ Money Laundering Reporting Office Switzerland (MROS), *ibid.* The FINMA and the Federal Gaming Board (FGB) monitor financial intermediaries' compliance with due diligence obligations.

²⁶ *Ibid.*

²⁷ Financial Market Infrastructure Act (FinMIA), *ibid.* A DLT trading facility is "a commercially operated institution for multilateral trading of DLT securities that also meets one or more of the following (distinguishing it from a trading venue): (1) Admits natural persons and legal entities; (2) Provides central custody of DLT securities, and (3) Clears and settles transactions in DLT securities." See LOREZLEGAL, SCG Swiss Crypto Guide. DLT Trading Facilities, <https://www.swisscryptoguide.com/crypto-exchanges/dlt-trading-facilities/dlt-trading-facilities/> (Accessed on August 30, 2022).

Insider trading has a somewhat tumultuous history because, until 1995, it was not a crime under the *SCC*. Many foreign authorities (especially in the United States, where insider trading had been a crime only since 1988) were surprised when their information requests concerning suspected insider trading activities were met by a lack of understanding by Swiss bankers and authorities. The nation's dual criminality requirement bound Swiss bankers to secrecy, and the US Internal Revenue Service (IRS) was committed to uncovering tax evaders.

In 1982, the United States and Switzerland signed a non-binding *Memorandum of Understanding (MOU-1982)*, which opened the door to cooperation on this front.²⁸ *MOU-1982* regulated communications, opinions, and understandings between Swiss and US judicial authorities, thereby reducing differences of opinion, assuaging differences in law enforcement, and minimizing jurisdictional conflicts. It was also significant because the United States and Switzerland agreed to fight more effectively all forms of organized crime.

MOU-1982 remained in force until 1995 when sanctions covered by *Article 161^{bis}* of the *SCC* were replaced by *Article 46* of the *Federal Act on Stock Exchanges and Securities Trading (Stock Exchange Act, SESTA)*, which made insider trading a crime in Switzerland.²⁹ Doing so aligned Switzerland with virtually every country in the OECD that had legislatively tried to stop these activities. By making insider trading a per se violation of its criminal law, Switzerland empowered foreign authorities seeking administrative and judicial assistance in their criminal investigations. As a result, banks could disclose their suspicions of insider trading without violating federal bank-secrecy laws.

On September 28, 2012, *Article 161* was repealed (with effect from May 1, 2013), once again, when *SESTA* was expanded to include shares in companies with registered offices outside Switzerland and made insider trading a crime

²⁸ The United States Securities and Exchange Commission and The Government of Switzerland, Memorandum of Understanding, August 31, 1982, https://www.sec.gov/about/offices/oia/oia_bilateral/switzerland.pdf (Accessed on August 30, 2022).

²⁹ Market and price manipulation laws were transferred to *SESTA* at the same time. The Federal Council, Botschaft Zur Änderung des Börsengesetzes (Börsendelikte und Marktmissbrauch), August 31, 2011, <https://www.fedlex.admin.ch/eli/fga/2011/1111/de> (Accessed on August 30, 2022). The Federal Assembly of the Swiss Confederation, Federal Act on Stock Exchanges and Securities Trading (Stock Exchange Act, *SESTA*) Unofficial Translation, May 1, 2013, <https://www.readkong.com/page/federal-act-on-stock-exchanges-and-securities-trading-1523933> (Accessed on August 30, 2022).

for all market participants.³⁰ Violations that earn insiders more than CHF 1 million were made felonies.

Before the 2012 repeal, insider trading laws were limited to individuals and legal entities over which FINMA exercised regulatory oversight. Afterward, and following the creation of Switzerland's *Stock Exchange Ordinance*, FINMA (and its predecessor, the Swiss Federal Banking Commission) revised its circular on market conduct rules. It also extended the regulation of securities trading on Swiss trading venues to securities and derivatives in the Swiss primary-, foreign-, commodity-, foreign exchange-, interest rate-, and other benchmark-related markets.³¹ The new rules allow FINMA to act against all individuals and legal entities using insider information, engaging in market manipulation, or misusing primary markets with foreign securities or on other markets. FINMA can also request and exchange data with foreign supervisory authorities on alleged market abuses and suspected violators.

SESTA's Articles 2 (Definitions), 33e (Exploitation of Insider Information), and 40 (Exploitation of Insider Information) clarified the definition of "insider information," what constitutes a violation, and the penalties. Depending on the severity, violations were made punishable by imprisonment from one to five years or an appropriate fine. *Article 40* also explains that the securities covered by the law only need to be admitted for trading on a Swiss Exchange rather than formally listed, and prosecution depends on violators earning pecuniary rewards.

Article 40 covers three types of potential offenders: primary insiders, secondary insiders, and tertiary insiders.³² Primary insiders are those who have access to insider information due to the nature of their activities, such as executive members of an issuer, a company that controls the issuer, or a firm controlled by the issuer. Secondary insiders obtain their information either from primary insiders or by committing a felony or misdemeanor. Finally, tertiary insiders get confidential information in other ways and use it to earn pecuniary rewards. Before *SESTA's Article 40*, tertiary insiders were not considered potential offenders.

³⁰ Any exceptions were identified in the Stock Exchange Ordinance. Alexander Vogel, Andrea Sieber, Debora Durrer, and Meyerlustenberger Lachenal, Recent Changes to the Swiss Regulatory Rules on Market Abuse and Takeovers, Thomson Reuters Practical Law, October 1, 2013, <https://mll-legal.com/publications/recent-changes-to-the-swiss-regulatory-rules-on-market-abuse-and-takeovers/?lang=en> (Accessed on November 18, 2021).

³¹ FINMA, Circular 2013/8 Market Conduct Rules Supervisory Rules for Market Conduct in Securities Trading, August 29, 2013, <https://www.six-group.com/dam/download/sites/education/preparatory-documentation/trading-module/finma-market-conduct-rules-en.pdf> (Accessed on August 30, 2022).

³² Alexander Vogel, Andrea Sieber, Debora Durrer, and Meyerlustenberger Lachenal, Recent Changes to the Swiss Regulatory Rules on Market Abuse and Takeovers, *ibid.*

On June 19, 2015, the Swiss Federal Assembly adopted the *Federal Act on Financial Market Infrastructures and Market Conduct in Securities and Derivatives (Financial Market Infrastructure Act, FinMIA)*, which came into force the last day of the year.³³ Following on the heels of the US Great Recession and European debt crises, this *Act* was intended to reduce systemic counterparty and operational risks and help stabilize the Swiss financial system. *Article 142 (Exploitation of Insider Information)* and *Article 154 (Exploitation of Insider Information)* of the *FinMIA* focus on the misuse of insider information. Both articles have been amended to include DLT platforms. Penalties in *Article 154* include incarceration from one to five years or an appropriate fine. One significant difference between the two is that *Article 142* is an administrative violation that does not require a pecuniary reward for the information disclosure. In contrast, *Article 154* is a criminal violation that imposes penalties only after such gains have occurred.

Art. 142 Exploitation of Insider Information

Any person who has insider information and who knows or should know that it is insider information or who has a recommendation that they know or should know is based on insider information shall behave inadmissibly when they:

- a.⁶⁴ exploit it to acquire or dispose of securities admitted to trading on a trading venue or DLT trading facility which has its registered office in Switzerland or to use derivatives of such securities;
- b. disclose it to another;
- c.⁶⁵ exploit it to recommend to another to acquire or dispose of securities admitted to trading on a trading venue or DLT trading facility, which has its registered office in Switzerland or to use derivatives of such securities.

⁶⁴Amended by No I 10 of the FA of Sept. 25, 2020, on the Adaptation of Federal Law to Developments in Distributed Ledger Technology, in force since Aug. 1, 2021 (AS 2021 33, 399; <https://www.fedlex.admin.ch/eli/cc/2015/853/en>).

⁶⁵Amended by No I 10 of the FA of Sept. 25, 2020, on the Adaptation of Federal Law to Developments in Distributed Ledger Technology, in force since Aug. 1, 2021 (AS 2021 33, 399; <https://www.fedlex.admin.ch/eli/cc/2015/853/en>).

³³ Financial Market Infrastructure Act (FinMIA), *ibid.*

Art. 154 Exploitation of Insider Information

¹A custodial sentence not exceeding three years or a monetary penalty shall be imposed on any person who as a body or a member of a managing or supervisory body of an issuer or of a company controlling or controlled by them, or as a person who due to their holding or activity has legitimate access to insider information, if they gain a pecuniary advantage for themselves or for another with insider information by:

a.⁶⁹ exploiting it to acquire or dispose of securities admitted to trading on a trading venue or DLT trading facility which has its registered office in Switzerland or to use derivatives of such securities;

b. disclosing it to another;

c.⁷⁰ exploiting it to recommend that another acquire or dispose of securities admitted to trading on a trading venue or DLT trading facility which has its registered office in Switzerland or to use derivatives of such securities.

²Any person who through an act set out in paragraph 1 gains a pecuniary advantage exceeding one million francs shall be liable to a custodial sentence not exceeding five years or a monetary penalty.

³Any person who gains a pecuniary advantage for themselves or for another by exploiting insider information or a recommendation based on insider information disclosed or given to them by a person referred to in paragraph 1 or acquired through a felony or misdemeanor in order to acquire or dispose of securities admitted to trading on a trading venue or DLT trading facility which has its registered office in Switzerland or in order to use derivatives of such securities shall be liable to a custodial sentence not exceeding one year or to a monetary penalty.⁷¹

⁴Any person who is not a person referred to in paragraphs 1 to 3 and yet who gains a pecuniary advantage for themselves or for another by exploiting insider information or a recommendation based on insider information in order to acquire or dispose of securities admitted to trading on a trading venue or DLT trading facility which has its registered office in Switzerland or to use derivatives of such securities shall be liable to a fine.⁷²

⁶⁹Amended by No I 10 of the FA of Sept. 25, 2020, on the Adaptation of Federal Law to Developments in Distributed Ledger Technology, in force since Aug. 1, 2021 (AS 2021 33, 399; <https://www.fedlex.admin.ch/eli/cc/2015/853/en>).

⁷⁰Amended by No I 10 of the FA of Sept. 25, 2020, on the Adaptation of Federal Law to Developments in Distributed Ledger Technology, in force since Aug. 1, 2021 (AS 2021 33, 399; <https://www.fedlex.admin.ch/eli/cc/2015/853/en>).

⁷¹Amended by No I 10 of the FA of Sept. 25, 2020, on the Adaptation of Federal Law to Developments in Distributed Ledger Technology, in force since Aug. 1, 2021 (AS 2021 33, 399; <https://www.fedlex.admin.ch/eli/cc/2015/853/en>).

⁷² Amended by No I 10 of the FA of Sept. 25, 2020, on the Adaptation of Federal Law to Developments in Distributed Ledger Technology, in force since Aug. 1, 2021 (AS 2021 33, 399; <https://www.fedlex.admin.ch/eli/cc/2015/853/en>).

Switzerland provides several exemptions from its insider trading laws. In particular, *Articles 123–128* of the *Ordinance on Financial Market Infrastructures and Market Conduct in Securities and Derivatives Trading (FinMIO)*³⁴ allow:

- The buyback of a company's equity securities at market prices as part of a public buyback offer. See *Article 123 (Buyback of Own Equity Shares)* to *Article 125 (Content of Buyback Notices)*;
- “Securities transactions which are intended to stabilize the price of a security that has been admitted to trading on a trading venue or DLT trading facility in Switzerland” (*Article 126—Price Stabilization after a Public Placement*);
- “Securities transactions to implement an own decision to carry out a securities transaction, in particular the purchase of securities of the target company by the potential offeror with regard to the publication of a public takeover offer, provided the decision was not taken on the basis of insider information” (*Article 127—Other Permissible Securities Transactions*);
- “The communication to a person who requires the insider information in order to fulfill his or her statutory or contractual obligations” (*Article 128—Admissible Communication of Insider Information*); and
- Securities transactions carried out in connection with public tasks and not for investment purposes by parties, such as the Confederation, cantons, Bank for International Settlements, “foreign central banks, the European Central Bank, official bodies or responsible state departments, the European Financial Stability Facility, and the European Stability Mechanism” (*Article 29—Exceptions to Pre-Trade and Post-Trade Transparency*).

Market and Share Price Manipulation

Market and price manipulation are criminal offenses in Switzerland, thereby releasing Swiss banks from legal restrictions on exchanging customer information upon official requests. Article 40a (Price Manipulation) of the SESTA defines market manipulation as the intention to “disseminate false or misleading information against their better knowledge,” or when someone transacts “purchases and sales of such securities directly or indirectly for the benefit

³⁴ The Federal Council, Ordinance on Financial Market Infrastructures and Market Conduct in Securities and Derivatives Trading (Financial Market Infrastructure Ordinance, FinMIO), October 1, 2021, <https://www.fedlex.admin.ch/eli/cc/2015/854/en> (Accessed on November 18, 2021).

of the same person or persons connected for this purpose.”³⁵ It forbids price manipulation and imposes an imprisonment penalty of up to three years or a fine on whoever “substantially influences the price of securities admitted to trading on a Swiss stock exchange or similar Swiss institution, with the intention of gaining a pecuniary advantage for himself or herself or for another.” For those earning more than one million Swiss Francs through such activities, the *SESTA* imposes penalties of imprisonment up to five years or a monetary fine.³⁶ The *SESTA*’s sanctions against market manipulation are also included in the *FinMIA*’s Article 143 (*Market Manipulation*), which also defines inadmissible and admissible conduct.

Money Laundering, Unlawful Association (Organized Crime), and Financing Terrorism

Money laundering is the act of transforming funds from an illegal source into financial assets that appear to be legitimate. Many people associate it with drug trafficking, but money laundering applies to other crimes, such as blackmail, corruption, embezzlement, extortion, human trafficking, kidnapping, and terrorism. The FINMA has found that money-laundering risks are high if (1) a bank customer communicates false or misleading information, (2) the economic purpose of an active account is unknown or suspicious, (3) large deposits are made and withdrawn quickly, (4) an inactive account suddenly becomes very active, (5) the seat or domicile of the contracting party is in a high-risk country, (6) there are frequent high-risk transactions (e.g., or regular transfers from a bank), and (7) the sources of deposits and receipts are not consistent with the company’s business or beneficial owner’s profile.³⁷

³⁵ The Federal Council, Botschaft Zur Änderung Des Börsengesetzes (Börsendelikte Und Marktmissbrauch), *ibid.* Federal Act on Stock Exchanges and Securities Trading (Stock Exchange Act, *SESTA*). *Ibid.* Market manipulation was originally addressed in Article 161^{bis} of the SCC. In 1995, it was “inserted by Article 40 of *SESTA*.” In September 2012, the price manipulation sanctions in Article 40 were amended by Article 40a, which expanded coverage to the stock exchange and exchange-like situations in Switzerland.

³⁶ Before 2012, *SESTA*’s Article 46 referred readers to the SCC for matters dealing with price manipulation. In 2012, *SESTA*’s Article 40 updated the meaning of “price manipulation,” and, from that date, Article 161^{bis} of the SCC was repealed.

³⁷ KPMG, Ordinance of the Swiss Financial Market Supervisory Authority on the Combating of Money Laundering and Terrorist Financing (FINMA Anti-Money Laundering Ordinance, AMLO-FINMA), January 1, 2021, <https://assets.kpmg/content/dam/kpmg/ch/pdf/swiss-anti-money-laundering-ordinance-finma-en.pdf> (Accessed on August 30, 2022).

Criminalization of Money Laundering

In 1990, Switzerland criminalized money laundering and the improper care of financial transactions by enacting *Article 305^{bis} (Money Laundering)* of the SCC.³⁸ The *Article* defines this activity as “frustrating the identification of the origin, the tracing or the forfeiture of assets which he or she knows or must assume originate from a felony or aggravated tax misdemeanor.”³⁹ Under Swiss law, money laundering is punishable only if there is direct or conditional intent. Violations are punishable by incarceration up to three to five years or a fine, depending on the crime’s severity. *Article 305^{bis}* extends liability to situations in which the primary offense is committed abroad, but only if money laundering is a crime in the foreign location.

Article 305^{bis} was welcomed by the international financial and legal communities but introduced a quandary for Swiss bankers. On the one horn of their dilemma was *Article 47* of the *BA*, which made it a crime for bank employees in Switzerland to reveal confidential customer information. On the other horn was *Article 305^{bis}*, which imposed a custodial sentence of not more than three years or monetary fine on any person aiding and abetting money-laundering activities. The open question was what would happen to bank employees who voiced money-laundering suspicions that proved to be incorrect? Could they be found guilty of violating the *BA*?

Passage of *Article 305^{ter} (Insufficient Diligence in Financial Transactions and Right to Report)* of the SCC helped resolve this dilemma by permitting bank employees to report suspicions of money-laundering felonies or aggravated tax misdemeanors, based on “observations that the assets in question originated from a felony or an aggravated tax misdemeanor in terms of *Article 305^{bis}*.” The *Article* had the meaningful effect of protecting bank employees from criminal liability resulting from a breach of professional confidentiality when they reported suspicious cases.

Criminal and Terrorist Organizations

Switzerland reinforced its *Criminal Code* in 1994 when it enacted *Article 260^{ter} (Criminal or Terrorist Organization)*. This *Article* imposed a monetary

³⁸ Swiss Criminal Code, *ibid*. Switzerland’s criminalization of money laundering follows directly from the 1988 United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances in Vienna. This Convention mandates that signatories criminalize activities connected with money laundering.

³⁹ *Ibid*.

penalty or custodial sentence of up to ten years on anyone who “participates in an organization which pursues the objective of committing violent felonies or securing a financial gain by criminal means, or committing violent felonies aimed at intimidating the population or coercing a State or an international organization to act or refrain from acting, or supports such an organization in its activities.” It extends liability to anyone committing an offense outside Switzerland, provided that at least a part of the criminal activities is performed in Switzerland. In 1994, Switzerland also established its Central Offices for Criminal Police Matters within the Federal Office of Police. Its mandate is to conduct investigations into narcotics trafficking and counterfeiting, coordinate inquiry procedures between Switzerland and foreign countries, and evaluate all information related to organized crime. In September 2020, the SCC was reinforced by *Forfeiture of Assets of a Criminal or Terrorist Organization*, which ordered the forfeiture of assets gained from activities involving organized criminal or terrorist organizations.

Background: Swiss Efforts to Prevent Money Laundering

In 1991, a year after money laundering was made illegal in Switzerland, the Swiss Federal Banking Commission (SFBC) issued its *Guidelines on the Combating and Prevention of Money Laundering*, which described the organizational structure banks and security traders should follow to identify, monitor, and curtail money-laundering activities.⁴⁰ These *Guidelines* included good management practices and employee-training procedures as well as helpful interpretations of relevant SCC sections. Prominent in the *Guidelines* was the obligation to report money-laundering suspicions to the appropriate authorities.

Swiss banks picked up the baton of self-regulation by making efforts to curtail money laundering. For example, in October 2000, UBS, Credit Suisse, and eleven other international banks committed themselves to the *Wolfsberg Anti-Money Laundering Principles for Private Banking*, which applied due diligence standards in their global operations.⁴¹ Membership was voluntary, and the self-regulatory directives of the *Wolfsberg Principles* did not impose penalties on banks that violated the rules. The goal of this *Agreement* was to apply a consistent set of standards to the global operations of some of the world’s largest financial intermediaries. In 2002, the SFBC enacted its own

⁴⁰ FINMA, Eidgenössische Bankenkommission, Jahresbericht Rapport De Gestion, 1991, <https://www.finma.ch/FinmaArchiv/ebk/d/publik/bericht/pdf/jb91.pdf> (Accessed on August 30, 2022).

⁴¹ The Wolfsberg Group, Global Banks: Global Standards, <https://www.wolfsberg-principles.com/> (Accessed on August 30, 2022).

Anti-Money Laundering Ordinance (MLO SFBC),⁴² which raised measurably banks' due diligence requirements and the degree of care needed to handle transactions with differing levels of legal and reputational risks.

Switzerland has cooperated on many international levels to prevent, uncover, and return assets from money laundering operations. Among the most significant initiatives have been the *Stolen Assets Recovery Initiative (StAR)*,⁴³ started by the World Bank and United Nations Office on Drugs and Crime. Switzerland has also financially supported the Basel-based *International Center for Asset Recovery (ICAR)*,⁴⁴ and it has been a force behind *Article 57 (Return and Disposal of Assets)* of the *United Nations Convention against Corruption (UNCAC)*,⁴⁵ which mandates the return of stolen assets to countries from which they came. Switzerland has taken an active role in providing financial support to failing states (i.e., nations with the loss of one or more essential conditions, such as territorial control, governmental legitimacy, or diplomatic relations with foreign nations) and negotiating the return of stolen assets to these countries. In addition, it has fought against international money-laundering activities that finance terrorist activities.

Three Pillars of Switzerland's Fight Against Money Laundering and Terrorist Financing

The three pillars⁴⁶ on which Switzerland bases its current fight against money laundering are the *Federal Act on Combating Money Laundering and Terrorist Financing (Anti-Money Laundering Act, AMLA)*,⁴⁷ *Ordinance on Combating*

⁴² Federal Banking Commission, Ordinance of the Swiss Federal Banking Commission Concerning the Prevention of Money Laundering (SFBC Money Laundering Ordinance, MLO SFBC), December 18, 2002, <https://www.finma.ch/FinmaArchiv/ebk/e/archiv/2003/pdf/m032703-03e.pdf> (Accessed on August 30, 2022).

⁴³ The World Bank, Stolen Asset Recovery Initiative, <https://star.worldbank.org/> (Accessed on August 30, 2022).

⁴⁴ International Center for Asset Recovery, International Centre for Asset Recovery: Operational Strategy 2021–2024, September 22, 2020, <https://baselgovernance.org/sites/default/files/2021-03/ICAR%20Operational%20Strategy%202021-24.pdf> (Accessed on August 30, 2022).

⁴⁵ United Nations, United Nations Convention Against Corruption, <https://www.unodc.org/unodc/en/treaties/CAC/> (Accessed on August 30, 2022).

⁴⁶ Eidgenössische Finanzmarktaufsicht FINMA, Legal Basis for Combating Money Laundering, [https://www.finma.ch/en/documentation/legal-basis/laws-and-ordinances/anti-money-laundering-act-\(amla\)](https://www.finma.ch/en/documentation/legal-basis/laws-and-ordinances/anti-money-laundering-act-(amla)) (Accessed on August 30, 2022).

⁴⁷ The Federal Council, Federal Act on Combating Money Laundering and Terrorist Financing (Anti-Money Laundering Act, AMLA), August 1, 2021, https://www.fedlex.admin.ch/eli/cc/1998/892_892_892/en (Accessed on August 30, 2022).

Money Laundering and Terrorist Financing (AMLO),⁴⁸ and *Ordinance of the Swiss Financial Market Supervisory Authority on the Prevention of Money Laundering and Terrorist Financing (FINMA Anti-Money Laundering Ordinance, AMLO-FINMA)*.⁴⁹

Federal Act on Combating Money Laundering and Terrorist Financing (AMLA)

Switzerland's *Anti-Money Laundering Act (AMLA)* was passed in 1997 and revised in 2009 when it was renamed the *Federal Act on Combating Money Laundering and Terrorist Financing (Anti-Money Laundering Act, AMLA)*.⁵⁰ The AMLA was designed to stop or inhibit both money laundering⁵¹ and terrorist financing,⁵² as defined by the SCC. It imposed restrictions on all financial intermediaries, including individuals who act on professional bases to hold deposits of others or to invest or transfer third-party assets of others, such as banks, fund management companies, investment companies, leasing or factoring agents, insurance companies, fiduciaries, money exchangers, investment advisors, security dealers, and casinos. In 2019, the AMLA was revised again and came into force the following year. Among its new provisions was the expansion of due diligence obligations to "advisors." As a result, multi-family offices, trustees, and lawyers are required to check and update client data periodically and to report suspicions of money laundering to the MROS.⁵³

The *AMLA* requires financial intermediaries to verify the identity of all their customers (i.e., individuals and legal entities) and establish the identity of the ultimate beneficial owners of Swiss assets. A customer's identity is required for cash transactions if the transaction has "considerable financial value," as defined by the FINMA. The *AMLA* made it clear that bank employees had a "duty to report" suspicions of money laundering so long as

⁴⁸ The Federal Council, *Federal Act on Combating Money Laundering and Terrorist Financing (Anti-Money Laundering Act, AMLA)*, *ibid.*

⁴⁹ KPMG, *Ordinance of the Swiss Financial Market Supervisory Authority on the Combating of Money Laundering and Terrorist Financing (FINMA Anti-Money Laundering Ordinance, AMLO-FINMA)*, *ibid.*

⁵⁰ Swiss Confederation, *Federal Act on Combating Money Laundering and Terrorist Financing (AMLA)*, *ibid.*

⁵¹ *Ibid.*, *Swiss Criminal Code, Article 305^{bis}*, *ibid.*

⁵² *Ibid.*, *Swiss Criminal Code, Article 260^{quinquies}*, paragraph 1, *ibid.*

⁵³ Nic Carrington and Uday Mehta, *Anti-Money Laundering: Where Are We and Where Do We Go from Here?* Deloitte, Undated, <https://www2.deloitte.com/ch/en/pages/forensics/articles/anti-money-laundering.html> (Accessed on August 30, 2022).

there were “reasonable grounds to suspect that assets involved in the business relationship” were related to criminal or terrorist activities.

Reporting Requirements of Financial Intermediaries Under AMLA

Passage of the *AMLA* resulted in Switzerland having three slightly differing layers of reporting responsibilities. The first was *AMLA*, which required banks to report suspicious activities if they were based on “reasonable grounds.” The second was *Article 305^{ter}* of the *SCC*, which entitled bank employees to report suspicious activities, as long as they were based on “observations that indicate that assets originate from a felony or an aggravated tax misdemeanor in terms of *Article 305^{bis}*.” Finally, the *BA* made it a crime for banks and their employees to divulge confidential bank information.⁵⁴

To implement relatively recent recommendations of the Financial Action Task Force (FATF),⁵⁵ the Swiss Parliament adopted a new *Anti-Money-Laundering Act* in March 2021, which entered into force on January 1, 2023.⁵⁶ To fine-tune suspicious activity reports, the new law clarified the meaning of “reasonable grounds to suspect” money laundering and the responsibility of financial intermediaries to report their suspicions. Lawyers and notaries were intentionally left out of the revision to protect the attorney-client privilege. Time and experience will help to differentiate between “reasonable grounds” and “observations.” For now, they are different shades of gray on a spectrum between white and black, with no clearly defined border, which leaves room for legal uncertainty.

Under the *SCC*, an offense is deemed “serious” if it involves an organized crime member or a participant in an organized money-laundering scheme or results in substantial gains. In such cases, prison sentences of up to five years and fines may be imposed for non-disclosure. By contrast, negligence, such as carelessly accepting assets, is not considered a crime but rather a violation of Swiss laws that require banks to have competent and reliable management systems and practices. Therefore, a bank employee who fails to investigate a

⁵⁴ Michele Moser, Switzerland: New Exceptions to Bank Secrecy Laws Aimed at Money Laundering and Organized Crime, *ibid*.

⁵⁵ The FATF is a 16-country group formed in 1989 by the Group of 7 nations (G-7), with Switzerland a founding member.

⁵⁶ Daniel Lucien Bühr, Adam El-Hakim, Tabea Tsering Segessenmann, and Vanessa Huber, Swiss Parliament Amends the Anti-Money-Laundering Act and (Inadvertently?) Introduces New Compliance Duties, May 12, 2021, https://www.lalive.law/wp-content/uploads/2021/05/LALIVE_Swiss-AMLA_Revision-2021.pdf (Accessed on August 30, 2022). Orbitax, Swiss Federal Council Brings Revised Anti-Money Laundering Act into Force - Orbitax Tax News & Alerts, <https://www.orbitax.com/news/archive.php/Swiss-Federal-Council-Brings-R-50742#:~:text=2022%20%2D%20During%20its%20meeting%20on,effect%20from%201%20January%202023> (Accessed on February 4, 2023).

customer who is depositing bank notes or precious metals worth more than CHF 100,000 signals to Swiss regulatory authorities the possibility of faulty bank management practices rather than complicity in a criminal act.

Individuals and financial institutions that report cases in good faith or freeze assets in accordance with the AMLA are not liable under Switzerland's bank, professional, or trade secrecy laws, which means they cannot be sued for breach of confidentiality contracts. Intentional failures to report violations are subject to fines up to CHF 500,000, and offenses caused by negligence are punishable by fines as high as CHF 150,000. A minimum CHF 10,000 penalty must be assessed for transgressions repeated within five years.

Politically Exposed Person (PEP)

The *AMLA* introduced the term “politically exposed person” (PEP) to the financial community. The acronym PEP describes an individual with an important public profile or ties to well-known people, such as heads of government, national politicians, individuals with senior judicial positions, high-ranking military officials, and executives of state-owned enterprises, all of whom have abilities to leverage their positions for private gain. The controversy surrounding the disclosure of information on a PEP grew mainly from the “Abacha Affair” during the late 1990s and early 2000s, when the Nigerian dictator, Sani Abacha, engineered the massive theft of assets (estimated as high as \$2.2 billion) from the Nigerian treasury and deposited the funds in Swiss and other nations' banks.

The *AMLA* gave Swiss authorities the ability to freeze assets of other infamous individuals, such as Philippines President Ferdinand Marcos, Peruvian Intelligence Head Vladimiro Ilyich Montesinos Torres, Mexican President Carlos Salinas de Gortari, and his brother, Raúl Salinas de Gortari,⁵⁷ as well as Tunisian President Zine al-Abidine Ben Ali, Ivory Coast President Laurent Gbagbo, Egyptian President Hosni Mubarak, and Moammar Gadhafi, Leader and Guide of the Revolution in Libya.

⁵⁷ Raul Salinas, Private Banking: Citibank, and Alleged Money Laundering, October 30, 1998, <https://www.govinfo.gov/content/pkg/GAOREPORTS-OSI-99-1/html/GAOREPORTS-OSI-99-1.htm> (Accessed on August 30, 2022).

Anti-Money Laundering Ordinance (AMLO)

Switzerland's *Anti-Money-Laundering Ordinance (AMLO)* was enacted on June 3, 2015, based on the *Anti-Money Laundering Act* of 1997.⁵⁸ It defines responsibilities for a wide range of Swiss financial intermediaries to fight money laundering and terrorist financing. Among the regulated financial institutions are banks, securities dealers, fund management companies, insurance companies, investment companies under the *Convention Implementing the Schengen Agreement (CISA)*, and asset managers under *CISA*.

Since their enactment, the *AMLO* guidelines have been strengthened and extended to include terrorist activities. The *AMLO* clarifies:

- The scope of its regulatory authority;
- Financial intermediaries' responsibilities to identify contractual parties, controlling persons, and beneficial owners;
- The obligation to refuse funds originating from criminal activities and terrorist organizations (It also gives banks discretionary powers to terminate business relationships);
- The responsibilities of global financial intermediaries to develop criteria for recording, limiting, and supervising, domestically and globally, their legal and reputational risks related to money laundering and terrorist financing;
- The need for financial intermediaries to apply the same level of due diligence for international affiliates (i.e., branches and subsidiaries) as they use in Switzerland;
- Why financial intermediaries must develop internal directives and assign individuals specific responsibilities concerning the prevention of money laundering and communicate these directives to clients;
- The need for top management to approve commercial relationships with politically exposed persons;
- The meaning of "prohibited assets," "prohibited business relationships," and the possible consequence of provision breaches;
- Due diligence procedures that financial intermediaries should follow, ranging from low-risk to high-risk situations and how to monitor these business relationships and transactions;
- Obligations to document transactions and retain records;
- Governance measures for estimating, mitigating, and supervising the risks associated with money laundering and financing terrorism;

⁵⁸ The *AMLO* includes *AMLCA/AMLO* *FOP/AMLO* *SFBC/AMLO* *SFGB*.

- Quality control measures for outsourced work, such as customer and beneficial owner identification;
- Permission to report customers when a financial intermediary perceives actions that might be associated with a “crime, qualified tax offense, or terrorist financing” (These reports are allowed even if the financial intermediary does not have a justified suspicion of money laundering or terrorist financing); and
- Responsibilities concerning foreign correspondent banks.

The *AMLO* requires FINMA-regulated financial institutions to identify risk categories for money laundering and devote greater care to transactions that fall into the high-risk group(s). For example, customers from countries known to be corruption-prone or politically unstable are candidates for a high-risk rating.

Due diligence obligations under the *AMLO* require all Swiss financial intermediaries to verify the identity of the contracting party, controlling person, beneficial owner of the assets, or persons entering into the business relationship on behalf of a legal entity. Any due-diligence breach could be enough reason for a financial institution to fail the “fit and proper requirement.”

On January 1, 2020, the SBA’s *Agreement on the Swiss Banks’ Code of Conduct with Regard to the Exercise of Due Diligence (CDB 20)* came into force. FINMA approved this self-regulatory agreement. Many of its provisions were identical to the FINMA *Anti-Money Laundering Ordinance (AMLO-FINMA)*, which is discussed in the next section.⁵⁹

Business relationships with foreign-resident PEPs took on particular interest because Switzerland’s *AMLO* was enacted, in part, to thwart foreign leaders who stole funds from their countries and tried to hide them abroad. Today, Swiss banks are required to monitor and track high-risk relationships, focusing on preventing transfers rather than treating problems after they occur. The Swiss Federal Department of Foreign Affairs has been charged

⁵⁹ SwissBanking, 2020: Agreement on the Swiss Banks’ Code of Conduct with Regard to the Exercise of Due Diligence (CDB 20), https://www.swissbanking.ch/_Resources/Persistent/6/2/e/e/62ecc3df0685e359c5a376dfca79dec8b908ea9c/SBA_Agreement_CDB_2020_EN.pdf (Accessed March 17, 2022). SwissBanking, 2020: Commentary on the Agreement on the Swiss Banks’ Code of Conduct with Regard to the Exercise of Due Diligence (CBD 20), https://www.swissbanking.ch/_Resources/Persistent/a/1/1/5/a115ebc3dc8454f51346c8f1c05d9e81dfcb5cac/SBA%20_Commentary_on_the_Agreement_on_the_Swiss_banks%27_code_of_conduct_with_regard_to_the_exercise_of_due_diligence_CDB_20_EN.pdf (Accessed on March 16, 2022). Andreas Barfuss, CDB 20: Revised Code of Conduct in the Area of the Fight Against Money Laundering, Swiss Bankers Association, July 31, 2018, <https://www.swissbanking.ch/en/news-and-positions/news/cdb-20-revised-code-of-conduct-in-the-area-of-the-fight-against-money-laundering> (Accessed on August 30, 2022).

with freezing, confiscating, and returning illicitly gained funds to their rightful owners, but Switzerland's policy is to cooperate only with foreign governments that can reciprocate in the exchange of financial information.⁶⁰

The *AMLO* addresses many high-risk acts, such as assets derived from criminal activities, corruption, misuse of public funds, and suspected links to terrorist organizations. Violations of *AMLO*'s standards can result in criminal charges by the *AMLO*, the FINMA, or the Federal Justice and Police Department. If violations are flagrant enough, banks could lose their FINMA licenses to operate.

FINMA Anti-Money Laundering Ordinance (AMLO-FINMA)

On June 3, 2015, the FINMA published its *Ordinance of the Swiss Financial Market Supervisory Authority on the Combating of Money Laundering and Financing Terrorist Activities (FINMA Anti-Money Laundering Ordinance, AMLO-FINMA)*,⁶¹ which defined how financial intermediaries should implement their duties to combat money laundering and the financing of terrorist activities. The *AMLO-FINMA* has served as a guide to the FINMA when it approves rules and regulations of self-regulating organizations. It imposes strict self-regulatory requirements to fight money laundering and terrorist financing. Among its many provisions are:

- Lowering the threshold-reporting limit for cash transactions from CHF 25,000 to CHF 15,000;
- Giving a 30-day deadline to close new accounts lacking complete documentation on the controlling person and beneficial owner;
- Incorporating the FINMA's circular on video and online identification into the CDB; and
- Updating the rules for abbreviated processes.⁶²

The *AMLO-FINMA* covered a vast territory. In "Title 1: General Provisions" were objectives, definitions of important terms, the scope of application, rules regarding branch offices or affiliated group companies abroad,

⁶⁰ Swiss Confederation, Federal Department of Foreign Affairs FDFA, <https://www.admin.ch/gov/en/start/departments/departement-foreign-affairs-fdfa.html> (Accessed on February 5, 2023).

⁶¹ KPMG, Ordinance of the Swiss Financial Market Supervisory Authority on the Combating of Money Laundering and Terrorist Financing (AMLO-FINMA), *ibid.* The Original German version can be found at Des Bundesrechts, Verordnung Der Eidgenössischen Finanzmarktaufsicht über Die Bekämpfung Von Geldwäscherei Und Terrorismusfinanzierung im Finanzsektor (GwV-FINMA), *ibid.*

⁶² Andreas Barfuss, CDB 20: Revised Code of Conduct in the Area of the Fight Against Money Laundering, *ibid.*

global monitoring of legal and reputational risks, prohibited assets, forbidden business relationships, breaches of provisions, general provisions on due diligence, high-risk business relationships and transactions, the means, timing, and monitoring of investigations, duty to document and retain records, and governance. Titles 2–5 made special provisions for

- banks and securities firms,
- fund management companies,
- investment companies,
- asset managers under the *Convention Implementing the Schengen Agreement (CISA)*, and
- insurance companies.

*Financial Institutions Act*⁶³

The *Federal Act on Financial Institutions (Financial Institutions Act, FinIA, June 15, 2018)* entered into force in January 2020, subject to a two-year phase-in period. It was implemented to protect financial institutions' customers by:

- Regulating the license requirements for financial institutions in virtually every area;
- Governing the organization and operation of Switzerland's financial market infrastructures;
- Supervising the conduct of participants in securities and derivatives markets;
- Substantially changing regulatory oversight on independent asset managers (IAMs); and
- Standardizing the rules for financial institutions engaged in asset and collective asset management.

⁶³ The Federal Council, *Federal Act on Financial Institutions (Financial Institutions Act, FinIA)*, <https://www.fedlex.admin.ch/eli/cc/2018/801/en> (Accessed on August 30, 2022). For more information on *FinIA*, please see *Chapter 5: Switzerland's Bank Regulators and Laws*.

*Federal Act on Financial Services*⁶⁴

The *Federal Act on Financial Services* (*Financial Market Services Act, FinSA*—June 15, 2018) entered into force in January 2020, casting a wide regulatory net over client advisers, financial service providers, and financial service products offered by Swiss financial intermediaries.⁶⁵ The *FinSA* was implemented to harmonize authorization rules for financial service providers other than banks. It imposed licensing and prudential supervision requirements on asset managers (trustees) and independent wealth managers. Among its provisions are:

- Consolidation of regulatory authority;
- New reporting requirements and tests to increase financial openness and reduce abuses;
- Reduced barriers obstructing customers' legal claims against financial service providers;
- Rules of conduct that apply to all financial service providers; and
- Requirements for information sufficiency, assessment and adequacy tests, documentation requirements, accountability, transparency, and due diligence.

There Is Still Room for Improvement

Switzerland's parliament has taken significant steps to liberalize the international exchange of information that might inhibit or prevent money laundering, tax fraud, tax evasion, and financing terrorism. Nevertheless, repeated violations by Swiss bankers of bilateral and multilateral treaties have blemished the nation's reputation, which is particularly hazardous for a small country with a sizeable financial imprint that relies on big global customers to accept its independence. A good example involved 1MDB (1Malaysia Development Berhad), a Malaysian government-run strategic development company, which was the center of a scandal that embroiled then-Prime Minister Najib Razak. In 2017, the FINMA found JPMorgan's Swiss subsidiary guilty of money-laundering conduct in its business relationships with 1MDB. In 2019, two Coutts bankers were fined for their

⁶⁴ The Federal Council, Federal Act on Financial Services (FinSA), June 15, 2018, <https://www.fedlex.admin.ch/eli/cc/2019/758/en> (Accessed on August 30, 2022). For more information on *FinSA*, please see *Chapter 5: Switzerland's Bank Regulators and Laws*.

⁶⁵ *FinSA* covers Financial Market Infrastructures and Markets, Financial Services, Portfolio Managers (Trustees), and Supervisory Organizations.

roles in helping 1MDB, and the following year (2020), a former Coutts banker was convicted for failing to report a \$700 million transfer into a Swiss account by 1MDB. Altogether, Coutts was charged with processing more than \$2.4 billion in illegal transactions.⁶⁶ In January 2019, Swiss officials spotted money-laundering operations involving embezzled Venezuelan funds worth about \$10 billion (CHF 9 billion), which were deposited in hundreds of Swiss accounts at about 30 Swiss banks.⁶⁷

In its most recent report (2019), FATF took Switzerland off the list of countries with strategic anti-money-laundering deficiencies because there were no sanctions in force against the nation, and its anti-bribery and corruption index was excellent.⁶⁸ Nevertheless, fresh episodes of money-laundering activities have called into question the effectiveness of Switzerland's anti-money laundering monitoring system and the willingness of Swiss banks to follow the FINMA guidelines. The Venezuela affair reinforced views that some Swiss financial institutions operating under Swiss laws have followed a "zebra strategy," demanding clean money from developed nations, for which information sharing has become automatic, but being less diligent in identifying and reporting black-money deals with customers from developing countries.

The COVID-19 pandemic, which began in 2020, caused a spike in Swiss money laundering and fraud reports.⁶⁹ The MROS reported a 25% increase during the first year, with many of these cases involving "COVID credits" (i.e., grants by the Swiss government to businesses that were (presumably) financially handicapped by the worldwide virus). COVID-19 created new opportunities for criminals to exercise their money-laundering skills.

⁶⁶ Sam Jones and Owen Walker, Ex-Coutts Banker Found Guilty over Funds from Jho Low, *Financial Times*, July 31, 2020, <https://www.ft.com/content/599434a3-ec0c-429b-b043-135264730c3c> (Accessed on November 18, 2021).

⁶⁷ Katy Romy, Banking Secrecy Remains a Business Model for Swiss Banks, SWI Swissinfo.ch, February 5, 2021, <https://www.swissinfo.ch/eng/banking-secrecy-remains-a-business-model-for-swiss-banks/46335412> (Accessed on August 30, 2022).

⁶⁸ KnowYourCountry, Switzerland AML Report, <https://www.knowyourcountry.com/switzerland1111> (Accessed on August 30, 2022).

⁶⁹ SWI swissinfo.ch, Pandemic Boosts Reports of Suspected Money Laundering, Banking & Fintech, May 18, 2021, https://www.swissinfo.ch/eng/pandemic-boosts-reports-of-suspected-money-laundering/46628880?utm_campaign=teaser-in-querylist&utm_source=swissinfoch&utm_medium=display&utm_content=o (Accessed on August 30, 2022).

Corruption

Relatively recently, Switzerland has turned its attention to cases involving suspected corruption. To this end, the nation has incorporated into its *Criminal Code* punishments for offering or receiving preferential treatment by Swiss or foreign officials.⁷⁰ The goal is to fight corruption at all levels, from prevention, recognition, examination, inspection, and criminalization to repatriation.

Switzerland has made concerted efforts to prevent and criminalize corruption and provide both technical and asset-recovery assistance.⁷¹ The nation adheres to the rules and regulations of the OECD, United Nations, and Council of Europe (Group of States against Corruption, GRECO). It also participates in these organizations' assessment, monitoring, and authentication efforts.⁷² Periodic mutual evaluations are made to determine Switzerland's conformance to OECD standards, and recommendations are made for improvements. Switzerland works closely with the OECD's Working Group on Bribery. In December 2008, the Swiss Federal Council established an interdepartmental anti-corruption working group under the Department of Foreign Affairs to harmonize the nation's federal, cantonal, and private anti-corruption policies.

Articles 322^{ter} (Bribery of Swiss Public Officials) to *322^{novies}* (*Accepting Bribes*) of the SCC criminalize both the granting and accepting of bribes and advantages. *Articles 322^{ter}* to *322^{sexies}* (*Acceptance of an Advantage*) address this issue for Swiss public officials, such as judicial or other authorities, public officials, officially appointed experts, translators or interpreters, arbitrators, or armed forces members. *Article 322^{septies}* (*Bribery of Foreign Public Officials*) focuses on foreign public officials, and *Articles 322^{octies}* (*Bribery of Private Individuals*) and *322^{novies}* (*Accepting Bribes*) deal with bribes and advantages for private individuals.

⁷⁰ See Swiss Criminal Code, Article 322^{ter}–322^{octies}, *ibid*.

⁷¹ Federal Department of Finance FDF, Fighting Corruption at the International Level, February 2009, https://www.efd.admin.ch/dam/efd/en/dokumente/alt/wirtschaft_waehrungfinanzplatz/faktenblaetter/faktenblatt_bekaempfungderkorruptionaufinternationalerebene.pdf.download.pdf/fact_sheet_fightingcorruptionattheinternationallevel.pdf (Accessed on August 30, 2022).

⁷² See the OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions (1997); Criminal Law Convention of the Council of Europe on Corruption (1999) and United Nations Convention against Corruption (2003).

Tax Evasion

Switzerland's democratic background and self-declaration tax system also clashed with the views and value systems of European countries that, historically, had autocratic regimes. For decades, Switzerland has made a clear difference between tax fraud and tax evasion and, therefore, refused to exchange bank customers' information with other countries. Whereas tax fraud was a crime by Swiss law, tax evasion was a civil offense. Tax fraud is the intentional use of deception (e.g., employing forgery, willful falsification of documents, and counterfeiting) to reduce an individual's withholding taxes, stamp duties, or customs duties. By contrast, until it was repealed in 2012, tax evasion (e.g., breaches of procedural tax responsibilities and non-disclosure or nonpayment of taxes on earned income) was a misdemeanor that violated Switzerland's tax laws. Therefore, it carried financial (not criminal) penalties.

Tax fraud is fully prosecutable under Switzerland's criminal justice system. Consequently, Swiss banks are (and have been) required to share confidential client information for tax fraud cases. These requests supersede the confidentiality protections offered by the *BA*.

Until 2012, tax evasion was enforced by tax authorities, who had limited investigative powers due to the *BA*.⁷³ Swiss rules in this area were founded on the principle of "self-declaration," which means that tax payments should be direct and exclusive matters between the State, which collects taxes, and individuals who declare taxable income. Until it was repealed, Swiss tax law placed enforcement responsibilities squarely on the cantonal and federal tax authorities (not the criminal justice system) to prove tax evasion and penalize (usually with substantial fines) those found guilty.

Swiss banks were prohibited by law from aiding and abetting tax evaders, but at the same time, they were not the legal agents of domestic or foreign tax authorities. Therefore, the same laws that required Swiss banks to report suspicions of tax fraud to domestic authorities, such as the MROS, also prohibited them from directly contacting domestic or foreign tax authorities. The reasoning used was that confidential information should flow from banks to customers and, only after that, to domestic or foreign tax authorities, which is why cantonal and federal governments have no legal power to demand customer information from banks.

The distinction between tax fraud and tax evasion applied only to individuals and not to legal entities. Swiss law requires all legal entities to report accurate and timely financial statements, such as balance sheets and income statements. Anything less constitutes tax fraud, which is a crime.

⁷³ Schellenberg Wittmer, Tax Evasion: The Evolution of the Swiss Criminal Tax Law, *International Tax Review*, March 12, 2013, <https://www.internationaltaxreview.com/article/b1fbsx9bvjp4g6/tax-evasion-the-evolution-of-the-swiss-criminal-tax-law> (Accessed on August 30, 2022).

On occasion, the fuzzy line between tax evasion and tax fraud placed Swiss banks under the magnifying glasses of domestic and international critics who accused them of violating the letter of foreign laws, where tax evasion was a crime, and the spirit of Swiss laws by agnostically executing financial transactions for suspected tax evaders. As time passed, this controversy abated somewhat because foreign authorities learned to “game the system.” For example, rather than requesting information from Swiss banks on the grounds of “tax evasion,” they requested it using “tax fraud” as the pretense. Similarly, experience gave foreign nations comfort with the gradations, working definitions, and differences between tax evasion and tax fraud in Switzerland.

The turning point for Switzerland came in 2009. Under pressure from the G-20 countries and the OECD, Switzerland accepted *Article 26 (Exchange of Information)* of the OECD’s *Model Tax Convention on Income and Capital*.⁷⁴ Swiss authorities also agreed to cooperate with other nations in their tax-evasion investigations.⁷⁵ Six months later, an agreement was reached with the United States to deepen and expand information exchanges on suspected tax evaders.⁷⁶

Once *Article 26 (Exchange of Information)* of the OECD’s *Model Tax Convention on Income and Capital* was enacted, there was no longer a meaningful difference between tax evasion and qualified tax fraud for purposes of international information exchanges in tax matters. In 2012, tax evasion became an official crime in Switzerland’s *Criminal Code* and entered into force on January 1, 2016. The new rules also made severe cases of tax evasion (i.e., exceeding CHF 300,000) a “predicate offense” to money laundering.⁷⁷

⁷⁴ OECD, Article 26 of the OECD Model Tax Convention on Income and on Capital and Its Commentary: READ Online, https://read.oecd-ilibrary.org/taxation/implementing-the-tax-transparency-standards/article-26-of-the-oecd-model-tax-convention-on-income-and-on-capital-and-its-commentary_9789264088016-6-en#page1 (Accessed on August 30, 2022). In 2008, Austria, Belgium, Luxembourg, and Switzerland expressed reservations to the OECD about Article 26, but in March 2009, they withdrew them.

⁷⁵ Federal Chancellery, Switzerland to Adopt OECD Standard on Administrative Assistance in Fiscal Matters, <https://www.admin.ch/gov/en/start/documentation/media-releases.msg-id-25863.html> (Accessed on August 30, 2022). See also Steve Czajkowski, Switzerland Agrees to Share Private Financial Data Under OECD Rules, Jurist, March 14, 2009, <https://www.jurist.org/news/2009/03/switzerland-agrees-to-share-private/> (Accessed on August 30, 2022).

⁷⁶ Brian Jackson, Switzerland, US Sign Treaty on Sharing Tax Evader Information, Jurist, September 25, 2009, <https://www.jurist.org/news/2009/09/us-switzerland-sign-treaty-on-sharing/> (Accessed on August 30, 2022). Also, see US Department of the Treasury, United States, Switzerland Signs Agreement to Bolster Tax Information Exchange, September 23, 2009, <https://www.treasury.gov/press-center/press-releases/Pages/tg297.aspx> (Accessed on August 30, 2022).

⁷⁷ Simone Nadelhofer, Benoit Mauron, Deborah Hondius, and Michael Neuman, Tax Offences as Predicate Offences to Money Laundering—Key Takeaways for Practitioners, ZSIS, November 25, 2021, <https://www.zsis.ch/artikel/tax-offences-as-predicate-offences-to-money-laundering-key-takeaways-for> (Accessed on February 5, 2023).

Tax Evasion Issues Between Switzerland and the EU

European Union (EU) countries have expressed particular concern over, what they perceived to be, Switzerland's foot-dragging in matters of international cooperation on tax fraud and tax-evasion investigations. To get an idea of the magnitudes involved, in 2001, Italian Finance Minister Giulio Tremonti granted a tax and penalty amnesty on funds repatriated from Switzerland to Italy, which reportedly triggered the recovery of €30 billion to €35 billion in unpaid taxes.⁷⁸

EU officials openly bemoaned their inability to curtail tax evasion due to Switzerland's unwillingness to alter its banking secrecy laws. For example, at the end of 2002, an automatic information-sharing agreement among EU members collapsed when Austria, Belgium, and Luxembourg refused to participate unless Switzerland agreed to the same terms. These nations feared substantial capital outflows because Swiss financial institutions administered about one-third of the world's offshore wealth. Unilateral rule changes could have put these EU nations at a competitive disadvantage.

In 2003, the *European Union Savings Directive (EUSD)* was enacted, which allowed Austria, Belgium, and Luxembourg to temporarily keep their banking secrecy rules in place so long as Switzerland made no changes in its laws.⁷⁹ The quid pro quo for leniency was an agreement by these three countries to impose a 15% withholding tax on the earnings of "secret" accounts. This tax rose to 20% on July 1, 2008, and 35% after July 1, 2011. The *EUSD* also gave individual beneficial owners the choice of voluntarily disclosing interest payments to avoid the withholding tax.

The *EU Directive on Taxation of Savings Income in the Form of Interest Payment* was approved in 2003 and implemented in 2005.⁸⁰ Similar in structure to the *EUSD*, it tried to prevent or inhibit tax evasion by requiring the automatic exchange of information on interest earned by foreign residents of participating EU nations. Switzerland became a willing member before implementation on October 26, 2004. Under the *Agreement*, if bank customers of European countries chose not to reveal their identities, Swiss banks withheld taxes on the interest earned and paid the amount, in bulk, to

⁷⁸ BBC Monitoring European, Billions Returned to Italy from Switzerland Under Tax Amnesty, ProQuest, May 16, 2002 <https://www.proquest.com/docview/451920392?accountid=36796> (Accessed on August 30, 2022).

⁷⁹ Paul Meller with Alison Langley, Europe Acts on Secrecy in Banking, *New York Times*, January 22, 2003, <https://www.nytimes.com/2003/01/22/business/europe-acts-on-secrecy-in-banking.html> (Accessed on August 30, 2022).

⁸⁰ Official Journal of the European Union, Council Directive 2003/48/EC of 3 June 2003 on Taxation of Savings Income in the Form of Interest Payments, June 26, 2003, <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32003L0048&from=EN> (Accessed on August 30, 2022).

the customers' resident countries. Of the taxes collected, Swiss tax authorities transferred 75% to the EU and retained 25% to pay its administrative expenses, with 15% going to the Swiss Confederation, and 10% to the Cantons.⁸¹ The tax started at 15% in 2005 and reached its maximum 35% rate in 2011. A significant benefit of this tax agreement was its focus on maintaining bank confidentiality by paying taxes in bulk, thereby keeping customers' identities anonymous. This arrangement was criticized for not being an effective defense against tax evasion.

In October 2004, Switzerland and the EU signed the *Bilateral Agreements II*, which covered nine economic, political, and security concerns.⁸² Switzerland's Parliament approved the *Agreement* in December. Regarding taxation, they enhanced the level of cooperation in indirect taxation cases dealing with tax fraud and tax evasion (e.g., value-added taxes), but there was no mutual understanding on matters dealing with direct taxation. Under the *Agreement*, if an alleged offense had sufficient size, EU authorities were given the same access to documents in Switzerland as Swiss authorities had to them.

In 2012, Switzerland entered into bilateral tax and information-sharing agreements with Austria and the United Kingdom.⁸³ The agreements came into force on January 1, 2013, and ended in 2017. Generically, they were called the "*Swiss Rubik Agreements*" because a Rubik cube is composed of many interrelated blocks, no one of which is essential to the others' functioning. To "regularize" their Swiss banking relationships, natural persons domiciled in Austria and the UK were given the option of voluntarily disclosing their Swiss bank accounts⁸⁴ or automatically paying a withholding tax anonymously at a rate equivalent to their countries of residence. For the

⁸¹ This withholding tax was not imposed on Swiss-sourced interest payments that were already subject to Swiss withholding taxes. Swiss Confederation, Bilateral Agreements Switzerland—EU, https://www.europarl.europa.eu/meetdocs/2009_2014/documents/deca/dv/2203_07/2203_07en.pdf (Accessed on August 30, 2022).

⁸² The Bilateral Agreements I were signed in 1999, and Bilateral Agreements II were signed in 2004. See Bilateral Agreements II Switzerland—EU, https://www.europarl.europa.eu/meetdocs/2004_2009/documents/fd/deca20050706_1/deca20050706_11a.pdf (Accessed on August 30, 2022). Eight of nine agreements came into force independently (i.e., Automatic Exchange of Information AEOI, Fight against Fraud, Processed Agricultural Products, Creative Europe, Environment, Statistics, Pensions, Education, Vocational Training, and Youth). Only the Schengen/Dublin Agreement required a referendum, which was held and approved in June 2005.

⁸³ Federal Department of Finance, Withholding Tax Agreement with Austria to Be Terminated, November 11, 2016, <https://www.admin.ch/gov/en/start/documentation/media-releases.msg-id-64470.html> (Accessed on August 30, 2022), Federal Department of Finance, Withholding Tax Agreement with United Kingdom to Be Terminated, November 14, 2016, <https://www.admin.ch/gov/en/start/documentation/media-releases.msg-id-64508.html> (Accessed on August 30, 2022). The German government did not approve the agreement with Switzerland.

⁸⁴ Those who disclosed their Swiss accounts could regularize their banking relationship by paying a one-off flat tax based on the duration of assets held in Switzerland.

UK, the rate varied between 21 and 41%, depending on the duration of the banking relationship and variance of the initial and ending balances. For Austria, the rate varied between 15 and 38%. These withholding taxes were on existing assets, interest, and investment income. Under the *Agreements*, Swiss banks collected taxes and forwarded them directly to the partner countries without revealing any customer information.⁸⁵ Individuals who refused both alternatives were not permitted to open new Swiss bank accounts, and existing ones needed to be closed.

The anonymous tax solution was costly for Swiss paying agents to implement. Still, it helped to balance Switzerland's banking secrecy rules with foreign governments' right to tax its residents' offshore accounts. A guideline worth mentioning in this context is that Switzerland relies on its major (especially European) customers' goodwill to remain a viable global competitor. One major problem was that the Rubik model did nothing to identify and punish tax evaders, which is why countries such as France refused to join. The *Swiss Rubik Agreements* provided a financial windfall for Austria and the United Kingdom, but an open question was whether they violated European Union laws. On January 1, 2017, these *Agreements* were abolished when Switzerland enacted the OECD's *Multilateral Convention on Mutual Administrative Assistance in Tax Matters (AEOI)*, which provided for the automatic exchange of financial information among participating nations.⁸⁶

Efforts by Switzerland and the EU to thwart tax evasion were just the tip of a slippery iceberg. They also wanted to inhibit smuggling and money laundering and ways to extend their reach to other financial areas in Switzerland, such as life insurance and structured products. Regardless, the overall goal was clear. Switzerland wanted to end or moderate its reputation as a haven for tax evaders without sacrificing Swiss constitutional rights to privacy. EU dissatisfaction continued into 2008 and culminated in German Finance Minister Peer Steinbrueck's call for EU members to place Switzerland's name on the OECD's blacklist of uncooperative tax havens.

Tax Evasion Issues Between Switzerland and the United States

It is legal for US taxpayers to own offshore accounts, but it is illegal to hide undeclared income in them. Depending on the violation's degree, a US taxpayer's failure to disclose foreign accounts, report related income, and

⁸⁵ The agreements also provided a means to regularize taxes on non-disclosed accounts in the past.

⁸⁶ OECD's Multilateral Convention on Mutual Administrative Assistance in Tax Matters is explained more fully later in this chapter.

pay required taxes are potential felonies or misdemeanors for filing false tax returns, which could result in significant time in jail.⁸⁷

*Double Tax Treaties*⁸⁸

US efforts to pry tax information from Swiss banks have had their ebbs and flows. Early efforts were made using bilateral agreements. In 1951, Switzerland entered into a tax treaty with the United States under which Switzerland agreed to exchange information only to the extent that it involved “tax fraud or the like,” which was a criminal offense in both Switzerland and the United States.⁸⁹ What constituted a “criminal offense” was at the discretion of Swiss authorities. This Treaty was revised in 1996 by the *Convention between the United States of America and the Swiss Confederation for the Avoidance of Double Taxation with Respect to Taxes on Income (Double-Tax Treaty of 1996)*, which became effective in 1998. Under it, information exchanges were still limited to the essentials.⁹⁰ While the meaning of “tax fraud” was broadened, it was still narrow enough to restrict the flow of international information.

The process of revising and replacing the *Double-Tax Treaty of 1996* took a step forward on September 23, 2009, when Switzerland and the United States agreed to a *Protocol*, bringing Switzerland into closer conformity with US tax policy.⁹¹ The new *Treaty* broadened the definition of “tax fraud” to include tax evasion using accounts in foreign countries and provided a means to make “group requests” for information.⁹² The *Protocol* allowed for the exchange of

⁸⁷ Internal Revenue Service, Statement of IRS Commissioner John Koskinen, June 18, 2014, <https://www.irs.gov/newsroom/statement-of-irs-commissioner-john-koskinen> (Accessed on August 30, 2022).

⁸⁸ A double tax treaty tries to prevent individuals and businesses from redundant taxes in different countries. It also serves to fight tax evasion and tax avoidance by the exchange of information on non-resident bank customers.

⁸⁹ Legal Information Institute, 26 CFR § 509.101—Introductory, May 24, 1951, <https://www.law.cornell.edu/cfr/text/26/509.101> (Accessed on August 30, 2022).

⁹⁰ Internal Revenue Service, *Convention Between the United States of America and the Swiss Confederation for the Avoidance of Double Taxation with Respect to Taxes on Income*, October 2, 1996, <https://www.irs.gov/pub/irs-trty/swiss.pdf> (Accessed on August 30, 2022). US Senate, *Protocol Amending Tax Convention with Swiss Confederation*, January 26, 2011, <https://www.congress.gov/112/cdoc/tdoc1/CDOC-112tdoc1.pdf> (Accessed on August 30, 2022). Also, see Internal Revenue Service, *Switzerland—Tax Treaty Documents*, <https://www.irs.gov/businesses/international-businesses/switzerland-tax-treaty-documents> (Accessed on August 30, 2022).

⁹¹ *Ibid.*

⁹² US Department of the Treasury, *Mutual Agreement of January 23, 2003, Regarding the Administration of Article 26 (Exchange of Information) of the Swiss-US Income Tax Convention of October 2, 1996*, January 23, 2003, <https://www.treasury.gov/press-center/press-releases/Pages/mutual.aspx> (Accessed on August 30, 2022).

information “necessary for the prevention of tax fraud *or the like* in relation to the taxes which are the subject of the *Convention*.”⁹³ The *Agreement’s* terms reinforced both countries’ intentions to support tax administration and enforcement efforts. They also clarified the meaning of “tax fraud or the like” and allowed requests to be made when they were based on “reasonable suspicions.” This *Protocol* was signed in Washington on September 23, 2009, and corrected by an exchange of notes on November 16, 2010.⁹⁴ Switzerland’s Parliament accepted the conditions in 2010, but it was not until July 17, 2019, almost a decade later, that the US Senate approved the *Agreement*.⁹⁵

Articles 1 and 2 of the 2009 *Protocol* expanded existing provisions concerning cross-border dividend payments, mutual agreement procedures, and information exchanges between Swiss and US tax authorities. Particular focus was on clarifying tax obligations for pension plans and individual retirement savings plans (e.g., Paragraph 3 of *Article 1*). *Article 3* replaced *Article 26 (Exchange of Information Article)* in the 1996 *Treaty* with one that aligned more closely with US transparency standards, the *Foreign Account Tax Compliance Act (FATCA)*, and filing requirements under the *Foreign Bank and Financial Accounts (FBAR)*. *Article 4* focused on how the revised *Article 26 (Exchange of Information)* would be applied, and *Article 5* contained rules for bringing the *Protocol* into force and activating its provisions.

Qualified Intermediary Program

In 2001, the US IRS’s *Qualified Intermediary Program (QIP)*⁹⁶ entered into force. It required participant foreign (non-US) banks to identify and report customers’ US-sourced income (e.g., dividends, interest, rents, royalties, and other fixed or determinable income). Among the significant benefits of becoming a Qualified Intermediary (QI) and agreeing to obey specific US documentation and withholding obligations were simplified reporting procedures for foreign account holders and an ability to protect customers’

⁹³ Ibid.

⁹⁴ US Senate, Protocol Amending the Convention Between the United States of America and the Swiss Confederation for the Avoidance of Double Taxation with Respect to Taxes on Income, Signed at Washington on October 2, 1996, January 26, 2011, <https://www.congress.gov/112/cdoc/tdoc1/CDOC-112tdoc1.pdf> (Accessed on August 30, 2022).

⁹⁵ KPMG, United States—Senate Approves Protocol Amending Tax T, July 17, 2019, <https://home.kpmg/xx/en/home/insights/2019/07/flash-alert-2019-120.html> (Accessed on August 30, 2022).

⁹⁶ IRS, IRS Signs Qualified Intermediary Agreement, <https://www.irs.gov/pub/irs-news/ir-00-74.pdf> (Accessed on August 30, 2022). Legal Information Institute, 26 CFR § 1.1441-1—Requirement for the Deduction and Withholding of Tax on Payments to Foreign Persons, <https://www.law.cornell.edu/cfr/text/26/1.1441-1> (Accessed on August 30, 2022).

identities. By using *QIP*'s collective refund procedures, Swiss bank customers were relieved of any responsibility to submit independent US tax refund claims.⁹⁷

Banks that refused to accept or violated the *QIP* rules could be denied access to the US financial markets and were subject to a 30% withholding tax on dividends, interest payments, and capital gains on the sale of US securities.⁹⁸ Furthermore, *QI* status was required by the United States if a Swiss bank wanted to hold US securities for customers reporting income to the US Internal Revenue Service (IRS).

In contrast to other Swiss agreements, *QIP* was not between the Swiss and US governments but between particular *QI* Swiss banks and the US government. *QIP* was a compromise, of sorts, that tried to balance Swiss banks' legal obligation to protect confidential customer information and the US desire to collect tax revenues. Under the *Agreement*, Swiss financial institutions withheld taxes on the investment returns of US residents and namelessly paid them to the IRS, thereby maintaining client confidentiality.

In 2010, *QIP* rules were strengthened by requiring foreign banks to take active steps to investigate, determine, and report to the IRS all US investors (e.g., partnerships, trusts, family foundations, and corporations) who were account holders. Previously, their efforts were relatively passive. To enforce these changes, periodic (nameless) audits by the IRS and external auditors were made.

The original *QI Agreement* expired on December 31, 2016, and was replaced by a new one, which was published with the *Revenue Procedure 2017-15* and entered into force on January 1, 2017.⁹⁹ A noteworthy change in the new *QI Agreement* was the *obligation* for *QIs* to abide by compliance programs that defined and managed internal rules and to submit their findings to independent (internal or external) reviews.

US Investigations of Tax Evasion, Tax Fraud, and Conspiracy

In 2007, the US IRS investigated Swiss banks suspected of using undeclared, offshore, private-banking services to help American tax evaders. The value of

⁹⁷ US Internal Revenue Service, Qualified Intermediary General FAQs: Internal Revenue Service, May 11, 2021, <https://www.irs.gov/businesses/corporations/qualified-intermediary-general-faqs> (Accessed on August 30, 2022).

⁹⁸ IRS, Part III: Administrative, Procedural, and Miscellaneous Application Procedures of Qualified Intermediary Status Under Section 1441: Final Qualified Intermediary Withholding Agreement, <https://www.irs.gov/pub/irs-drop/rp-00-12.pdf> (Accessed on August 30, 2022).

⁹⁹ IRS, Qualified Intermediary Agreement, <https://www.irs.gov/pub/irs-drop/rp-17-15.pdf> (Accessed on August 30, 2022).

US assets in Swiss banks was estimated at \$20 billion, and unpaid taxes were valued at approximately \$300 million a year. This investigation was part of a concerted US effort to conduct stricter oversight of particular Swiss banks, such as UBS, Credit Suisse, and Basler Kantonalbank, which were suspected of encouraging and fostering US tax evasion.

In June of 2008, Switzerland became embroiled in a highly publicized tax-evasion case, when UBS private banker, Bradley Birkenfeld, pleaded guilty to conspiring with a California real estate developer, Igor Olenicoff, to evade \$7.2 million in taxes by concealing assets worth \$200 million in Switzerland and Liechtenstein.¹⁰⁰ In 2009, Birkenfeld was sentenced to serve 40 months in prison for his actions. Because of his tax-evasion services for American customers, UBS was found guilty of violating its obligations under *QIP*.

Birkenfeld indicated in his court testimony that US taxpayers held approximately \$20 billion in undeclared UBS accounts. These allegations inspired hearings during July 2008 by the *US Senate Permanent Subcommittee on Investigations* into tax haven banks and how banking secrecy laws facilitate tax-evasion services. The Committee's six-month investigation of Swiss-based UBS and Lichtenstein-based LGT Bank produced a lengthy report entitled *Tax Haven Banks and US Tax Compliance*.¹⁰¹ It alleged the United States lost an estimated \$100 billion in annual tax revenues from offshore tax abuses. The report claimed that 19,000 US customers had accounts at UBS worth an estimated \$18 billion.¹⁰² From the IRS inquiry, charges were eventually filed against UBS for not withholding taxes on foreign shell companies that had US beneficial owners. In February 2009, the bank agreed to a \$780 million settlement payment.

Events followed quickly after that. The IRS had been concerned, for some time, about the financial activities of UBS and, in February 2009, issued a "John Doe Summons," requiring UBS to disclose the account information of clients suspected of tax evasion who exhibited certain "patterns of facts" that conformed to "tax fraud or the like."¹⁰³ The summons requested account information on 52,000 UBS customers, who were thought to have

¹⁰⁰ Kohn, Kohn, & Colapinto, Bradley Birkenfeld, <https://kkc.com/whistleblower-case-archive/bradley-birkenfeld/> (Accessed on August 30, 2022).

¹⁰¹ United States Senate Permanent Subcommittee on Investigations: Committee on Homeland Security and Government Affairs, Tax Haven Banks and US Tax Compliance: Staff Report, July 17, 2008, <https://www.hsgac.senate.gov/imo/media/doc/071708PSIRreport.pdf?attempt=2> (Accessed on August 30, 2022).

¹⁰² *Ibid.*, p. 16.

¹⁰³ A "John Doe summons" is a group request that neither identifies nor charges any specific individual with a crime. Instead, it is a blanket order that could be used for information "fishing expeditions." The fraudulent use of offshore companies to evade taxes qualified as a "pattern of facts."

undisclosed UBS accounts worth \$14.8 billion. These charges were based on numerous intercepted messages sent by UBS executives in 2004, which referred to Bahamas-based tax havens for sheltering (i.e., hiding) the incomes of wealthy American citizens. From UBS's point of view, the summons could not have been more ill-timed, as it came just a day after the bank had agreed to resolve the IRS's 2007 investigation by paying \$780 million in fines and promising to disclose an undetermined number of customer names. Of the 52,000 US customers believed to have UBS accounts, the bank released, in 2009, about 4,450 names.¹⁰⁴

The blanket summons had far-reaching implications for Swiss banking secrecy laws, in general, and costly ramifications for UBS, in particular. Due to the gravity of the IRS's requests and its implications for Swiss banking secrecy, an agreement was concluded, in 2009, between the Swiss Confederation and IRS.¹⁰⁵ The *Agreement* was based on *Article 26 (Exchange of Information)* of the *Double-Tax Treaty of 1996*, which allowed the exchange of information, as necessary, to prevent "tax fraud or the like."¹⁰⁶ Responsibility for ensuring UBS's compliance was given to the Swiss Federal Office of Justice (SFOJ) and the FINMA. The Swiss Federal Tax Administration (SFTA) was chosen to make final decisions on the IRS's requests.

The Swiss-IRS *Agreement* in 2009 was challenged immediately, leading to a January 2010 ruling by the Swiss Federal Administrative Court (SFAC) that UBS could not (and should not) disclose the requested information.¹⁰⁷ Shortly after that, the Court ruled that the FINMA had violated Swiss law in 2009 by ordering UBS to disclose the names of approximately 4,450 US customers.¹⁰⁸ In the end, the controversy was resolved in 2010 when the Swiss Parliament reaffirmed its August 2009 *Agreement* with the IRS, and the

¹⁰⁴ John Carney, UBS to Give up 4,450 Names, Business Insider, August 19, 2009, <https://www.businessinsider.com/ubs-to-give-up-4450-names-2009-8> (Accessed on August 30, 2022).

¹⁰⁵ Internal Revenue Service, Agreement Between the United States of America and the Swiss Confederation on the Request for Information from the Internal Revenue Service of the United States of America Regarding UBS AG, a Corporation Established Under the Laws of the Swiss Confederation, August 19, 2009, <https://www.justice.gov/sites/default/files/opa/legacy/2009/08/19/us-swiss-agreement.pdf> (Accessed on August 30, 2022).

¹⁰⁶ Internal Revenue Service, Tax Convention with Swiss Confederation, October 2, 1996, <https://www.irs.gov/pub/irs-trty/swiss.pdf> (Accessed on August 30, 2022).

¹⁰⁷ Ximena Marinero, Switzerland Court Rules UBS May Not Disclose US Taxpayer's Financial Information, Jurist, January 23, 2010, <https://www.jurist.org/news/2010/01/switzerland-court-rules-ubs-may-not/> (Accessed on August 30, 2022).

¹⁰⁸ The Federal Administrative Court based its findings on the *Vienna Convention on the Law of Treaties*, ruling that Switzerland's Double Tax Treaty with the United States took precedence over the 2009 Agreement.

SFAC ruled that the *Agreement* was binding.¹⁰⁹ A byproduct of this ruling was that it sealed the fate of about 100 other appeals by UBS customers who opposed the transfer of information to the IRS.

In 2008, Hervé Falciani exposed 130,000 organizations and individuals who used Swiss-based HSBC Private Bank (Suisse) Geneva to launder money and evade taxes from 2006 to 2007.¹¹⁰ The disclosures were called “SwissLeaks” and, at the time, were reputed to be the biggest release of its sort in Swiss banking history. That same year, Rudolf Elmer disclosed confidential documents to WikiLeaks on the tax-evasion activities of Julius Bär.¹¹¹

Under normal circumstances, the March and September 2009 tax-evasion agreements would have been welcomed warmly by the international financial community, but Switzerland continued to be battered by bad news. Just a month before the agreement was signed, an executive manager at Neue Zuercher Bank and a Swiss lawyer were indicted by US federal court on charges of aiding and abetting US tax evaders by falsifying documents and setting up fraudulent investment accounts to conceal assets from the IRS.¹¹²

In December 2010, yet-another private banker, who had worked at UBS from 1999 to 2008, pleaded guilty in Miami’s Federal District Court to charges of helping a US citizen evade federal income taxes by not disclosing the creation of a hidden, offshore account at Basler Kantonbank.¹¹³ Though the amount was relatively small, this case gained notoriety because IRS recordings exposed the Swiss banker from a secret hotel meeting in Miami. Many felt that this investigatory tactic would send chills down the spines of both US tax evaders and their accomplices.

The situation did not improve during the coming year. In January 2011, another UBS employee was charged in Federal Court (Fort Lauderdale,

¹⁰⁹ The Swiss Parliament raised this Protocol to a special international treaty instead of a competent authority agreement. See Xavier Oberson, *ibid.*, p. 46.

¹¹⁰ Stephen Burgen, HSBC Whistleblower Hervé Falciani Facing Extradition to Switzerland, *The Guardian*, April 05, 2018, <https://www.theguardian.com/world/2018/apr/05/hdbc-whistleblower-herve-falciani-facing-extradition-to-switzerland> (Accessed on August 30, 2022).

¹¹¹ ITR, Exclusive: Rudolf Elmer Explains Why He Blew the Whistle on Julius Bär’s Secret Evasion Activities, January 12, 2012, <https://www.internationaltaxreview.com/article/b1fbfmg85k2gb/exclusive-rudolf-elmer-explains-why-he-blew-the-whistle-on-julius-b228rs-secret-evasion-activities> (Accessed on August 30, 2022).

¹¹² Jaclyn Belczyk, Swiss Banker, Lawyer Charged with Conspiring to Defraud US, *Jurist*, August 21, 2009, <https://www.jurist.org/news/2009/08/swiss-banker-lawyer-charged-with/> (Accessed on August 30, 2022). Also, see The United States Department of Justice, Swiss Banking Executive and Swiss Lawyer Charged with Conspiring to Defraud the United States, August 20, 2009, <https://www.justice.gov/opa/pr/swiss-banking-executive-and-swiss-lawyer-charged-conspiring-defraud-united-states> (Accessed on August 30, 2022).

¹¹³ Lynnley Browning, Ex-Banker for UBS Pleads Guilty in Tax Case, *The New York Times*, December 23, 2010, <https://www.nytimes.com/2010/12/23/business/global/23tax.html> (Accessed on August 30, 2022).

Florida) with helping between 100 and 150 US clients evade US taxes worth between \$400 million and \$500 million. The following month, four Credit Suisse private bankers were accused in US Federal Court (Alexandria, Virginia) of conspiracy and fraud in their efforts to foster US tax evasion. On the same day, the offices and homes of five other Credit Suisse employees were raided in Germany for suspicions of criminal fraud in helping German residents evade domestic income taxes.¹¹⁴

Collectively, the multiple charges against Switzerland's private bankers gave the nation's financial system a black eye at precisely the time it seemed to be liberalizing its banking secrecy rules. Some analysts wondered if the exposed crimes might dampen further liberalization efforts. Skeptics were convinced that the only reason Switzerland agreed to liberalize its banking secrecy laws was to heal the reputational setback it suffered in banking circles and curtail the relentless media coverage.

Enmity was not one-sided. Due to the turmoil and rising tide of globally intrusive US rules and regulations, some Swiss banks retreated from the US market. For example, in 2009, Wegelin and Co., a Swiss private bank, announced that it would stop doing business with US customers. Other banks followed suit by increasing fees and making it much more difficult for Americans to establish and maintain Swiss bank accounts. In March 2009, UBS closed more than 14,000 accounts held by US citizens.

In July 2011, Credit Suisse AG became the target of a US Justice Department criminal probe into cross-border private-banking services for US customers. Seven Credit Suisse bankers were indicted on charges of conspiring to help clients evade US taxes. US tax authorities offered limited amnesty to taxpayers who agreed to help build criminal cases against foreign bankers and advisors. Between 2009 and 2012, approximately 30,000 US taxpayers avoided prosecution by taking this offer.¹¹⁵

In February 2012, the US Justice Department leveled charges of tax fraud and conspiracy on St. Gallen-based Wegelin & Co., the oldest (founded in 1741) of Switzerland's "pure" private banks.¹¹⁶ The indictment cited Wegelin for purportedly funneling an estimated \$1.2 billion into offshore accounts

¹¹⁴ Lynnley Browning and Julia Werdigier, US Accuses Four Bankers Connected to Credit Suisse of Helping Americans Evade Taxes, *The New York Times*, February 23, 2011, <https://www.nytimes.com/2011/02/24/business/global/24tax.html> (Accessed on August 30, 2022).

¹¹⁵ David Voreacos, Swiss Bank Wegelin Charged With Helping US Clients Evade Taxes, February 3, 2012, <https://www.fa-mag.com/news/swiss-bank-wegelin-charged-with-helping-us-clients-evade-taxes-9647.html?print> (Accessed on August 30, 2022).

¹¹⁶ US v. Wegelin & Co et al., US District Court, Southern District of New York, No. 12-cr-00002.

for US citizens to avoid paying personal income taxes.¹¹⁷ Tax fraud and conspiracy violated Swiss law and, therefore, foreclosed the usual secrecy and confidentiality protections afforded to Swiss bank customers under the *BA*.

Wegelin had no US branches, which seemed to provide a firewall between it and US tax authorities. Still, the US Justice Department circumvented this problem by freezing about \$16 million of Wegelin's correspondent accounts at UBS AG in Stamford, Connecticut. The case carried some historical significance because it was the first time the US Justice Department had indicted a purely offshore bank on charges of enabling tax fraud. Wegelin was accused of opening accounts between 2002 and 2011 for US citizens with passports from other countries and booking them as non-US accounts. It was also accused of comingling funds and moving large amounts internationally by separating them into transfers under \$10,000, which is the threshold for US reporting.

Wegelin senior executives and representatives failed to appear at New York City court hearing in February 2012, which made the bank a "fugitive" in the eyes of the US justice system.¹¹⁸ Wegelin's lawyers and management explained that its absence was in deference to the bank's commitment to obey Swiss banking secrecy laws.¹¹⁹ In January 2013, Wegelin pleaded guilty to helping Americans evade taxes and permanently shut its doors, after more than 270 years in business.¹²⁰

In 2014, Credit Suisse pled guilty to helping wealthy Americans hide billions of dollars from US tax collectors and agreed to a \$2.6 billion fine, but the settlement allowed the bank to keep its customers' names confidential.¹²¹ Prosecutors accused Credit Suisse of helping US residents circumvent US reporting requirements by cleverly structuring transactions and supplying

¹¹⁷ Lynnley Browning, "US Indicts Wegelin Bank for Helping Americans Avoid Tax," Reuters, February 2, 2012, <https://www.reuters.com/article/us-usa-tax-swiss-indictment/u-s-indicts-wegelin-bank-for-helping-americans-avoid-tax-idUSTRE81203M20120203> (Accessed on August 30, 2022). These charges extended those filed in January 2012 against three of Wegelin's Zurich-based executives, who were charged with conspiring to help US clients avoid paying taxes.

¹¹⁸ Rita Emch, Bank Wegelin Shirks Second Court Hearing, SWI Swissinfo.ch, May 24, 2012, https://www.swissinfo.ch/eng/business/no-show-in-new-york_bank-wegelin-shirks-second-court-hearing/32759430 (Accessed on August 30, 2022). David Glovin and David Voreacos, Wegelin Bank Fails to Appear for Arraignment in US Court Case, May 23, 2012, *ibid*.

¹¹⁹ *Ibid*.

¹²⁰ Nate Raymond and Lynnley Browning, Swiss Bank Wegelin to Close after Guilty Plea, Reuters, January 04, 2013, <https://www.reuters.com/article/us-swissbank-wegelin/swiss-bank-wegelin-to-close-after-guilty-plea-idUSBRE9020020130104> (Accessed on August 30, 2022).

¹²¹ Danielle Douglas, Credit Suisse Charged in Tax Evasion Case, *The Washington Post*, May 19, 2014, https://www.washingtonpost.com/business/economy/credit-suisse-charged-in-tax-evasion-case/2014/05/19/772afeb2-dfb0-11e3-9743-bb9b59cde7b9_story.html (Accessed on August 30, 2022).

customers with credit cards linked to unreported Swiss accounts. This practice had been going on for decades until regulators caught onto the practice.

In 2016, the “Panama Papers” were published (i.e., leaked), revealing 11.5 million documents (i.e., 2.6 terabytes of data).¹²² The information revealed detailed financial attorney-client information on more than 214,488 offshore entities, wealthy individuals, and public officials, who used Mossack Fonseca, a Panamanian offshore law firm and corporate service provider. The documents revealed how Mossack Fonseca set up shell companies engaged in illegal activities, such as tax fraud, tax evasion, and circumventing international sanctions. The leak identified 12 world leaders, 128 other public officials and politicians, celebrities, businesspersons, and wealthy individuals from more than 200 countries.

The Panama Papers provided a new stimulus for the Swiss federal government to tighten its money laundering and tax-evasion controls. This encouragement was strengthened in November 2017 with the publication of the “Paradise Papers,” which disclosed 13.4 million confidential electronic documents (1.4 terabytes of data) relating to offshore investments for 120,000 people and companies. These documents originated from Appleby, a legal firm that provided corporate services for Estera and Asiatic Trust. The disclosures revealed information on tax havens worth trillions of dollars in offshore accounts held by residents across the globe, prompting the intergovernmental Financial Action Task Force (FATF) to the Swiss government to improve its money-laundering controls.

In February 2019, Julius Baer, a Swiss private bank, settled a US tax-evasion case by paying fines amounting to \$547 million. Later that year, UBS was fined €4.5 billion (\$5.4 billion) for assisting affluent French residents evade taxes.¹²³ Two years later (in 2021), the “Pandora Papers” were released by the International Consortium of Investigative Journalists (ICIJ). Their release exposed 11.9 million documents on tax havens representing more than 29,000 offshore bank accounts, some of which were owned by political leaders and other prominent individuals. Among the revelations were the names of 90 Swiss financial advisors who created obscure financial structures for wealthy clients. In one case, approximately 7,000 shell companies were set up by a Swiss consultancy over about 20 years. Publication of the Pandora Papers renewed the impetus for Swiss banks to report suspicious transactions.

¹²² The name “Panama Papers” was used because the documents were leaked from Panama.

¹²³ UBS appealed this decision, and in June 2021, the French Court rejected UBS’s constitutional challenge, Reuters, French Court Rejects Constitutional Challenge by UBS in Tax Case, [https://www.reuters.com/business/finance/french-court-rejects-constitutional-challenge-by-ubs-tax-case-2021-06-28/#:~:text=PARIS%2C%20June%2028%20\(Reuters\),27.&text=%22We%20acknowledge%20his%20decision](https://www.reuters.com/business/finance/french-court-rejects-constitutional-challenge-by-ubs-tax-case-2021-06-28/#:~:text=PARIS%2C%20June%2028%20(Reuters),27.&text=%22We%20acknowledge%20his%20decision) (Accessed on August 30, 2022).

For years, the nation has been criticized for not extending its anti-money-laundering provisions to lawyers and consultants, who have been at the heart of the scandals and the focus of outrage associated with the relatively recent leaks.¹²⁴

Fresh disclosures have pressured Switzerland to require advisors, trusts, and lawyers to conduct due diligence measures on clients to identify money-laundering risks and report suspicious financial activities to authorities. Advisors escape these requirements if they do not manage their clients' money. Switzerland has reacted by imposing such rules on these advisors.

Swiss insurance companies have also come into the crosshairs of concern. In May 2021, Swiss Life was fined \$25.3 million, ordered to pay \$52.1 million in restitution and forfeiture, and entered into a deferred prosecution agreement with the United States for its role in concealing \$1.45 billion in offshore insurance policies that helped American customers evade taxes.¹²⁵

The US “Swiss Bank Program”

In August 2013, the United States announced its *Swiss Bank Program*, which provided Swiss banks with a way to resolve their potential US criminal liabilities, without prosecution, by advising the US IRS of why they may have committed tax-related criminal offenses in connection with undeclared US-related accounts. Swiss bankers agreed to pay fines equal to:

- 20% of the maximum aggregate dollar value of US-related accounts as of August 1, 2008;
- 30% of the maximum aggregate dollar value on US-related accounts opened between August 1, 2008, and February 28, 2009; and
- 50% of the maximum aggregate value on US-related accounts opened after February 28, 2009.¹²⁶

¹²⁴ SWI Swissinfo.ch, Pandora Papers Shed More Light on Activities of Swiss Financial Advisors, October 04, 2021, <https://www.swissinfo.ch/eng/-pandora-papers--shed-more-light-on-activities-of-swiss-financial-advisors/47000108> (Accessed on August 30, 2022).

¹²⁵ Tom Hals and Jonathan Stempel, Swiss Life to Pay \$77.4 Mln to Settle US Criminal Tax Evasion Case, Reuters, May 14, 2021, <https://www.reuters.com/business/legal/swiss-life-pay-774-mln-settle-us-criminal-tax-avoidance-case-2021-05-14/> (Accessed on August 30, 2022).

¹²⁶ Joint Statement between the US Department of Justice and the Swiss Federal Department of Finance, <https://www.justice.gov/tax/file/631356/download> (Accessed on August 30, 2022). Also, see Urs Geiser, Details of Swiss-US Banking Deal Outlined, SWI Swissinfo.ch, August 30, 2013, https://www.swissinfo.ch/eng/tax-dispute-settlement_details-of-swiss-us-banking-deal-outlined/36782498 (Accessed on August 30, 2022).

Banks and individuals already under criminal investigation for their Swiss banking activities were not eligible for the program.¹²⁷

In particular, cooperating Swiss banks were required to:

- Disclose all their cross-border activities;
- Provide detailed account-by-account information on cases in which US taxpayers had direct or indirect interests;
- Cooperate with authorities' requests for account information;
- Provide detailed information on banks that transferred funds into secret accounts or that accepted funds when these accounts were closed;
- Close accounts of individuals who do not comply with US reporting obligations, and
- Pay appropriate penalties.

Between March 2015 and October 2020, 84 Swiss banks participated in the *Swiss Bank Program*.¹²⁸

US Foreign Account Tax Compliance Act of 2010

Early in the twenty-first century, the US government enacted the *QIP* in an effort to reduce tax evasion using offshore accounts. In light of the tax-evasion scandals since then (e.g., UBS/Bradley Birkenfeld, Hervé Falciani/HSBC Private Bank (Suisse), and Rudolf Elmer/Julius Bär), and to further reduce offshore tax evasion, in March 2010, the United States enacted the *Foreign Account Tax Compliance Act (FATCA)*. The *FATCA* required all foreign (non-US) financial institutions and foreign non-financial institutions to report annually to the US Treasury and IRS the identities, assets, and income of US residents, US citizens, and US green card holders who were the direct or indirect owners of foreign bank accounts.¹²⁹ Those financial intermediaries refusing to comply were subject to a 30% withholding tax on all US-sourced income (e.g., dividends, interest, and capital gains on dividend-earning or interest-earning investments).¹³⁰

¹²⁷ The United States Department of Justice, Joint Statement Between the US Department of Justice and the Swiss Federal Department of Finance (August 29, 2013), <http://www.justice.gov/iso/opa/resources/8592013829164213235599.pdf> (Accessed on August 30, 2022). See also The United States Department of Justice, Swiss Bank Program, Updated October 28, 2020, <https://www.justice.gov/tax/swiss-bank-program> (Accessed on August 30, 2022).

¹²⁸ The United States Department of Justice, October 28, 2020, Swiss Bank Program, *ibid*.

¹²⁹ The *FATCA* also covered accounts owned by foreign entities if US residents held more than a 10% equity interest.

¹³⁰ Ironically, as of January 2022, the United States had not yet complied with its own *FATCA* rules.

In February 2013, Switzerland signed an intergovernmental agreement (IGA) with the United States, which converted the unilateral *FATCA* into a bilateral international agreement. This IGA was unusual because it established a direct reporting relationship between participant Swiss banks and the US IRS (i.e., a Model II agreement). Individual Swiss financial institutions needed to register with the US IRS and file annual reports. In the beginning, the reporting threshold was for customers with balances above \$50,000.¹³¹

Before information was sent to the US IRS, Swiss account holders had the opportunity to view and either consent or object to its release. For customers who consented, Swiss banks sent the tax-related information directly to the IRS but without disclosing the account holders' identity or information (as per *Article 47* of the *BA*). If a customer objected to disclosure, the Swiss banks reported to the IRS the number and total value of all these accounts' undeclared assets. After that, the IRS could send a "request for administrative assistance" to the Swiss government for information on the entire group of "Recalcitrant Account Holders." Once a US information request was made, Switzerland's Federal Tax Authority was required to reply within eight months.¹³² The exchange of information under the *FATCA* was one-sided, with the IRS having no responsibility to provide Switzerland with information on Swiss residents having US bank accounts. One reason was that Switzerland did not ask for reciprocity.

The "Model II" agreement solved a significant potential problem. *Article 271 (Unlawful Activities on Behalf of a Foreign State)* of the *SCC* makes it a crime "to carry out activities on behalf of a foreign state on Swiss territory without lawful authority." Therefore, Swiss banks that divulged individual customers' information could be violating the *SCC*, but those that refused to provide information could be breaking the *FATCA* rules. The Model II agreement solved this dilemma.

Switzerland implemented the *FATCA* on July 1, 2014. Reporting requirements included Swiss banks and other financial intermediaries, such as fiduciaries, trust companies, life insurance companies, and asset managers. Participating Swiss financial institutions were required to perform due-diligence inspections of their accounts, identify US customers,¹³³ and withhold 30% of US-sourced income paid to those who refused to identify themselves. Reports

¹³¹ Model I agreements allow foreign banks to send information on US account holders to their national tax authorities, which then send the information to the US IRS.

¹³² United States Department of the Treasury, Agreement Between the United States of America and Switzerland for Cooperation to Facilitate the Implementation of FATCA, <https://home.treasury.gov/system/files/131/FATCA-Agreement-Switzerland-2-14-2013.pdf> (Accessed on August 30, 2022).

¹³³ Swiss customers subject to American taxes included US citizens, Green Card holders, and other individuals or companies legally domiciled in the United States.

to the IRS on US-owned accounts were to be made annually.¹³⁴ Sanctions were imposed on “uncooperative” banks that refused the *FATCA* registration, starting with a 30% withholding tax on *all* US-sourced dividends, interest, and other investment revenue.

The *FATCA* was reinforced on January 1, 2017 by US Section 871(m) of the US *Internal Revenue Code*, which sought to tax and report US-source income from derivatives and structured instruments, such as options, forwards, futures, swaps, equity security lending, and repurchase agreements.¹³⁵ Under Section 871(m), a structured product issued by a Swiss bank that referenced a US financial asset (e.g., equity) could be liable to pay US income tax, regardless of whether the beneficiary was a US or foreign resident. Despite efforts to reduce the reporting impact, Section 871(m)’s implementation was slow, with full implementation not expected until the end of 2022.

In autumn of 2020, US tax authorities used the *FATCA* group request to apply for administrative assistance to get information on non-consenting US account holders. These accounts were reported in aggregate as part of the *FATCA* annual report rather than individually, and disclosures were made under the terms of Switzerland’s *FATCA*. Switzerland’s Federal Tax Administration notified the account holders affected by notice in the Federal Gazette.

OECD’s Multilateral Convention on Mutual Administrative Assistance in Tax Matters¹³⁶

In October 2013, Switzerland became the 58th nation to sign the OECD’s *Multilateral Convention on Mutual Administrative Assistance in Tax Matters*

¹³⁴ US Department of the Treasury, Foreign Account Tax Compliance Act, <https://home.treasury.gov/policy-issues/tax-policy/foreign-account-tax-compliance-act> (Accessed on August 30, 2022). Model I agreements were based on the automatic exchange of information. They required banks to disclose all foreign customers’ information to the domestic tax authorities (e.g., the Swiss FTA), who then shared it with the tax authorities of countries where depositors were resident (e.g., the US IRS).

¹³⁵ Markus Weber and Truong-Chi Nguyen, Section 871(m) of the Internal Revenue Code (IRC): Providing Financial Institutions with a Better Basic Understanding, <https://www2.deloitte.com/ch/en/pages/financial-services/articles/section-871-m-of-internal-revenue-code.html> (Accessed on August 30, 2022).

¹³⁶ OECD, *The Multilateral Convention on Mutual Administrative Assistance in Tax Matters: Amended by the 2010 Protocol*, 2011, *ibid*.

(*AEOI*),¹³⁷ and the government ratified it in September 2016.¹³⁸ The *AEOI*'s goal was to improve international cooperation in the assessment and collection of taxes. It moved Switzerland soundly in the direction of deterring tax fraud and tax evasion, which was a step recommended in June 2011 by the Peer Review of the Global Forum on Transparency and Exchange of Information.¹³⁹ This *Convention* covers both *Common Reporting Standards* (*CRS*) and *Country-by-Country* (*CbC*) Reports.¹⁴⁰ *CbC* is part of the OECD's Inclusive Framework on BEPS (i.e., Base Erosion and Profit Shifting Project). Since 2018, Switzerland has required multinational companies and large branches or subsidiaries to prepare country-by-country reports, which Switzerland exchanges with its partner nations.¹⁴¹

The *AEOI* included the exchange of tax examinations and assistance in tax collection. It was ratified in September 2016, introduced on January 1, 2017, and the actual information exchange began in 2018. For some, the automatic exchange of information signaled the end of Swiss banking secrecy and forewarned future losses Switzerland could suffer in its competition with rising Asian financial centers, such as Hong Kong and Singapore.¹⁴² According to

¹³⁷ OECD, Switzerland Signs Multilateral Convention on Mutual Administrative Assistance in Tax Matters, October 15, 2013, <https://www.oecd.org/newsroom/switzerland-signs-multilateral-convention-on-mutual-administrative-assistance-in-tax-matters.htm#:~:text=> (Accessed on August 30, 2022). See also OECD Library, The Multilateral Convention on Mutual Administrative Assistance in Tax Matters, *ibid*.

¹³⁸ OECD, Switzerland Confirms Its Commitment towards Greater Tax Transparency—Ratifies the Convention on Mutual Administrative Assistance in Tax Matters, September 26, 2016, <https://www.oecd.org/ctp/exchange-of-tax-information/switzerland-confirms-its-commitment-towards-greater-tax-transparency.htm> (Accessed on August 30, 2022).

¹³⁹ The Global Forum on Transparency and Exchange of Information for Tax Purposes was established in 2000 and includes both OECD and non-OECD countries. It makes regular assessments of a nation's progress toward implementing the automatic exchange of international information. The Global Forum's goal is for all countries to follow the same rules (i.e., common reporting standards) with the same level of efficiency and effectiveness. Particular focus is put on legal and operational requirements regarding confidentiality and data safety. Countries are evaluated based on (1) compliance with confidentiality and data security, (2) whether national laws fully implement *AEOI*, (3) their networks with partner countries, and (4) administrative and information technology resources. See Rolf Wüthrich, Switzerland Steps up CRS Implementation, *International Tax Review*, February 11, 2021, <https://www.internationaltaxreview.com/article/b1qhp9yx08s1mp/switzerland-steps-up-crs-implementation> (Accessed on August 30, 2022).

¹⁴⁰ *CbC* is part of the OECD's "Inclusive Framework on BEPS" (i.e., Base Erosion and Profit Shifting Project). These reports are collected only from multinational corporations and large branches or subsidiaries.

¹⁴¹ Michael Shields, Era of Bank Secrecy Ends as Swiss Start Sharing Account Data, Reuters, October 05, 2018, <https://www.reuters.com/article/us-swiss-secrecy-idUSKCN1MF130> (Accessed on August 30, 2022). See also, Ollie A. Williams, Secret Banking Secrecy Became Extinct One Year Ago Today, *Forbes*, December 16, 2020, <https://www.forbes.com/sites/oliverwilliams1/2019/10/05/secret-banking-secrecy-became-extinct-one-year-ago-today/?sh=729981075cb8> (Accessed on August 30, 2022).

¹⁴² Michael Shields, *ibid*. See also, Ollie A. Williams, Secret Banking Secrecy Became Extinct One Year Ago Today, *ibid*.

AEOI's common reporting standards, financial institutions are required, on an annual basis, to collect specified account holder information and report it to their local tax authorities, which automatically exchange that information with the tax authorities where the account holders are resident. Important to note is that this OECD *Convention* had no effect on Switzerland's banking secrecy protections for domestic residents. Furthermore, while opening new responsibilities for outbound information on foreign residents with Swiss bank accounts, the *Convention* created opportunities for Swiss tax authorities to gain information on Swiss residents with foreign bank accounts.

Automatic Exchange of Information Act (AEOIA)

The AEOI's applicability to Swiss financial institutions and tax authorities required the government to repeal and enact national laws and regulations. On December 18, 2015, the government implemented the *Federal Act on the International Automatic Exchange of Information in Tax Matters (AEOIA)*,¹⁴³ which was followed in 2016 by the adoption of the *Ordinance on the International Automatic Exchange of Information in Tax Matters (AEOI Ordinance)*.¹⁴⁴

The *AEOIA* required disclosure of the account owner's name, address, country of residence, tax identification number, reporting institution, account balance, and capital income. In effect, it gave foreign tax authorities the information needed to check the accuracy of taxpayers' declarations of foreign financial accounts. The new legislation was reinforced when Switzerland updated its Federal Tax Authority guidelines, which explained the information technology requirements of the *AEOI*. The government also updated the Federal Tax Administration's (FTA) *AEOI Guidelines*, detailing how Swiss financial institutions must implement *AEOI*.

The *AEOIA* and *AEOI Ordinance* were amended in 2020 and put into force on January 1, 2021. Among their measures were requirements for Swiss condominium associations to disclose information on apartment owners. They also obliged Swiss financial institutions to retain documents that could

¹⁴³ The Federal Council, Federal Act on the International Automatic Exchange of Information in Tax Matters, January 1, 2021, <https://www.fedlex.admin.ch/eli/cc/2016/259/en> (Accessed on August 30, 2022).

¹⁴⁴ The Federal Council, Ordinance on the International Automatic Exchange of Information in Tax Matters, January 1, 2021, <https://www.fedlex.admin.ch/eli/cc/2016/786/en> (Accessed on August 30, 2022).

be useful for tax investigations and required that amounts be stated in US dollars instead of Swiss francs.¹⁴⁵

Information exchanges under the *AEOI* take place annually. Switzerland's first exchange of information was in September 2018 with the EU and nine other countries. It was based on activity in 2017 and involved about two million accounts.

The second exchange took place in October 2019, when Switzerland's Federal Tax Authority shared details with 63 partner countries on 3.1 million bank accounts held by foreigners. At the same time, the Swiss FTA received information on approximately 2.4 million accounts held by Swiss citizens/residents in 75 partner countries. The largest exchange of information was with Germany. Switzerland did not reciprocate with 12 nations due to their inability to meet data security and confidentiality requirements or these countries' choice not to receive the information.¹⁴⁶

The third exchange of information under the *AEOI* took place with 66 partner countries in October 2020. Details on approximately 3.1 million foreign-held bank accounts were disclosed to respective foreign tax authorities, involving about 8,500 Swiss financial intermediaries. In exchange, Switzerland's FTA received information on approximately 815,000 Swiss-owned accounts in 86 partner countries.¹⁴⁷

In 2021, Switzerland increased to 96 the number of countries with which it automatically exchanged bank customer information, sending out approximately 3.3 million financial accounts and receiving about 2.1 million in return.¹⁴⁸ There were 26 OECD countries from which Switzerland received information but did not reciprocate because they did not meet confidentiality and data security requirements.¹⁴⁹ The Swiss government proposed its intention, in 2021, to increase by 12 the number of countries with which

¹⁴⁵ The Federal Council, International Automatic Exchange of Information in Tax Matters: Federal Council Brings Act and Ordinance into Force, November 11, 2020, <https://www.admin.ch/gov/en/start/documentation/media-releases.msg-id-81079.html> (Accessed on August 30, 2022).

¹⁴⁶ SWI Swissinfo.ch, Switzerland Shares Details of 3.1 Million Bank Accounts Held by Foreigners, October 7, 2019, https://www.swissinfo.ch/eng/automatic-exchange_switzerland-shares-details-of-3.1-million-bank-accounts-held-by-foreigners/45280918 (Accessed on August 30, 2022).

¹⁴⁷ SWI Swissinfo.ch, Switzerland Shared Bank Account Data with 66 Countries in 2020, October 09, 2020, <https://www.swissinfo.ch/eng/switzerland-shared-bank-account-data-with-66-countries-in-2020/46087126> (Accessed on August 30, 2022). The reduction in foreign participation was because 38 countries experienced COVID-19-related difficulties, and Switzerland had continuing issues with nations that did not meet confidentiality and data security requirements.

¹⁴⁸ SWI swissinfo.ch, Switzerland Exchanges Tax Data with 96 States, October 11, 2021, https://www.swissinfo.ch/eng/switzerland-exchanges-tax-data-with-96-states/47018334?utm_campaign=teaser-in-querylist&utm_content=o&utm_source=swissinfoch&utm_medium=display (Accessed on August 30, 2022).

¹⁴⁹ Ibid.

it wishes to automatically exchange information.¹⁵⁰ If approved, the actual information exchange will start in 2023.

In October 2022, Switzerland's FTA reported more than 3.4 million financial accounts with 101 countries under the *AEOI*. Five new countries were added to the 2021 list of 96.¹⁵¹

Swiss Bankers' Association and SNB Efforts to Improve Customer Identification

In 1977, the Swiss Bankers Association (SBA) and the SNB took active steps to improve customer identification by authoring the *Agreement on the Observance of Care in Accepting Funds and Practice of Banking Secrecy*.¹⁵² The *Agreement* was a private understanding between Swiss banks and the SBA, which set minimum standards for the care that banks should take in determining their customers' identities for accounts, passbooks, security accounts, fiduciary transactions, and safe-deposit boxes. In doing so, it tried to stop or, at least, discourage accepting funds from criminal sources, assisting capital flight, and aiding tax fraud. Since then, the "know-your-customer" (KYC) principle has played an important role in Swiss efforts to crack down on illegal financial transactions.

The *Observance of Care Agreement's* timing was important because it came in the aftermath of the highly publicized financial affair, in which a manager at Credit Suisse's Chiasso branch funneled approximately \$900 million of Italian customers' deposits into highly speculative investments through Texon Finanzanstalt, a concealed, Liechtenstein-based holding company. The *Chiasso Affair* tarnished Switzerland's financial reputation, which made this *Agreement* an essential first step toward avoiding misuse.

Since its inception, the *Observance of Care Agreement* has been updated and revised many times to clarify guidelines on KYC, tax evasion, and capital flight. The newest revision came into force on January 1, 2020, imposing stricter self-regulatory standards for due diligence in money laundering and

¹⁵⁰ SWI swissinfo.ch, Switzerland Eyes Tax Data Exchange with Dozen More Countries, December 3, 2021, https://www.swissinfo.ch/eng/switzerland-eyes-tax-data-exchange-with-dozen-more-countries/47164100?utm_campaign=teaser-in-querylist&utm_content=o&utm_medium=display&utm_source=swissinfoch (Accessed on August 30, 2022). The countries are Ecuador, Georgia, Jamaica, Jordan, Kenya, Montenegro, Moldova, Morocco, New Caledonia, Thailand, Uganda, and Ukraine.

¹⁵¹ Swiss Confederation, Federal Tax Administration, Exchange of Information with 101 Countries on around 3.4 million Financial Accounts, October 10, 2022, <https://www.admin.ch/gov/en/start/documentation/media-releases.msg-id-90593.html> (Accessed on February 4, 2023).

¹⁵² Robert Louis Stauter, Swiss Bank Secrecy Laws and the US Internal Revenue, *Case Western Reserve Journal of International Law*, Case Western Reserve University, 1988, <https://scholarlycommons.law.case.edu/cgi/viewcontent.cgi?article=1713&context=jil> (Accessed on August 30, 2022).

terrorist financing cases. Among the many changes that have occurred during these years have been the agreement's name, which is now the *Agreement on the Swiss Banks' Code of Conduct with Regard to the Exercise of Due Diligence* (commonly abbreviated *CDB*) and its use of the KYC principle as a central component.¹⁵³

In particular, the *CDB* requires Swiss-domiciled banks to:

- Verify the identity of the contracting party (e.g., clients who wish to open accounts or rent safes);
- Establish the identity of the beneficial owner(s) of operating legal entities and partnerships;
- Establish the identity of assets' beneficial owner(s);
- Prohibit active assistance of capital flight; and
- Prohibit active assistance of tax evasion and similar acts.

Some *CDB* guidelines are voluntary, while others are mandatory. In addition to required procedures for identifying customers, they provide methods for retaining and inspecting information banks must keep on file. Furthermore, the *CDB* requires the FINMA to conduct statutory audits of Swiss-domiciled banks to monitor and evaluate their conformity to the guidelines. A supervisory board of at least five individuals is charged with investigating suspected violators and then acting when suspicions are verified. Signatory banks that do not comply with *CDB* standards may be fined as much as CHF 10 million.

Stopping illicit financial dealings is difficult because criminals keep finding new and better ways to circumvent the rules, leaving governments in the position of constantly trying to plug newly opened holes in their financial monitoring and enforcement systems. An example was Switzerland's focus on identifying and monitoring illicit financial transactions—rather than financial balances. The difference is significant. In 1994, Union Bank of Switzerland (UBS) was criticized for not discovering the \$150 million account of an alleged Colombian drug dealer. The account was dormant from 1970 to 1995 and was exposed only when the suspected drug kingpin's wife attempted to purchase Swiss real estate with assets from the account.¹⁵⁴

¹⁵³ SwissBanking, 2020: Agreement on the Swiss Banks' Code of Conduct with Regard to the Exercise of Due Diligence, *ibid.* *CDB* are the initials of the French phrase, "convention relative à l'obligation de diligence des banques."

¹⁵⁴ Peter Rodgers, UBS in Drug Money Laundering Case: Employee Suspended—Police Arrest, *The Independent*, Independent Digital News and Media, April 13, 1994, <https://www.independent.co.uk/news/business/ubs-in-drug-money-laundering-case-employee-suspended-police-arrest-colombian-woman-dollars-150m-account-frozen-1369982.html> (Accessed on August 30, 2022).

Automation enhanced government and monetary authorities' abilities to track unlawful transactions electronically, with greater accuracy and effectiveness. For this reason, cash payments, sometimes involving millions of dollars in physical currency notes, are still in use, but they present clear disadvantages of their own. The largest US currency note is worth \$100, making it heavier than cocaine of equivalent value. Consequently, transporting and safeguarding cash related to drug transactions can be as cumbersome as handling the drugs themselves.¹⁵⁵ This is one reason the Euro Area abandoned the large-denomination €500 note. CHF 1,000 notes are commonly used in Switzerland, and the Swiss franc has surpassed one-to-one parity with the US dollar, making possible the unfortunate use of physical Swiss francs for illegal transactions.

Switzerland's Whistleblower Legislation

In 2008, Bradley Birkenfeld leaked confidential customer information that implicated employees of UBS in tax evasion activities, Hervé Falciani leaked similar information on HCSB Private Bank (Suisse) Geneva, and Rudolf Elmer did the same with Julius Bär. These disclosures have raised serious questions about how to deal fairly with "whistleblowers." Switzerland has been relatively slow in modeling laws that protect the jobs of whistleblowers who expose corruption, data abuse, and irregularities at their companies. Two parliamentary motions were introduced in Switzerland during 2003, but the Federal Council rejected both. In 2008, a draft law began to work its way through the Swiss legislature. Signs of progress appeared in 2013 when the Swiss government amended the draft whistleblower legislation, which was approved in September 2014 by the Swiss Council of States. Hope faded in 2015 when the Federal Council rejected the draft for being too ambiguous.

The Federal Council released a revised proposal in 2018, with an improved structure and three-step process to protect whistleblowing employees. Step One required employees to report irregularities to their employers and follow their companies' internal policies and procedures. If the companies had no reporting systems or their responses were unsatisfactory, Step Two permitted employees to take their complaints to the authorities. In Step Three, employees could report to the media but only if the authorities' responses were inadequate.¹⁵⁶ The Swiss National Council rejected this

¹⁵⁵ Kenneth S. Rogoff, *The Curse of Cash*, Princeton: Princeton University Press, 2017.

¹⁵⁶ Yasmine Motarjemi, *Switzerland Could Now Lead the World on Whistleblowing Rules*, *le News*, May 15, 2015, <https://lenews.ch/2015/05/15/switzerland-could-now-lead-the-world-on-whistleblowing-rules/> (Accessed on August 30, 2022). Nic Carrington and Arjan Hulsbos, *Whistleblowing*

proposal in 2019. As of February 2023, Switzerland still had no official law to protect whistleblowers, causing lawsuits to be determined by case law.

In general, the countries acquiring or receiving stolen information have been most concerned about whether it can be used in a court of law and if its use should be authorized. Countries that are the sources of confidential bank information, such as Switzerland, have been most concerned about:

- If the information was acquired legally;
- If the individual taking and leaking confidential information should receive whistleblower status;
- If the stolen evidence can be used in a court of law (i.e., “fruit of the poisonous tree” doctrine); and
- If the nation should refuse to send or agree to send requested information to the countries acquiring or receiving it.¹⁵⁷

The Swiss Supreme Court faced three cases between 2017 and 2019. In 2017, it ruled that French requests should not be honored if they are based on evidence provided by stolen information. In 2018, the Court relaxed its position, ruling that Indian requests for information could be honored if the transfer was passive, meaning the recipient country received the information spontaneously, perhaps as an unrelated exchange-of-information request. In the third case, the Swiss Supreme Court ruled in 2019 that information stolen from the French branch of a Swiss bank could be used because they were acquired outside Swiss territory.¹⁵⁸ Therefore, the decision seems to be that Switzerland has legal authority to refuse information requests when a theft occurs in Switzerland and violates Swiss law, but it cedes control to foreign countries when the theft occurs abroad. In short, clients of Swiss foreign subsidiaries are not covered by *Article 47* of the *BA*. Considering the prison sentences given to Bradley Birkenfeld (40 months) and Hervé Falciani (5 years), Swiss whistleblowers appear to face stricter punishments than stated in the *SCC*.¹⁵⁹

Laws in Switzerland, What’s the Current Situation? Deloitte Switzerland, October 11, 2019, <https://www2.deloitte.com/ch/en/pages/forensics/articles/swiss-law-whistleblowing.html> (Accessed on August 30, 2022).

¹⁵⁷ Tatiana Falcão, Stolen Data, Whistleblower Protection, and Exchange of Information Agreements, SSRN, April 26, 2021, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3826913 (Accessed on August 30, 2022).

¹⁵⁸ Ibid.

¹⁵⁹ Rudolf Elmer was acquitted after spending more than seven months in jail.

Swiss Neutrality and Bank Customer Secrecy

The Swiss Confederation is based on democracy, federalism, and neutrality. Due to its diminutive size and strategic geographic location, the nation decided to maintain military neutrality at an early age. Indeed, since the Battle of Marignano in 1515, Switzerland has avoided active participation in all armed international conflicts. Its neutrality was codified in the 1815 Treaty of Vienna. Over centuries, Switzerland has earned its reputation as a “safe haven” from banking and currency instability and an effective shield against tyrannical governments. The nation has also earned the deserved reputation as a user-friendly environment for foreigners, with German-speaking customers visiting Zurich, Basel, and St. Gallen, French-speaking customers visiting Geneva and Lausanne, and Italian-speaking customers visiting Lugano. The combination of political neutrality and bank (customer) secrecy gave Switzerland a competitive international advantage in financial areas, which made it the beneficiary of significant capital inflows during turbulent times, such as during the Thirty-Years War (1618–1648), Franco-Prussian War (1870–1871), World War I (1914–1918), and World War II (1939–1946).

A new wrinkle in Switzerland’s determination to remain neutral occurred in 2022 when Russia invaded Ukraine in February. The European Union reacted by prohibiting Euroclear and Clearstream from servicing Russian customers. SWIFT did the same with Russian banks, and the United States and G7 followed quickly, imposing sanctions against Russia’s largest banks. In late February 2022, the Swiss Federal Council adopted the EU’s sanctions against Russia and formalized them with a March fourth ordinance, which (1) banned exports that might contribute to Russia’s military and technological enhancement, (2) froze more than CHF 6 billion worth of sanctioned Russian assets, (3) banned transactions with the Russian central bank, and (4) froze its overseas assets.¹⁶⁰ By April 2022, Switzerland had frozen Russian assets of approximately CHF 7.5 billion (USD 8.03 billion), including accounts and properties in four Swiss cantons.¹⁶¹ These decisions are likely to have interesting bank-secrecy implications.

¹⁶⁰ The Federal Council, The Ordinance of 4 March 2022 on Measures in Connection with the Situation in Ukraine (SR 946.2321.176.72), SR 946.231.176.72—Verordnung vom 4. März 2022 über Massnahmen im Zusammenhang mit der Situation in der Ukraine (admin.ch) (Accessed on August 30, 2022).

¹⁶¹ A timeline of Swiss and other nations’ sanctions against Russia and Belarus can be found at Richard Martin, Sanctions Against Russia—A Timeline, S&P Global: Market Intelligence, July 21, 2022, <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/sanctions-against-russia-8211-a-timeline-69602559> (Accessed on August 30, 2022).

Conclusion

Since the 1970s, the international exchange of information has moved from a framework of bilateral double taxation treaties to multilateral agreements that provide for the automatic exchange of bank customer information. Switzerland has been a significant part of this one-way movement toward greater transparency.

For the past 90 years, Switzerland has changed, modified, and nuanced its banking secrecy laws to accommodate the needs of a modernizing society and changing world. The ability to adapt its regulations and prosecute an increasingly wider variety of finance-related offenses is symptomatic of the general way in which the nation has reformed its capital markets. Stiffening banking secrecy laws to reduce illegal activities has sent a clear signal that Switzerland intends to compete and must compete internationally based on technological sophistication, reasonable costs, and quality service. Protections of legitimate privacy rights are still enforced, but Switzerland has cracked down on financial abuses.

Swiss laws attempt to balance an individual's constitutional right to privacy with the legitimate informational rights of society and third parties. The problem is that strict enforcement of bank customer secrecy can enable individuals who wish to engage in illegal financial activities. Switzerland has reacted to this challenge by changing its criminal and civil laws to fight crime and empower rightful claimants to bank customer information. Nevertheless, more needs to be done to get Swiss financial institutions back on track, particularly curbing the actions of rogue employees, who can damage good reputations that took decades to build.¹⁶²

Appendix 1: Administrative, Mutual, and Judicial Assistance in International Tax Matters

Introduction

Tax authorities in one country, such as the United States, cannot order financial intermediaries in another country, such as Switzerland, to freeze suspected tax evaders' accounts or deliver confidential information as evidence in court

¹⁶² An example of the financial improprieties at Credit Suisse can be found in Kalyeena Markortoff and David Pegg, *Suisse Secrets: Crooks, Kleptocrats, and Crises: A Timeline of Credit Suisse Scandals*, *The Guardian*, <https://www.theguardian.com/news/2022/feb/21/tax-timeline-credit-suisse-scandals> (Accessed on August 30, 2022).

cases. Such actions would be considered violations of national sovereignty. For this reason, nations have developed mutual ways of cooperating, mainly by directing these requests through approved channels and having competent foreign authorities carry out the tasks using their own rules and regulations. Switzerland provides administrative, mutual, and judicial assistance to foreign nations for civil, commercial, and criminal matters, but only for well-founded requests that adhere to the defined procedures in signed multilateral or bilateral agreements. Often, the information is consolidated, so the details of a single customer's account balance or account activity are unknown. When the release of customer-specific information is approved, Swiss authorities have an obligation to inform bank customers because these individuals have a right to appeal the ruling to the Swiss Federal Administrative Court (SFAC).

Switzerland's multilateral and bilateral mutual assistance treaties provide for the streamlined transmission of information from one signatory nation to another without recourse to consular or diplomatic channels. They are intended to replace the past's antiquated, indirect, and costly processes. With these agreements, administrative, mutual, and judicial assistance has become quicker, more efficient, and less susceptible to challenge.

Three Levels of Request Exchanges

Switzerland cooperates with foreign nations on three main levels for tax-related information exchanges: exchanges on request, spontaneous information exchanges, and automatic exchanges.¹⁶³ Exchanges on request are included in most bilateral taxation agreements. No information is exchanged without a formal request. Spontaneous exchanges occur when no formal application has been made, but the transmitting nation believes it will be useful for another country. Finally, automatic exchanges are defined by mutual agreements at pre-established regular intervals, such as under the OECD's *AEIOI* rules and regulations.¹⁶⁴

¹⁶³ OECD, Manual on the Implementation of Exchange of Information Provisions for Tax Purposes, January 23, 2006, <https://www.oecd.org/ctp/exchange-of-tax-information/36647823.pdf> (Accessed on August 30, 2022).

¹⁶⁴ Exchange of Tax-related Information. Federal Department of Finance. October 11, 2021, <https://www.efd.admin.ch/efd/en/home/steuern/steuern-international/exchange-tax-related-information.html> (Accessed on August 30, 2022).

International Administrative and Mutual Assistance

International administrative and mutual assistance are provided under international tax treaties with foreign tax authorities. Administrative assistance is for the exchange of information between tax authorities, based on bilateral double taxation agreements (DTAs), tax information exchange agreements (TIEAs), and the *Multilateral Convention on Mutual Administrative Assistance in Tax Matters*.¹⁶⁵

Mutual assistance is for information exchanges between judicial authorities, following the *Federal Act on International Mutual Assistance in Criminal Matters*, the *Fraud Prevention Agreement*, and the *Convention Implementing the Schengen Agreement (CISA)*.¹⁶⁶ If an information appeal involves an offense that is punishable in Switzerland, executing a mutual assistance request could involve coercive measures, such as a search of the premises or seizure of evidence. Foreign requests for mutual assistance can be denied for many reasons, such as based on an individual's political views, opinions, race, gender, nationality, religion, sexuality, or membership in a social or professional group.

For years, Switzerland's international administrative assistance was restricted to cases involving suspected tax fraud, but passage of the *Switzerland-United States Double Taxation Treaty*¹⁶⁷ in 1996 expanded its scope by permitting exchanges for purposes of preventing "tax fraud and the like" with respect to income taxes that were covered by the agreement.

In 2003, Switzerland and the United States provided practical guidance on the definition of "tax fraud and the like," and Switzerland committed its administrative assistance to exposing acts that might be categorized in the United States differently but have the same degree of illegality as tax fraud in Switzerland. A further step was taken in January 2004 when Switzerland and the Organization for Economic Cooperation and Development (OECD) agreed to exchange information on Swiss holding companies, which had been a contentious area for years and threatened to blacklist Switzerland as a "country that supports potentially harmful tax practices."¹⁶⁸

Administrative assistance limits were expanded in 2009 when Switzerland adopted the OECD's standards for information transfers. In March of the

¹⁶⁵ Ibid.

¹⁶⁶ Ibid.

¹⁶⁷ Convention between the United States of America and the Swiss Confederation for the Avoidance of Double Taxation with Respect to Taxes on Income: October 2, 1996, <https://www.irs.gov/pub/irs-trty/swiss.pdf> (Accessed on August 30, 2022).

¹⁶⁸ Swiss Info.ch, OECD Defuses Tax Row with Switzerland, <https://www.swissinfo.ch/eng/oecd-def-uses-tax-row-with-switzerland/3740722> (Accessed on August 30, 2022).

same year, the Swiss Federal Council took an important step when it adopted *Article 26* of the OECD's *Model Tax Convention*, which commits members to provide administrative assistance in well-founded tax cases, on explicit and warranted requests, "concerning taxes of every kind."¹⁶⁹

Switzerland uses its *Service for the Exchange of Information in Tax Matters (SEI)* for administrative and mutual assistance, which is part of Switzerland's Federal Tax Administration. The *SEI* is responsible for information exchanges connected to double tax agreements, spontaneous exchanges of information, tax office assistance under the *FATCA*, and international withholding tax agreements.¹⁷⁰ It is also responsible for judicial information exchanges, but enforcement is the responsibility of Switzerland's criminal justice system.

Article 42 (Administrative Assistance) of the *Federal Act on Swiss Financial Market Supervisory Authority (Financial Market Supervision Act, FINMASA)* gives FINMA the ability to ask foreign market supervisory authorities for information and may transmit information to these authorities.¹⁷¹ This information must be used exclusively to implement financial market law, and foreign authorities are bound by official or professional secrecy.

International Judicial Assistance

International judicial assistance is the exchange of information between judicial authorities based on the *Federal Act on International Mutual Assistance in Criminal Matters (IMAC)*.¹⁷² These exchanges are for pending criminal cases for which a foreign judicial authority seeks information and evidence.¹⁷³ International judicial assistance is also given in civil matters to deal with questions relating to the international competence of the courts and those relating to the recognition and execution of judgments. It includes the service of

¹⁶⁹ OECD, Articles of the Model Convention with Respect to Taxes on Income and on Capital (as they read on July 17, 2008), <http://www.oecd.org/dataoecd/43/57/42219418.pdf> (Accessed on August 30, 2022).

¹⁷⁰ Federal Tax Administration, Administrative and Mutual Assistance, February 11, 2021, <https://www.estv.admin.ch/estv/en/home/international-fiscal-law/administrative-mutual-assistance.html> (Accessed on August 30, 2022).

¹⁷¹ The Federal Council, Federal Act on Swiss Financial Market Supervisory Authority, <https://www.fedlex.admin.ch/eli/cc/2008/736/en> (Accessed on August 30, 2022).

¹⁷² The Federal Council, International Mutual Legal Assistance in Criminal Matters, Federal Office of Justice (FOJ), July 15, 2021, <https://www.bj.admin.ch/bj/en/home/sicherheit/rechtshilfe/strafsachen.html> (Accessed on August 30, 2022).

¹⁷³ The Federal Council, Judicial Assistance, Federal Tax Administration, November 4, 2021, <https://www.estv.admin.ch/estv/en/home/international-fiscal-law/administrative-mutual-assistance/judicial-assistance.html> (Accessed on August 30, 2022).

judicial and extra-judicial documents,¹⁷⁴ the recognition and execution of judgments, and obtaining evidence, such as through local inspections, expert opinions, and taking statements from witnesses. Switzerland follows the rules in bilateral double taxation agreements (DTAs) and the OECD's international standards for tax-related exchanges. To deal with nations that have no treaties or established practices for exchanging information, Switzerland adheres to provisions in the 1954 *Hague Convention*.¹⁷⁵

On October 26, 2004, Switzerland entered into the *Schengen/Dublin Agreement*, which committed the nation to closer cooperation in many areas with the EU, not the least of which was a reduction in border controls.¹⁷⁶ In the banking area, the *Agreement* committed Switzerland to a higher level of cooperation in cases requiring judicial assistance. Only in the area of legal assistance for direct-tax cases did the *Agreement* give Switzerland the authority to “opt-out.” This *Agreement* was followed by a bevy of other bilateral treaties with the EU focusing on areas, such as the taxation of savings and pensions, reduction of fraud, statistical cooperation, trade liberalization, and Swiss participation in EU's *Eurodac* system (i.e., fingerprint database system for identifying asylum seekers and unusual border crossings).

Specificity, Proportionality, Reciprocity, and Dual Criminality

Swiss compliance with foreign requests for administrative assistance is contingent on the foreign authority meeting three criteria: specificity, proportionality, and reciprocity. For judicial assistance, a fourth criterion, dual criminality, is added. These conditions are mainly in place to prevent unauthorized disclosures of confidential information and to inhibit information “fishing expeditions” by foreign authorities.

Specificity requires foreign authorities to make well-founded, substantiated requests for information, use it solely for the purpose(s) requested, and

¹⁷⁴ A “judicial document” is “any document that relates to contentious or non-contentious proceedings or the arrest of the assets of a debtor,” and “extra-judicial documents” include “documents intended to produce effects beyond any procedure that is ongoing in a court of law.” The Federal Council, Federal Office of Justice, International Judicial Assistance in Civil Matters: Guidelines, Swiss Confederation, January 2013, <https://www.rhf.admin.ch/dam/rhf/en/data/zivilrecht/wegleitungen/wegleitung-zivilsachen-e.pdf/download.pdf/wegleitung-zivilsachen-e.pdf> (Accessed on August 30, 2022).

¹⁷⁵ HCCCH, *10: Convention of 18 March 1970 on the Taking of Evidence in Civil or Commercial Matters*, <https://www.hcch.net/en/instruments/conventions/full-text/?cid=82> (Accessed on August 30, 2022).

¹⁷⁶ The Federal Council, *Schengen/Dublin*, <https://www.edoeb.admin.ch/edoeb/en/home/data-protection/police--defence-and-migration/the-schengen-agreement-and-the-dublin-regulation.html> (Accessed on August 30, 2022). The referendum approving this agreement was on June 5, 2005.

refrain from any unauthorized dissemination of the disclosed information. Not only must the targeted individual(s) be specified,¹⁷⁷ but there must also be (1) a clear description of the information sought, (2) a bank in which it is believed to be held, and (3) relevance to the proceedings. Proportionality prohibits the release of confidential information when allegations are either petty or threaten more substantial interests of a third party. Reciprocity means the foreign nation must reciprocate by granting Switzerland similar rights, and penalties must be similar in their degree of severity. Finally, dual criminality requires the alleged act(s) to be illegal in both the foreign (information-requesting) nation and Switzerland.

Switzerland's 2009 acceptance of *Article 26* of the OECD's *Model Tax Convention's* tax-evasion rules was given partly under duress because earlier in the year (April), the nation had been put on the OECD's *gray list* of tax haven countries (i.e., nations that had accepted OECD standards but had not fully implemented them). By September 2009, just six months after its assent, Switzerland had already renegotiated 12 double-tax treaties and was removed from the OECD's list.¹⁷⁸

In October 2013, Switzerland signed the OECD's *Multilateral Convention on Mutual Administrative Assistance in Tax Matters* (i.e., the "Convention" or *AEOI*). The *Convention* included the exchange of tax examinations and assistance in tax collection. It was ratified in September 2016, introduced on January 1, 2017, and the automatic exchange of information began in 2018.

International Agreements

Switzerland has signed numerous international assistance agreements that mandate administrative and judicial assistance in transferring confidential bank information to competent foreign authorities but only for specified areas of civil, commercial, and criminal law. Transmission is permitted only according to a signed international treaty with clearly defined procedural rules and regulations. *Article 271 (Unlawful Activities on Behalf of a Foreign State)* of Switzerland's *Criminal Code* imposes criminal charges on "any person who carries out activities on behalf of a foreign state on Swiss territory without lawful authority" (e.g., foreign attorneys who take or attempt to take depositions, serve process, or deliver legal documents, such as writs or summons).

¹⁷⁷ In 2012, the OECD modified its rules on information exchanges to allow "group requests," which cover cases that follow a similar "pattern of facts." Xavier Oberson, *International Exchange of Information in Tax Matters: Towards Global Transparency*, *ibid*.

¹⁷⁸ The OECD's standard for removing a nation from its blacklist or gray list was signing a minimum of 12 exchange-of-information agreements. It was called the "Rule of 12."

Article 299 (Violation of Foreign Territorial Sovereignty) of the SCC deems such actions violations of Switzerland's territorial sovereignty.

Some of Switzerland's most important multilateral agreements are the *European Convention on Judicial Assistance in Criminal Matters* (1959), *The Hague Convention on the Service Abroad of Judicial and Extrajudicial Documents in Civil and Commercial Matters* (1965), *The Hague Convention on the Taking of Evidence Abroad in Civil or Commercial Matters* (1970), *Federal Act on International Mutual Assistance in Criminal Matters* (IMAC) (1981), and *European Convention on Laundering, Search, Seizure and Confiscation of the Proceeds of Crime* (1993).

International Judicial Assistance Treaties

Switzerland's judicial assistance agreements and treaties define the rules and rights of international cooperation in criminal matters dealing with extradition, support for and transfer of proceedings, punishment of offenses, and execution of foreign judgments. The Swiss government will not cooperate under any agreement if signature countries do not meet basic human rights requirements, discriminate based on social group, race, religion, or nationality, or deny defendants the freedoms of speech and association. Swiss authorities also refuse to cooperate with foreign nations in double jeopardy cases.

Administrative Assistance Under Double Tax Treaties

Switzerland has double-tax treaties with more than 80 countries. Of them, more than 30 are based on the OECD's automatic disclosure model. A significant benefit for non-residents is receiving total or partial refunds for the taxes paid in Switzerland. Embedded in each of them are precise definitions of the types of taxes covered, procedures for transmitting information, and levels of administrative assistance. The primary purpose of these treaties is to prevent duplicative taxation of an individual's income (salary and royalties) and assets (e.g., wealth and inheritance) by different countries. For Switzerland, a crucial ingredient in negotiating such treaties is doing so without sacrificing bank customer confidentiality.¹⁷⁹

¹⁷⁹ The Federal Council, Double Taxation Agreements, 2022, <https://www.sif.admin.ch/sif/en/home/bilateral-relations/tax-agreements/double-taxation-agreements.html> (Accessed on August 31, 2022). For nations that do not have double taxation treaties with the United States, Switzerland allows domestic entities to credit against Swiss taxes the withholding taxes they pay to foreign countries on their remittances.

Appendix 2: History Behind the Banking Act of 1934

The *Banking Act of 1934* (BA) is about 90 years old, but there are still healthy debates about its passage. These historical disagreements are understandable because this *Act* resulted from a rich and complex interplay of internal and external politics, combined with considerable financial, political, and economic uncertainty. One way to frame the debate and clarify meaningful cause-and-effect relationships is to separate efforts to reform Switzerland's *bank secrecy* rules from efforts to improve its system of *financial regulation*. Bank (customer) secrecy addresses the nature and type of customer-specific information that financial institutions can (or must) reveal to third parties (e.g., the Swiss Department of Justice, Swiss tax authorities, or foreign officials and justices). The fundamental basis for Switzerland's banking secrecy is a firm conviction that Swiss citizens are "The Sovereign," and the Government has no right to disrespect a sovereign's privacy. This belief is in sharp contrast to countries with presidents-for-life, emperors, kings, and dictators, for which "Government" is "The Sovereign." Switzerland's fervent belief in the proper relationship between governments and sovereign individuals is the principal reason for its citizens' unwillingness to relinquish their privacy rights, even though the nation may be forced or decide to refuse such rights externally.

Financial regulation addresses the range of checks and balances that central banks and governments impose on the operations of financial institutions so that overarching national goals, such as limiting financial risks, ensuring competent management, and providing equal treatment under the law are achieved. The information needed for financial regulatory purposes is usually aggregated and, therefore, unlikely to reveal individual customer information. As a result, the release of consolidated customer information for purposes of federal regulation is rarely at odds with banking secrecy laws.

Pressure in Switzerland for greater national regulation of banks rose and fell during the early part of the twentieth century with the ebbs and flows of political, economic, and financial conditions. Public and government outcries for reform increased with the outbreak of significant financial and political problems but quickly receded when conditions improved or more important issues emerged.

Swiss Financial Regulation and Banking Secrecy Before World War I

Viewing Swiss banking secrecy from a broad historical perspective helps separate myth from reality. During the early twentieth century, Swiss banks were regulated by a motley assortment of cantonal rules and regulations. Before 1934, there were no specific national banking laws to protect customers' confidential financial information. Safeguards that existed were general in nature and housed under the umbrellas of Switzerland's civil, commercial, and criminal laws governing privacy and agency (see Fig. 4.1 at the beginning of this chapter). As a result, banks had greater liberties to regulate themselves, which opened the door to abuses of discretion. Fortunately, this loose regulatory environment served Switzerland well. Banks took their responsibilities seriously to protect and defend customers' confidentiality. A clear majority of the nation's bankers and elected officials (mainly conservative and right-of-center politicians) intended to keep it that way.

Of course, not everyone agreed, and one of the most prominent areas of contention stood squarely at the intersection of banking secrecy and tax "fairness." On the banking secrecy side, intense pressure was put on the Swiss government by politicians (e.g., Social Democrats) and their constituents for tax reforms that would reduce the nation's debts and more evenly spread the tax burden.¹⁸⁰ These advocates realized that tax reform would count for little if individuals were able to misreport their incomes and wealth by relying on bank (customer) secrecy laws to protect their dishonesty and deception. This possibility kept the Swiss banking secrecy issue in the crosshairs of controversy.

On the financial regulation side, political minority groups, such as farmers and blue-collar workers, wanted safeguards to protect their life savings from over-zealous, risk-taking bankers. They advocated greater national scrutiny over domestic financial institutions to keep bank risks within reasonable limits, thereby safeguarding *all* depositors' wealth (e.g., savings). These groups voiced justified concerns about financial transparency, but they also recognized that the foundation of Switzerland's economic strength rested, in part, on an internationally competitive financial system. By seeking too much safety and threatening too severely the nation's banking secrecy rules, reforms could have the unintended consequence of jeopardizing healthy growth, relatively low-interest rates, moderate inflation, and the nation's sound currency. It was a price few were willing to pay.

¹⁸⁰ Informal pressure to reduce Swiss banking secrecy laws existed as early as 1915 but was relatively weak and ineffective.

During the early years of the twentieth century, a political odd-couple was created when the Swiss Worker's movement, represented by the Socialist Party, joined forces with farmers and small business owners, represented by the Farmers', Commercial, and Citizens' Party.¹⁸¹ Both parties found common ground in attempts to pass federal legislation that protected constituents' savings from excessive risk-taking by banks. They also sought to defend borrowers from large creditors and spread the tax burden. Therefore, financial regulation and banking secrecy were the heart of intended reforms.

For the most part, this coalition was unsuccessful because its sword of success was double-edged. On the positive side, "success" held the potential for new federal bank regulations to balance the power struggle between large financial institutions and the average wage earner. It also had the potential to spread the nation's tax burden more evenly by exposing tax shirkers and cheats. On the negative side, "success" held the potential to trigger massive capital flight from Switzerland. Equally important, many worried that weakening banking secrecy protections could allow the federal government to abuse its newly acquired rights by inspecting Swiss residents' bank accounts for general tax purposes. It was clear that a significant portion of foreign capital inflows to Switzerland was stimulated by the nation's political and economic stability, military neutrality, low inflation rates, commitment to a strong currency, and moderate tax rates. Another important (albeit unquantified) portion was the nation's reputation for protecting bank customers' confidentiality.

Calls for financial reform in Switzerland grew louder between 1906 and 1915 when nearly 100 Swiss banks failed. They reached a peak between 1910 and 1913 when losses at approximately 45 Swiss banks were significant enough to rival the federal government's budgeted spending.¹⁸² Bank failures and mounting losses provided first-hand evidence of financial-risks-gone-wild, which empowered pressure groups to seek greater financial regulation. Like a flash-in-the-pan, these flames of financial reform in Switzerland were quickly extinguished during the summer of 1914 by the outbreak of World War I. The War's massiveness and urgency increased international demands

¹⁸¹ The Socialist party was called the "Socialdemokratische Partei," and the Farmers', Commercial, and Citizens' Party, which later became the Swiss People's Party, was the "Bauern-, Gewerbe-, und Bürgerpartei." In German, "Gewerbe" generally refers to a "small business."

¹⁸² Losses amounted to CHF112 million, rivaling the Swiss government's entire budget in 1912. From 1906 to 1915, 85 banking institutions were removed from the Commercial Register. See Robert U. Vogler, *Swiss Banking Secrecy: Origins, Significance, Myth*, Zurich: Association for Financial History, 2006, p. 11. Also, see Robert U. Vogler, *The Genesis of Swiss Banking Secrecy: Political and Economic Environment*, *ibid.*

for Switzerland's real and financial resources (especially by Austria, France, and Germany), diminishing the relative importance of bank reforms.

Swiss Financial Regulation and Banking Secrecy Between World War I and 1934

The years immediately following World War I were relatively prosperous ones for Switzerland. The nation's policy of military neutrality allowed its financial, economic, and social infrastructure to remain largely intact despite vast destruction in the countries surrounding it. Post-war reconstruction in Europe put heavy demands on Switzerland's financial and industrial sectors, resulting in healthy profits and strong economic growth. Latent public support for financial regulation resurfaced slowly due to a lack of sufficient popular, political, and central bank support. Similarly, attempts to modify general provisions in the Swiss *Code of Obligations*, *Civil Code*, and *Criminal Code* by enacting operating rules, in areas such as bank disclosures, licensing, auditing, debt-to-equity levels, liquidity, and accounting practices, were anemic, at best.¹⁸³ Without hard evidence that greater regulation would improve economic conditions and without convincing proof that Switzerland's financial system was in jeopardy, the force of momentum maintained the status quo.

These early post-World War I years were especially difficult for Switzerland's neighboring countries. Ravaged by war, with infrastructures torn and in need of repair, these governments sought to broaden both their tax bases and tax rates, which encouraged capital outflows to safe-haven countries. Switzerland's geographic position between Austria, France, Germany, Italy, and Liechtenstein made it an obvious destination for capital transfers. Swiss bankers, entrepreneurs, and a majority of politicians, who were "still firmly rooted in the liberal thinking of the nineteenth century,"¹⁸⁴ defended the notion that, if Switzerland's banking secrecy rules were less competitive than rival nations, it might suffer the consequences of corrosive capital flight. As well, the Swiss Bankers Association was concerned that enabling the government to inspect bank records "would shatter the confidence of domestic and foreign investors in the traditional discretion of Swiss commerce" and "many deposits would be withdrawn and hidden away."¹⁸⁵

¹⁸³ Ibid. Robert U. Vogler, *Swiss Banking Secrecy: Origins, Significance, Myth*, *ibid.*, p. 13.

¹⁸⁴ Ibid.

¹⁸⁵ 7th Annual Report of the Association of Representatives of Swiss Banking (Vereinigung von Vertretern des schweizerischen Bankgewerbes), Basel 1919, p. 42. Quoted from *ibid.* Robert U. Vogler, *Swiss Banking Secrecy: Origins, Significance, and Myth*, p. 15, *ibid.*

Major changes occurred in Switzerland during the late 1920s and early 1930s, which finally brought federal regulation to the Swiss banking system and provided federal guarantees of banking secrecy protection. The forces that caused these paradigm-shifting changes were mosaic in nature, involving economic and political factors, none, alone, with enough power to achieve such far-reaching goals. Of the two major reforms included in the *BA* (i.e., federal financial regulation and federal banking secrecy protection), it is fair to say that the stronger was financial regulation. As crucial as federal protections of bank customer secrecy were to some politically active constituencies in Switzerland, its inclusion in the *Act* rested on a giant wave created by the engine of financial reform.¹⁸⁶

The forces spurring financial reform were different from the forces prompting federal banking secrecy protections. Financial regulation was encouraged mainly by the economic and political turbulence in post-World War I Europe, overexpansion of credit during the 1920s by Switzerland's three major banks, and a cataclysmic reduction in global trade due to the Great Depression. By contrast, pressures to fortify banking secrecy provisions were driven by foreign governments' attempts to expand their tax bases into Switzerland, Adolf Hitler's suppression of German Jews and other minority groups, a financial affair at Basler Handelsbank, and a Supreme Court decision on sequestration policy.

Pressures to Increase Financial Regulation

Understanding the primary drivers behind the financial regulation reforms in Switzerland highlights the multifaceted interplay of economic, political, and social forces at work during the late 1920s and early 1930s. It also helps to better explain why the *BA* was passed and the relative insignificance of banking secrecy as the cause.

Turbulence in Surrounding Countries

In the years immediately following World War I and well into the 1920s, the Swiss economy was stable relative to nearby nations. The collapse of the Ottoman Empire (1908–1922), Russia's Bolshevik Revolution (1917), and Russian civil war (1919 – 1922) were followed, in relatively short order, by Germany's hyperinflation (1921–1923), the rise of Fascism in

¹⁸⁶ Sébastien Guex, The Origins of the Swiss Banking Secrecy Law and Its Repercussions for Swiss Federal Policy, *Business History Review* 74:2 (2000), 241–244, <https://doi.org/10.2307/3116693>.

Italy (1922–1945), and the ascent to power in Germany of Adolf Hitler and National Socialism (1921–1933). Changes in Switzerland’s neighboring countries occurred so fast and so often that the realm of possible future outcomes for world order became much more threatening and obscure. From this turmoil and uncertainty came a surge of interest in reaffirming and strengthening Switzerland’s domestic banking system’s safety to prevent unwanted spillover effects. Conservative politicians and their constituents advocated stricter bank regulations because they felt such rules preserved confidence in the Swiss banking system, prevented capital outflows, secured greater financial and commercial transactions, and promoted banking sector employment.

Overexpansion of Credit

Seeds of financial turmoil are often sewn during the halcyon days of economic growth because prosperity can be a narcotic that leads to overconfidence, excessive credit expansion, lax management, and mispriced risks. During the 1920s, the lending practices at three of Switzerland’s eight major banks¹⁸⁷ created dangerous exposures to German debtors. Efforts exerted near the end of the decade to curtail these risks were too little and too late. In 1931, a looming banking crisis caused Germany’s Brüning government to impose currency controls, which froze more than CHF 1 billion of Swiss bank deposits. Switzerland’s financial institutions were over-leveraged and highly vulnerable to the vagaries of external financing sources, public confidence, and changes in economic conditions. The frozen assets threatened the liquidity and solvency of three large Swiss banks.

Reduction in Trade Due to the “Great Depression”

Germany’s banking crisis put significant pressure on Swiss banks, but the financial coup-de-grâce was the economic destruction created by the Great Depression. The resulting increase in worldwide unemployment and reductions in global real GDP precipitated the misguided passage of international

¹⁸⁷ Switzerland’s eight major banks were: (1) Bank Leu, Zurich, (2) Banque d’Escompte Suisse (aka, Schweizerische Diskontbank, formerly, Comptoir d’Escompte de Genève), Geneva, (3) Basler Handelsbank, Basel, (4) Eidgenössische Bank (aka, Swiss Federal Bank), Lausanne, (5) Crédit Suisse (aka, Schweizerische Kreditanstalt), Zurich, (6) Swiss Bank Corporation (aka, Schweizerischer Bankverein), Basel, (7) Swiss Volksbank (aka, Schweizerische Volksbank), Zurich, and (8) Union Bank of Switzerland (aka, Schweizerische Bankgesellschaft), Zurich. There were excessive exposures at Basler Handelsbank, Eidgenössische Bank, and Schweizerische Volksbank.

trade barriers and currency controls, which reduced international trade and capital flows and hindered global economic recovery. Bilateral clearing agreements were set up to balance global trade flows, and capital restrictions were imposed to curtail excess pressures on fragile exchange rates. As a result, the pendulum of financial reform swung forcefully toward stricter directives.

The chill of diminishing economic activity spread internationally from the United States, which slowed and then reversed Switzerland's economic growth. Asset values of Switzerland's eight major banks fell by more than 50%. In the wreckage of declining business profitability, five Swiss banks had to be restructured, and three needed government assistance to survive.¹⁸⁸ Only Swiss Bank Corporation and Credit Suisse endured the crisis without government support or capital shrinkage.¹⁸⁹ Banque d'Escompte Suisse failed in April 1934, and between 1930 and 1939, approximately 60 other Swiss banks had closed their doors or were acquired.¹⁹⁰

Of these bank failures, one played a particularly important role in the government's decision to impose federal regulations on the country's banks. With 75% of its loans blocked by Germany's payment moratorium, Swiss Volksbank (SVB) was able to survive beyond December 1933 only after the federal government and Swiss National Bank (SNB) invested CHF 100 million (more than 20% of the government's budget) in the bank's cooperative capital.¹⁹¹ In effect, SVB became a nationalized bank when the government subsidized it, and its fate was sealed when the government took seats on SVB's board of directors.

Domestic and foreign residents' concerns about the safety of their Swiss franc deposits led to widespread support for stricter and more transparent national bank supervision. To many, the need for government assistance was a clear signal that Swiss banks had crossed the line of prudence and were no longer managing their affairs in careful, sensible, and discreet ways. The threat of a systemic meltdown of Switzerland's financial markets convinced many of the need for greater regulation. Critics asked a simple but compelling question: If Swiss banks needed and were willing to accept federal funds to survive in times of crisis, how could they object to greater federal regulation once conditions improved?

¹⁸⁸ Banque d'Escompte Suisse, Basler Handelsbank, and Swiss Volksbank needed government help.

¹⁸⁹ In 1945, Basler Handelsbank was acquired by Swiss Bank Corporation, and Eidgenössische Bank vanished when UBS acquired it.

¹⁹⁰ Robert U. Vogler, *Swiss Banking Secrecy: Origins, Significance, Myth*, *ibid.*, p. 12.

¹⁹¹ *Ibid.*, p. 25.

Pressure to Increase Banking Secrecy Rules

The passage of national rules and regulations to protect banking secrecy was a significant step in the nation's history. As mentioned earlier, the forces spurring these reforms differed from those prompting financial regulatory improvements.

Foreign Efforts to Increase Their Tax Bases

The 1920s were challenging for most European nations. Reconstruction costs and war debts from World War I were enormous, and the primary sources of government funding were from taxes on decimated income and wealth bases. For Germany, the vanquished nation, large reparation payments were added to its other numerous and significant obligations, making potential tax payments for German residents even larger.

Many Europeans (not just Germans) hid funds in Swiss bank accounts to avoid steep taxes, which reduced their nations' tax bases. Victorious countries, like France, placed scorn on residents who were suspected of shirking tax payments by hiding income in Switzerland, but particular anger was cast on German residents who were thought to be depriving military victors of their rightful share of negotiated reparation payments. Government officials and the agents of these tax-deprived nations began visiting Switzerland to identify individuals who were thought to be circumventing taxes by depositing funds there. Bribery and coercion of Swiss bank employees were also used to extract information about unreported accounts.

Hitler's Suppression of Jews and Other Minority Groups

The ascent to power of Adolf Hitler and his National Socialist Party during the 1920s and 1930s was at the expense of Jews and other minorities, who had their freedoms and property systematically confiscated.¹⁹² Hitler's SS agents traveled frequently to Switzerland to identify Jewish bank customers. Once identified, pressure was put on bank employees to disclose the wealth that these German residents stored abroad. From June 1931 until the passage of the *BA*, Germany passed several laws, regulations, and ordinances,

¹⁹² Nicholas Faith, *Safety in Numbers: The Mysterious World of Swiss Banking*, New York: Viking Press, 1982, pp. 49–56.

intended to confiscate the foreign assets of targeted groups.¹⁹³ Especially heinous were two laws passed in June and July 1933. The June legislation required domestic residents to disclose all foreign-held assets, with violators facing prison terms of up to three years.¹⁹⁴ In July, even stricter legislation was passed providing a legal basis for confiscating the foreign-held assets of Jewish residents.¹⁹⁵

Finance historian Helen Junz estimates that, in 1934, German Jews discharged \$1.6 billion worth of liquid assets for transfer to safer countries, such as England, Switzerland, and the United States.¹⁹⁶ Families from Austria, France, Hungary, The Netherlands, and Poland liquidated and transferred another \$1.4 billion in personal assets.¹⁹⁷ Swiss efforts to deprive Adolf Hitler the spoils of this immoral aggression against his own citizens were part of the reason for passing the *BA*. A proposed banking secrecy article had been initiated in 1931, and the first draft of *Article 47*, which remained virtually unchanged in the final *Act*, was composed in 1933. Therefore, both events occurred *before* the German government passed its extreme discriminatory and racial laws.¹⁹⁸

Basler Handelsbank Affair

Severe recessions in Germany and France during the early 1930s caused a desperate search by their governments for tax revenues. The Brüning government in Germany (March 1930–May 1932) and Herriot government in France (June–December 1932) responded by enacting measures to halt or reverse capital outflows to Switzerland and other nations. They combined these restrictive rules with government-sponsored espionage to uncover assets believed to be hidden in Swiss accounts.

¹⁹³ Claims Resolution Tribunal, Selected Laws, Regulations, and Ordinances Used by the Nazi Regime to Confiscate Jewish Assets Abroad, May 6, 2002, https://www.crt-ii.org/_nazi_laws/index.php.html (Accessed on August 30, 2022).

¹⁹⁴ Gesetz gegen Verrat der Deutschen Volkswirtschaft, June 12, 1933, https://www.crt-ii.org/_nazi_laws/_lpdfs/19330612.pdf (Accessed on August 30, 2022).

¹⁹⁵ Ibid. The Law Regarding the Confiscation of Assets in the Hands of Enemies of the People and the State was passed on July 14, 1933.

¹⁹⁶ Helen B. Junz, *The Volcker Commission: Report on Dormant Accounts of Victims of Nazi Persecution in Swiss Banks* (Bern), 1999 B., Report on the Pre-War Wealth Position of the Jewish Population in Nazi-Occupied Countries, Germany, and Austria. Appendix S. P.131. Report of Independent Committee of Eminent Persons, https://www.crt-ii.org/ICEP/ICEP_Report_Appendices_A-W.pdf (Accessed on August 30, 2022).

¹⁹⁷ Ibid., p. A-132.

¹⁹⁸ See Rolf H. Weber, *Swiss Banking Secrecy in Evolution*. *Banking & Finance Law Review*, 2013, 321. Robert U. Vogler, *The Genesis of Swiss Banking Secrecy: Political and Economic Environment*, *ibid.*

Accusations of tax evasion came to a boil in October 1932, when the Paris branch of Basler Handelsbank was searched, and evidence was uncovered showing the Swiss bank had actively aided and abetted French customers seeking to avoid coupon taxes. The amounts involved were estimated to be more than one billion French francs.¹⁹⁹ A search by French authorities of Basler Handelsbank's Paris premises uncovered a list with more than 1,000 customers' names.

Leftists used the "Paris Affair" to criticize the government for its half-hearted attempts to curb tax fraud. The French government reacted to the criticism by trying to use the affair to open Basler Handelsbank's books. Suits were filed against Basler Handelsbank, two employees were imprisoned, and the bank's assets in France were frozen, with their release made contingent on the French government's inspection of the Swiss bank's books. As for impact, the Paris Affair had a minor effect on Switzerland's financial system and economy because it caused only a temporary outflow of capital by some frightened depositors. Nevertheless, this incident served as a wake-up call because it was perceived by Swiss authorities as a foreign assault on the nation's banking secrecy rules, in particular, and Swiss sovereignty, in general.

Because the Paris Affair occurred in October 1932 and because the first draft of the *BA* appeared in February 1933, the sequence of events increases the likelihood of a cause-and-effect relationship. Passage of the *Act* was a way for the Swiss government to send a strong message to the French government that this was not a skirmish between the French government and a Swiss bank but rather a skirmish between two governments, and Switzerland would not back down.²⁰⁰

Supreme Court Decision on Sequestration Policy

A final major factor influencing Switzerland's decision to include banking secrecy protection in the *BA* was a Swiss Supreme Court ruling that broadened the legal grounds for sequestering documents in Swiss banks. Many politicians and bankers interpreted the ruling as potentially weakening the nation's confidentiality protections. Legal appeals by Basler Handelsbank and

¹⁹⁹ Sébastien Guex, *The Origins of the Swiss Banking Secrecy Law and Its Repercussions for Swiss Federal Policy*, *ibid.*, p. 249. Guex indicates the amounts were probably twice as large as FF1 billion, which would be equivalent to FF40 billion to FR50 billion at 2000 prices.

²⁰⁰ *Ibid.*, pp. 248–250.

Credit Suisse to reverse the decision were rejected, so the Swiss government responded to these perceived confidentiality threats by including federal protection for banking secrecy in the *BA*.²⁰¹

Provisions in the Swiss Banking Act of 1934

For opposition groups, the banking secrecy provisions in *Article 47* of the *BA* were disappointing because they might enhance the ability of bank customers to protect their identities, hide incomes and wealth, and circumvent taxes. One might ask then: If there were such opposition, why did banking secrecy provisions pass so swiftly and virtually uncontested? Switzerland's National Council cast 119 "yes" votes for the banking secrecy article to only one "no" vote, and members of the Council of States voted unanimously for the measure. The problem was that legislators were faced with a dilemma. There was clear public and legislative support for stricter financial regulation, but backing for federal banking secrecy protections was significantly weaker. The fear was that any legislation that opened the books of Swiss banks to the eyes of federal regulators (i.e., civil servants), who were supposed to be monitoring and controlling bank-wide exposures, would also reveal the names and account information of specific customers. If such information were disclosed formally or informally to domestic or foreign tax authorities, the repercussions (it was thought) could be severe and the consequences unintended.

Advocates of financial reform feared that blocking the banking secrecy provisions in *Article 47* risked losing needed support for their own initiatives. In the end, the perceived benefits from greater financial regulation trumped the possible costs that might result from federal laws to protect the confidentiality of bank customers and thereby enable the evasion of income and property taxes. Legislators concluded that it was better to savor one political victory and treat changes in Swiss banking secrecy rules as a battle to be fought in the future. As a result, the federal government was granted the ability to exercise *direct* supervision over the country's banks, and the confidentiality of customer information was protected by making its disclosure a federal crime.

²⁰¹ *Ibid.*, p. 254.

Appendix 3: Switzerland's Dormant Accounts Controversy: 1947–2023

Immediately after World War II and during the following seven decades, Switzerland was embroiled in an international controversy involving the return of dormant bank accounts to their rightful owners and beneficiaries. Swiss law required banks to transfer the deposits of deceased customers to their rightful heirs, so one might wonder about the source of this controversy. To separate rightful beneficiaries from charlatans who were unjustly claiming the accounts of deceased individuals, Switzerland required claimants to provide three pieces of information: a death certificate, name of the depositor's bank, and bank account number. Because families of Holocaust victims were not issued death certificates, these rules were the source of an impasse that resulted in many claims on Swiss bank accounts being met with rejections.

Early on, there were signs of progress with agreements such as the *London Declaration* (1943), *Safehaven Program* (1944), *Vesting and Marshalling Decree* (1945), and *Paris Reparations Agreement* (1946). They can be viewed as stepping-stones to the dormant account controversy that began in the mid-1990s and continued until the first part of the twenty-first century.

Dormant Accounts, Heirless Assets, and the Law

Countries differ with respect to ultimate beneficiaries of unclaimed, heirless assets. For example, US escheat laws transfer unclaimed tangible and intangible property to the State when owners die intestate and without any legally recognized heirs. The length of time a US bank account may lie dormant before it is transferred varies from state to state, but it is generally within the three-to-seven-year range.²⁰² After World War II and until relatively recently, Switzerland had neither escheat laws nor a statute of limitations on inactive bank deposits. These accounts remained with the banks until they were claimed, and account owners or their heirs had forever to claim them.

²⁰² Most US states have passed and updated their unclaimed property statutes or adopted the Revised Uniform Disposition of Unclaimed Property Act (RUPPA). These laws cover unclaimed property, including dormant bank accounts, uncashed checks, insurance policy proceeds, many types of royalties and leases, unrefunded deposits and overpayments, unpaid wages and benefits, union benefits, insurance refunds, gift certificates, distributable trust payments, police-held property, bankruptcy proceeds, the contents of safe deposit boxes, class action lawsuit judgments, unused airline mileage, credit balances on layaways and overpayments, refunds from property tax sales, lost or forgotten securities, undistributed estate proceeds, unclaimed hospital, nursing and retirement home accounts, unclaimed tax refunds, pre-paid service refunds, undistributed retirement accounts.

Between World War II and 1959, attempts were made to resolve any unanswered questions about unclaimed dormant accounts. In 1947, the Swiss Bankers Association (SBA) requested banks to report accounts that might belong to Nazi victims without heirs, but balances worth a total of only CHF 482,000 were reported. In a follow-up investigation in 1959, the reported amount was well below CHF 1 million.²⁰³ From 1949 to 1951, Switzerland transferred dormant accounts of Polish, Hungarian, and Romanian citizens, respectively, to these nations' central banks.²⁰⁴

In 1962, the Swiss Federal Council passed the *Registration Decree*, which required Swiss financial institutions to report all accounts that were dormant since May 9, 1945, and belonged to foreign or stateless individuals who had reasonable evidence of persecution on religious, racial, or political grounds.²⁰⁵ Accounts fitting this description were reported to the Claims Authority, which was an officially sanctioned unit created for this purpose. Non-compliance ran the risk of a CHF 10,000 fine or imprisonment.

By 1968, Swiss asset managers had reported to the Claims Authority unclaimed assets worth nearly CHF 10 million, of which it took responsibility for distributing approximately 45%. Distributing the rest (about CHF 5.5 million) was made the responsibility of asset managers. By 1974, two-thirds of the unclaimed funds were donated to the International Committee of the Red Cross in Geneva, and a third went to the Swiss Federation of Jewish Communities.

Dormant Account Controversy in the 1990s

The “Dormant Account Controversy” filled many newspaper articles in the 1990s. Media spread the belief that Swiss banks were still holding substantial amounts of Holocaust victims' assets, and access to them (as well as information about them) was being denied or hindered by Switzerland's banking secrecy laws.

Allegations against Swiss banks led to a tug-of-war involving public and private participants. Keeping these participants in mind is essential because the war against Swiss bank secrecy was fought on multiple fronts. Swiss banks and the Swiss National Bank (SNB) were on the one side. On the other side were Jewish organizations, such as the Jewish World Congress and

²⁰³ Hans J. Bär, *It's Not All about Money: Memoirs of a Private Banker*, New York, NY: Beaufort Books, 2008, p. 417.

²⁰⁴ *Ibid.* These nations relied on Swiss banks to identify, retrieve, and deliver the funds.

²⁰⁵ Glossary: In *Re Holocaust Victim Assets Litigation, Swiss Bank Claims*, <https://www.swissbankclaims.com/New%20Docs/Glossary.pdf> (Accessed on August 31, 2022).

World Jewish Restitution Organization, with considerable support from the US federal government, several US states (e.g., New York, Massachusetts, and Florida), and New York City.

The SBA reacted to media charges in September 1995 by publishing its *Guidelines on the Treatment of Dormant Accounts, Custody Accounts, and Safe-Deposit Boxes Held in Swiss Banks*,²⁰⁶ which included procedural ways for banks to maintain long-term, proactive contact with customers. These *Guidelines* tried to ensure that dormant funds were administered uniformly and not misused. They also restored connections with proxies, if possible, and provided user-friendly access to information about dormant accounts—and did so in ways that would not threaten customer confidentiality. A Banking Ombudsman was made responsible for handling inquiries.²⁰⁷

The SBA *Guidelines* considered an account dormant after ten years unless there was proof the account holder had died, or it was considered impossible to contact heirs or proxies. To manage inquiries, the Central Claims Office under the auspices of SEGA Aktienregister AG was made responsible for keeping records of dormant accounts. Banks were required to report to the Central Claims Office all dormant accounts valued at more than CHF 500.²⁰⁸ Individuals seeking information on dormant accounts would first contact the Central Claims Office, and, if the information in SEGA's files was a close match to any request, the call for information would be forwarded to the bank where the account was housed. Afterward, the bank was required to carefully examine the requests' merits. Those requests with standing would be settled promptly, but *all* bank decisions had to be reported to the Central Claims Office. In cases where a bank denied a request, justification had to be reported. If there were any residual concerns, the Central Claims Office had the power to examine the relevant bank records and make its own determination.

²⁰⁶ These guidelines went into force on January 1, 1996, and were subsequently revised in February 2000. Swiss banks continue to operate under these revised guidelines. Swiss Bankers Association, *Guidelines on the Treatment of Assets without Contact and Dormant Assets Held at Swiss Banks (Guidelines on Dormant Assets)*, 2014, https://www.swissbanking.ch/_Resources/Persistent/e/d/4/2/ed42bd4402f919d6e09d3f3f2953fceb308c186b/SBA_Guidelines_on_treatment_assets_held_at_Swiss_banks_2014_EN.pdf (Accessed on August 31, 2022).

²⁰⁷ Swiss Bankers Association, *Articles of Association*, September 16, 2021, https://www.swissbanking.ch/_Resources/Persistent/4/6/7/3/46735ab9aaa4eacb644546458ef2202a9cf309d6/Statuten_EN_2021.pdf (Accessed on August 31, 2022). The Swiss Banking Ombudsman was funded by the Swiss Ombudsman Foundation and elected by the Foundation's independent board. The Ombudsman acted as a neutral facilitator between Swiss-domiciled banks and customers who wished to make claims or inquiries, while avoiding lengthy and costly legal proceedings. The Ombudsman was not a court that passed legal judgments. Participants had ultimate rights to accept or reject recommendations.

²⁰⁸ *Ibid.* Swiss Bankers Association, *Guidelines on the Treatment of Assets Without Contact and Dormant Assets Held at Swiss Banks (Guidelines on Dormant Assets)*, 2014, p. 9.

In 1995, the SBA also commissioned a new survey, but its mandate was to report dormant accounts belonging to suspected holocaust victims. The SBA study on heirless assets in Swiss banks was published in February 1996, revealing 775 additional accounts with assets amounting to nearly \$32 million.²⁰⁹

Certain vested-interest groups saw Switzerland's attempts to uncover and publish dormant accounts as inadequate. On April 23, 1996, hearings chaired by N.Y. Senator Alphonse D'Amato on the deposits of Holocaust victims were held before the US Senate Banking Committee. In response to growing concerns, on May 2, 1996, the SBA signed a *Memorandum of Understanding (MoU)* with the World Jewish Restitution Organization and World Jewish Congress, which represented the Jewish Agency and Allied Organizations.²¹⁰ The *MoU* founded the Independent Commission of Eminent Persons (ICEP), whose mandate was to: (1) identify Swiss bank accounts that were owned by victims of Nazi persecution and (2) assess the behavior of Swiss banks concerning requests by these victims and their heirs for information about dormant accounts.

Independent Committee of Eminent Persons (Volcker Commission)

Headed by Paul Volcker, a well-respected former Chairman of the US Federal Reserve, the Independent Committee of Eminent Persons (ICEP) conducted, what came to be, the largest bank audit in the history of the world. To accomplish its mission, the ICEP identified all the accounts in Swiss banks from 1933 to 1945, matched them with the names of Nazi persecution victims, and then used other forensic means to identify as many other account holders as possible.

The decree that established the ICEP also created a claims resolution process that required Swiss banks to make public (i.e., publish) the names and other information on both residents' and non-residents' accounts that had remained dormant since 1945. The Swiss Federal Banking Commission (SFBC) paved a legal path for the release of this confidential information (on January 22, 1997) by declaring the ICEP's investigation an "official special

²⁰⁹ See Jodi Berlin Ganz, Heirs Without Assets and Assets Without Heirs: Recovering and Reclaiming Dormant Swiss Bank Accounts, *Fordham International Law Journal*, 1996, <https://core.ac.uk/download/pdf/144226141.pdf> (Accessed on August 31, 2022). PBS, A Chronology of Events, <https://www.pbs.org/wgbh/pages/frontline/shows/nazis/etc/cron.html> (Accessed on August 31, 2022).

²¹⁰ Report of the Independent Committee of Eminent Persons, Memorandum of Understanding, May 2, 1996, https://www.swissbankclaims.com/Documents/DOC_1_memo_of.pdf (Accessed on August 31, 2022).

audit.” This way, the SFBC ensured that Swiss bank secrecy rules did not interfere with the Commission gaining full access to needed bank account information.

The “Volcker Commission,” as it came to be known, spent three years investigating dormant Swiss bank accounts in search of their owners. Its investigation was broader than previous searches, such as the one in 1962, because the SFBC ordered Swiss banks to report all dormant accounts that were either open or opened by any non-Swiss resident between 1933 and May 9, 1945, and were inactive for more than ten years. Of the estimated 6.85 million accounts that fit these criteria, the Volcker Commission combed through 4.1 million of them, nearly 60%, auditing 59 Swiss banks and about 300,000 of the still-existing dormant accounts.²¹¹ Among the newly found assets were deposits of individuals who placed funds in Switzerland under assumed names and through agents, as well as Allied and Axis soldiers who died in battle, and individuals who, until 1989, were living behind the Iron Curtain.

The Volcker Commission’s work dovetailed with efforts of Swiss banks, the SBA, and the SFBC to publish the names of dormant account owners. On July 23, 1997, the SFBC published, in major newspapers around the world and on the Internet, a list of 1,872 names connected to 1,756 dormant accounts, which were valued at CHF 60.2 million.²¹² This was followed on October 20, 1997, by the publication of names connected to an additional 3,687 accounts valued at CHF 5.8 million, bringing the total to 5,559 accounts, with a gross value of CHF 66.0 million.²¹³ In addition, 10,758 accounts of Swiss residents and accounts of unknown domicile were made publicly available in Switzerland. Finally, 63,738 accounts with balances under CHF 100 were reported but not published. After the ICEP reviewed the 74,496 accounts that were not internationally published, those with

²¹¹ Information on the remaining 2.7 million accounts could not be found or were destroyed. One reason was, in 1945, Switzerland had 254 banks, accounting for 82% of Swiss bank assets. Between 1945 and 1996, mergers and acquisitions culled the number to 59. Most of these acquisitions (141 banks of the 254) were made by Switzerland’s “big banks,” which were praised by the ICEP for having excellent reporting records (72% coverage rate), second only to private banks (83% coverage rate). See Report of the Independent Committee of Eminent Persons, Report on Dormant Accounts of Victims of Nazi Persecution in Swiss Banks, n.d., https://www.crt-ii.org/ICEP/ICEP_Report_english.pdf, https://www.crt-ii.org/ICEP/ICEP_Report_english.pdf (Accessed on August 31, 2022).

²¹² Swiss Banks Publish Names of Dormant World War II-Era Accounts to Help Identify Rightful Owners, July 23, 1997, https://www.swissbankclaims.com/Documents_New/7.23.97.pdf (Accessed on August 31, 2022).

²¹³ PBS, A Chronology of Events, <https://www.pbs.org/wgbh/pages/frontline/shows/nazis/etc/cron.html> (Accessed on August 31, 2022).

balances less than CHF 100 were closed, and the proceeds were given to the International Committee of the Red Cross.²¹⁴

After three years of work and a cost of about \$800 million (i.e., CHF 1 billion), which Swiss banks paid, the ICEP issued its final report on December 6, 1999.²¹⁵ The Commission estimated that nearly 54,000 accounts were related to its targeted research, with a current value—mainly interest—between \$643 million and \$1.36 billion. Of the 4.1 million accounts in the ICEP’s “Accounts Databases,” 53,886 (i.e., 1.3%) were found to have “probable or possible relationships to victims of the Nazi regime.” Of these accounts, 72% were already closed, and 23% were suspended,²¹⁶ leaving 5% open and dormant.²¹⁷

In its final report, the ICEP:

1. Found the quality and quantity of data it retrieved from Swiss banks to be far beyond its expectations²¹⁸;
2. Praised Swiss banks (with only a few exceptions) for their cooperation;
3. Recommended the creation of a database containing all 4.1 million Holocaust-era accounts in Switzerland²¹⁹;
4. Found that, even though there were instances of account misuse by banks, there was no evidence of systematic or pervasive data alteration or information destruction by Swiss banks;

²¹⁴ See Chronology: In Re Holocaust Victim Assets Litigation, Holocaust Victim Assets Litigation, March 29, 2019, <https://www.swissbankclaims.com/Chronology.aspx.html> (Accessed on August 31, 2022).

²¹⁵ The ICEP’s expenditures were paid by Swiss banks. Estimated at CHF300 million, these expenses were mainly for the services of 650 certified forensic accountants from the United States, UK, Australia, and New Zealand, few of whom spoke German or French. The remaining cost (i.e., CHF500 million) was mainly for internal bank expenses to meet the reporting demands of the ICEP. Peter Nobel, *Swiss Financial Law in the International Context, Switzerland, and the Dispute on Holocaust-Related Claims, 1996–2001*, July 2008, ed. Peter Nobel, Kluwer Law, chapter 5, p. 171. Also, see Report of the Independent Committee of Eminent Persons, *Report on Dormant Accounts of Victims of Nazi Persecution in Swiss Banks*, *ibid.*

²¹⁶ A “suspense account” is an omnibus account that consolidates several dormant accounts and manages them jointly for administrative efficiency.

²¹⁷ Of the closed accounts, 93% were without explanation, 6% due to the collection of bank profits and fees, and 1% for payments to Nazi Authorities, *Report on Dormant Accounts of Victims of Nazi Persecution in Swiss Banks: Report of the Independent Committee of Eminent Persons*, p. 10, http://www.crt-ii.org/ICEP/ICEP_Report_english.pdf (Accessed on August 31, 2022).

²¹⁸ Swiss law only requires businesses to keep records for ten years, though most banks keep them for more extended periods. This practice enabled Swiss banks to provide significant back data to the ICEP.

²¹⁹ This recommendation was not accepted by the SFBC because it served no useful purpose in light of the Volcker Commission’s findings.

5. Confirmed evidence that some banks engaged in “questionable and deceitful actions” in the way they handled Holocaust victims’ accounts, but these actions occurred years in the past;
6. Urged Switzerland to adopt laws that require publication of dormant account owners and pass escheat laws, which mandate the transfer of inactive account (after a set period) to the canton or federal government, thereby removing any incentive for banks to withhold information;
7. Decided to restore to victims both the fees charged to dormant account holders and to multiply by a factor of ten the 1945 claims to reflect the 50-year opportunity cost of funds while they were in Swiss bank accounts²²⁰; and
8. Unanimously recommended that the SFBC publish the names of 25,187 account holders in the top three categories of the ICEP’s study (i.e., the most-likely-to-be victims’ accounts).²²¹

Progress to release additional names of possible dormant account holders was made well after the ICEP’s report was published. On January 13, 2005, Swiss banks published the names of approximately 3,000 additional account holders who were believed to be victims of Hitler’s persecution and could lay claim to deposits worth millions of dollars.²²²

The Eizenstat Report²²³

On October 3, 1996, a class-action suit²²⁴ was filed against the Union Bank of Switzerland, and a second, broader suit²²⁵ followed shortly after that

²²⁰ The ICEP used the Swiss long-term bond rate to measure this opportunity cost.

²²¹ Swiss banks complied with the recommendation by February 5, 2001. Subsequently, on June 10, 2004, approximately 3,000 additional names were authorized by the Court to be added to the “Account History Database.” The SFBC approved the plan on July 26, 2004, and published them on January 13, 2005. The additional names included ones identified by surveys in the 1950s and 1960s, and Eastern European Nazi victims who were transferred to their countries. See Chronology: In Re Holocaust Victim Assets Litigation, Holocaust Victim Assets Litigation, March 29, 2019, <https://www.swissbankclaims.com/Chronology.aspx.html> (Accessed on August 31, 2022). Also, see Holocaust Victim Assets Litigation, Claims Resolution Tribunal, <https://www.crt-ii.org/index.php.html> (Accessed on August 31, 2022).

²²² Ibid.

²²³ Stuart E. Eizenstat and William Slany, US and Allied Efforts to Recover and Restore Gold and Other Assets Stolen or Hidden by Germany During World War II, A Teacher’s Guide to the Holocaust, May 7, 1997, <https://fcit.usf.edu/holocaust/resource/gold/GoldMenu.htm> (Accessed on August 31, 2022).

²²⁴ *Weissshaus v. Union Bank of Switzerland*, No. 96 CV 4849 (Eastern District Court, NY).

²²⁵ *Friedman v. Union Bank of Switzerland*, No. 96 CV 5161 (Eastern District Court, NY).

on October 21, 1996.²²⁶ These legal actions charged certain Swiss banks and other financial entities (not the Swiss government) with collaborating and aiding Nazi persecution of Jews by retaining and concealing Holocaust victims' assets and laundering funds that were either looted by the German regime or extracted from the profits of slave labor.

Growing public interest in the controversy led the United States government, in October 1996, to commission its own investigation. Stuart Eizenstat, Special Envoy to the US Department of State, and historian William Slaney were chosen to lead the study. In May 1997, their report, entitled *US and Allied Efforts to Recover and Restore Gold and Other Assets Stolen or Hidden by Germany During World War II—Preliminary Study*, was published with its foreword penned by Stuart Eizenstat.²²⁷ On June 25, 1997, hearings on the “Eizenstat Report”²²⁸ were held before the US House Committee on Banking and Financial Services. These proceedings resulted in the June 1998 publication of the *Eizenstat-Slaney Report*, which was generally considered more balanced and fairer than the original Eizenstat report.²²⁹ With the benefit of time and perspective, the report was able to judge Switzerland in both absolute terms and in terms relative to other neutral nations, such as Spain, Portugal, Turkey, and Sweden. On both levels, Switzerland's actions were viewed more benignly than they were in the press and at the beginning of the process.

Independent Commission of Experts (Bergier Commission)

Shortly after the United States commissioned the Eizenstat-Slaney study, the Swiss Parliament established, by federal decree, on December 13, 1996, the Independent Commission of Experts: Switzerland—Second World War (ICE). Under the leadership of respected Swiss professor and historian, Jean

²²⁶ A third class-action suit, *World Council of Orthodox Communities v. Union Bank of Switzerland* CV 0461 (Eastern District Court, NY), was filed on January 29, 1996. Judge Edward R. Korman consolidated all these cases under the heading “Holocaust Victim Assets Litigation.” Professor Burt Neuborne became the lead counsel for the legal action.

²²⁷ Senate, Congress.Gov, Daily Digest, June 25, 1997, <https://www.congress.gov/congressional-record/1997/6/25/daily-digest> (Accessed on August 31, 2022). Eizenstat Report—US and Allied Efforts to Recover and Restore Gold and Other Assets Stolen or Hidden by Germany during World War II—A Preliminary Study, *ibid*.

²²⁸ *Ibid*.

²²⁹ US Department of State, William Slaney, *US and Allied Wartime and Postwar Relations and Negotiations with Argentina, Portugal, Spain, Sweden, and Turkey on Looted Gold and German External Assets and US Concerns About the Fate of the Wartime Ustasha Treasury*, https://1997-2001.state.gov/regions/eur/rpr_9806_ng_links.html (Accessed on August 31, 2022).

François Bergier, ICE's mandate (among other things) was to assemble a panel of renowned historical experts who would have unprecedented access to (otherwise) confidential information to clarify historical events. Rather than focus only on dormant accounts, the ICE's challenge was to conduct a detailed and thorough study of the involvements, if any, by Swiss banks, the SNB, and Swiss bank supervisors before, during, and immediately after World War II. Particular focus was on international gold transactions, currency dealings, trade flows, asset sales, fugitive capital, and looted goods. From its inception in December 1996, the Commission took about five years to complete its study, with a budget that eventually reached CHF 22 million.²³⁰

In July 1998, the Bergier Commission released its "Gold Report," which included preliminary findings regarding the SNB and German central bank during World War II.²³¹ In relatively rapid order, after that, the Commission published a series of notable findings. On December 10, 1999, it released a report on Swiss refugee policy (*Switzerland and Refugees in the Nazi Era*), followed on August 30, 2001, by the publication of eight additional reports.²³² By March 22, 2002, the Commission's work was complete, resulting in 25 individual reports. At a substantial cost, ICE produced a historical record, in German, that will generate interest for decades to come.

Swiss Banks' "Settlement Agreement" with the World Jewish Congress

In 1996, the World Jewish Congress filed a class-action lawsuit against Switzerland's three big banks, and by 1998, it had gained significant momentum.²³³ Flames of concern were stoked, in May 1997, by a provocative foreword written by Under Secretary of Commerce Stuart Eizenstat for a preliminary report to the House Banking and Financial Services Committee. More gas was thrown on the fire when New York City's treasurer used

²³⁰ Michael J. Bazylar and Amber L. Fitzgerald, *Trading with the Enemy: Holocaust Restitution, the United States Government, and American Industry*, 2002, <https://brooklynworks.brooklaw.edu/cgi/viewcontent.cgi?article=1349&context=bjil> (Accessed on August 31, 2022).

²³¹ Independent Commission of Experts Switzerland—Second World War ICE, *The Most Important Information at a Glance Chronology of the ICE*, <https://www.uek.ch/en/index.htm> (Accessed on August 31, 2022).

²³² These reports were entitled (1) Flight Assets/Looted Assets, (2) Interhandel, (3) Clearing, (4) Transit, (5) Electricity, (6 & 7) Swiss Subsidiary Companies in the "Third Reich" (two studies), and (8) Swiss Refugee and Foreign Economic Policies as covered by the Press.

²³³ The World Jewish Congress (WJC) was founded in Geneva in 1936 as a diplomatic arm of Jewish people worldwide. The first Zionist Congress took place in Basel.

the controversy to ban UBS from participating in a billion-dollar bond issue. Similar actions were threatened by other municipal and state treasurers (e.g., California, Massachusetts, and New Jersey). Some members of the US Congress, such as Senator Alphonse D'Amato, threatened to delay or prevent the proposed merger of UBS and Swiss Bank Corporation.²³⁴ These actions, combined with threats of further retaliation, caused Credit Suisse and UBS, on January 26, 1999, to settle this class-action suit by agreeing to pay \$1.25 billion into a "Settlement Fund" to cover any remaining claims by Holocaust survivors or victims' heirs from World War II.²³⁵ For the agreement to be valid, 17 major worldwide Jewish organizations had to sign "organizational endorsements," thereby, assuring the Swiss banks that they would not revive their claims in the future. The required signatures were assembled by March 30, 1999.

Starting in June 1999, worldwide notice was given (in 27 different languages) to survivors, heirs, and interested parties about this "Global Settlement." *Initial Questionnaires* were distributed to potential claimants, of which approximately 600,000 were returned. Disbursements were paid to five settlement classes (see Table 4.2) that included individuals deemed to be "Victims or Targets of Nazi Persecution."²³⁶ In return for this sizeable payment, the agreement called for a blanket release from all claims on Swiss banks, the SNB, the Swiss government, and Swiss industry. In addition, calls for political sanctions or penalties on Switzerland were to be stopped immediately.

The *Settlement Agreement* required the appointment of a *Claims Resolution Tribunal Special Master (CRT Special Master)*, whose job was to devise an allocation and distribution plan for the funds. On December 15, 1998, the Court appointed Judah Gribetz, a recognized New York attorney who spent years in government service, to fill this role. Gribetz's distribution proposal was published on September 11, 2000, in a two-volume, 900-page document entitled *Proposed Plan Allocation and Distribution of Settlement Proceeds*. After that, this report was sent to the more than half-million individuals who had returned the *Initial Questionnaires*. In recognition of the number and value of

²³⁴ This merger eventually took place on June 28, 1998, after which the new bank became known as UBS (i.e., the name "Union Bank of Switzerland" ceased to exist).

²³⁵ Tentative agreement was reached on August 12, 1998. On August 2, 2000, Swiss banks agreed to implement recommendations in the Volcker Report, and, despite the Volcker Report's finding that claims against Swiss banks could *not* be as much as \$1.25 billion, final approval was given by Judge Edward Korman on August 9, 2000. He also made this decision in light of the final Eizenstat Report, which cast a kinder light on Switzerland relative to other neutral countries, such as Portugal, Spain, Sweden, and Turkey.

²³⁶ The groups were Jews, Roma (i.e., Romanian gypsies), Jehovah's Witnesses, disabled, homosexuals, and heirs. A sixth category was added later to cover alleged victims of insurance companies. Only Slave Labor Class II was unrestricted by the categories of individuals.

Table 4.2 Five settlement classes

Deposited Assets Class	Individuals with bank accounts and other assets deposited in Swiss financial institutions
Slave Labor Class I	Individuals “who performed slave labor for German and other companies which may have transacted their profits through Swiss entities”
Slave Labor Class II	Individuals who “performed slave labor for Swiss entities, defined as ‘any facility or work site, wherever located, actually or allegedly owned, controlled, or operated by any corporation or other business concern headquartered, organized or based in Switzerland or any affiliate thereof”
Refugee Class	Individuals “who were denied entry into or expelled from Switzerland, or admitted into Switzerland but abused or mistreated”
Looted Assets Class	Individuals “whose assets were looted by the Nazis and disposed of or transacted through Switzerland or Swiss entities”

Source Holocaust Victim Assets Litigation (Swiss Banks), <http://www.swissbankclaims.com/> (Accessed on August 31, 2022)

accounts that the Volcker Commission uncovered, the proposed plan recommended the allocation of up to \$800 million for individual claims (i.e., to the “Deposited Assets Class”), and a deadline of December 11, 2004, was eventually set for this category’s claimants.²³⁷

The remaining funds were to be distributed among four major groups: slave laborers (two categories), refugees, and individuals whose accounts were looted during the War. Approximately 200,000 surviving slave laborers (Class I and Class II) would receive \$1,450 each. Surviving refugees who were denied entry or expelled from Switzerland would receive \$3,625 each. Mistreated Swiss residents would receive \$725 each, and \$259 million was to be allocated to members of the “Looted Assets Class.”²³⁸ Due to its broad definition, the “Looted Assets Class” included the largest number of individuals, potentially counting anyone who tried to escape Nazi tyranny. It was also difficult to prove that any of these individuals’ transactions were channeled through Swiss banks or Swiss financial entities. Unfortunately, it was also the

²³⁷ This deadline was initially set at August 11, 2001, and extended three more times to December 31, 2004.

²³⁸ Holocaust Victim Assets Litigation (Swiss Banks), Overview of Litigation and Settlement, April 14, 2020, <https://www.swissbankclaims.com/Overview.aspx.html> (Accessed on August 31, 2022).

neediest group, so the Court found a *cy pres* remedy²³⁹ that allocated \$259 million to them over the ten years ending in 2011.²⁴⁰

Of the \$1.288 billion that was finally distributed (see Table 4.3), approximately 80% went to Jewish Nazi victims or their heirs and the remainder to non-Jewish groups, such as Roma, Jehovah's Witnesses, homosexuals, and disabled individuals, as well as needy (e.g., old and poor) members of the "Looted Assets Class," slave laborers, and refugees.²⁴¹ A relatively small payment (approximately \$1.4 million) was made to legitimate claimants of unpaid insurance policies, and, finally, \$10 million was allocated for the Victim List Fund to memorialize the sufferers and survivors of Nazi persecution.²⁴² By the end of 2010, nearly all the funds had been distributed to 458,436 individuals (see Table 4.3).²⁴³

Swiss Humanitarian Fund

As the dormant account battle grew and intensified, Switzerland's international image became like the distorted image in a circus mirror. To remedy this, on February 26, 1997, the "big three" Swiss banks combined contributions with others in the private sector to create a humanitarian fund called the Fund for Needy Victims of the Holocaust/Shoa (aka, Swiss Humanitarian Fund or Holocaust Fund). Its purpose was to provide relief worldwide from natural disasters, genocide, poverty, and violence. Funded initially by CHF 100 million from Switzerland's major banks, the trust grew to CHF 273 million after donations from the SNB, acting in a private capacity, and private companies.²⁴⁴ Over the course of its five-year history, the Swiss Humanitarian Fund distributed CHF 295 million to approximately 312,000

²³⁹ A "*cy pres* remedy" is one that comes "as near as possible" to an original intent. It is often invoked in cases where the intended objective of a will or agreement becomes unachievable, impractical, or illegal to perform. In such cases, the court can amend the original agreement or will to come as close as possible to the initial intent.

²⁴⁰ This period was later increased to 15 years. See Holocaust Victim Assets Litigation (Swiss Banks), Overview of Litigation and Settlement, April 14, 2020, *ibid*.

²⁴¹ *Ibid*.

²⁴² This plan (In re Holocaust Victim Assets Lit., 2000 WL 33241660, Eastern District Court) was approved by Judge Edward Korman on November 22, 2000.

²⁴³ Holocaust Victim Assets Litigation Case No. CV 96-4849 Swiss Banks Settlement Fund Distribution Statistics as of January 31, 2020 (Amounts Approved and Paid by the Court), January 31, 2020, <https://www.swissbankclaims.com/New%20Docs/Distribution%20Stats.pdf> (Accessed on August 31, 2022).

²⁴⁴ Final Report: Swiss Fund for Needy Victims of the Holocaust/Shoa, 2002, https://www.files.ethz.ch/isn/109711/FDA_Final%20Report%20on%20Swiss%20Fund%20for%20Holocaust%20Victims_engl.pdf (Accessed on August 31, 2022).

Table 4.3 Swiss Banks Settlement Fund Distribution Statistics as of January 31, 2020 (Amounts Approved by the Court) *Holocaust Victim Assets Litigation Case No. CV 96-4849*

Victim classes	Funds authorized	Funds paid	Approved claimants
Deposited Assets Class	\$726,272,177	\$719,745,337	≈18,096
Looted Assets Class	\$259,441,763	\$259,441,763	≈237,464
Slave Labor Class I	\$287,133,350	\$280,212,703	198,023
Slave Labor Class II	\$826,500	\$696,448	570
Refugee Class	\$11,600,000	\$11,526,476	4,158
Insurance Awards	\$1,464,786	\$1,400,251	118
Incentive Award	\$575,000	\$575,000	7
Victim List Programs	\$14,500,000	\$14,500,000	n/a
Grand total	\$1,301,813,576	\$1,288,097,978	≈458,436 claimants

Source Holocaust Victim Assets Litigation Case No. CV-9-4849, Swiss Banks Settlement Fund Distribution Statistics as of January 31, 2020 (Amounts Approved and Paid by the Court), <https://www.swissbankclaims.com/New%20Docs/Distribution%20Stats.pdf> (Accessed on October 19, 2021)

survivors of Nazi persecution.²⁴⁵ In 2002, it was closed due to concerns about its relative lack of size, efficiency, and speed. The CHF 12 million (\$8 million) remaining in the Fund were divided between the World Jewish Restitution Organization and the Swiss Red Cross.²⁴⁶

Claims Against the Swiss Insurance Industry

One group that was largely untouched by the \$1.288 billion agreement was the Swiss insurance industry. Threatened with class action suits of their own, Swiss and other European insurance companies came to an understanding with Jewish organizations in August 1998 to create the International Commission on Holocaust Era Insurance Claims (ICHEIC). During the next three years, the names of about 45,000 individuals with potential claims were reported—mainly by Allianz, Axa, Generali, Winterthur, and Zurich insurance companies.²⁴⁷ The *Swiss Banks Settlement Insurance Claims Process* was set up to provide a means for Nazi victims or their heirs to make claims on insurance companies (“participating companies”) on which contracts were open or opened between 1920 and 1945. Under the process, legitimate

²⁴⁵ Chronology: In Re Holocaust Victim Assets Litigation, March 29, 2019, <https://www.swissbankclaims.com/Chronology.aspx.html> (Accessed on August 31, 2022).

²⁴⁶ Swiss Fund for Needy Victims of the Holocaust/Shoa, Final Report, 2002, *ibid.*

²⁴⁷ ICE’s final volume in 2002 dealt with insurance companies during and after World War II.

owners or heirs of unpaid policies could have their claims adjudicated by Claims Resolution Tribunal (CRT). On June 28, 2001, the *Claims Process Guidelines for Insurance Claims* were judicially approved and put under the purview of the CRT. It stipulated that the Settlement Fund be financed by Swiss insurance companies, with a maximum \$25 million payment to compensate victims.

Conclusion

Switzerland's neutrality dates back to the 1515 Battle of Marignano in northern Italy and has been officially recognized by European nations since the Congress of Vienna in 1814–1815. The nation's long-standing tradition of protecting private property, defending national sovereignty, and following the international rules of the game has deep roots in its commercial, civil, and criminal codes, as well as the nation's Napoleonic legal heritage. Since 1934, Switzerland has had federal laws requiring banks and their employees to protect customers' confidential financial information. Strict neutrality and strict banking secrecy rules have created a burning conflict that erupted into a public campaign for access to dormant accounts and huge payments.

A major takeaway from Switzerland's dormant accounts controversy is a positive one. Despite the nation's vigorous defense of federal banking secrecy laws, which protect an individual's inalienable rights to privacy, these laws did not impede the investigations of the Independent Committee of Eminent Persons (i.e., Volcker Commission), *Eizenstat-Slaney Report*, or Independent Commission of Experts (Bergier Commission). The system was adapted to provide empathy and compensation to the descendants of Nazi victims.²⁴⁸

²⁴⁸ For more information on dormant Swiss bank accounts see Swiss Banking Ombudsman, *Dormant Assets at Swiss Banks*, <https://www.dormantaccounts.ch/> (Accessed on August 31, 2022).

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.





5

Swiss Financial Market Regulators & Laws

Introduction

Swiss financial intermediaries are regulated by an assortment of interconnected federal and cantonal laws and authorities. This chapter focuses on the federal level. It starts by explaining the purpose of the Financial Markets Supervisory Authority, Switzerland's primary financial regulator, and goes on to explain supporting regulatory authorities, primary among which is the Swiss National Bank. It identifies and clarifies the major federal acts that have shaped Switzerland's financial system. This discussion reveals the concentration of federal acts passed in the twenty-first century, reflecting significant levels of economic and financial volatility. The main portion of this chapter highlights federal "acts" that are the legal foundation for Switzerland's financial system. The Appendix to this chapter, entitled *Legal Basis for Switzerland's Financial System: Federal Ordinances and Regulations*, explains the federal "ordinances" and "regulations" that help clarify Switzerland's major acts.

FINMA: Switzerland's Chief Financial Regulator

Switzerland's Financial Markets Supervisory Authority (FINMA) is the nation's independent financial markets regulator.¹ Its mandate is to protect

¹ FINMA is an abbreviation for "Finanzmarktaufsicht," a German word meaning "financial market supervision." FINMA, Legal Basis for FINMA's Activities, Undated, <https://www.finma.ch/en/documentation/finma-s-legal-basis/> (Accessed on August 3, 2022).

financial market clients by supervising and monitoring Swiss financial institutions' compliance with federal acts, ordinances, directives, regulations, and circulars. It imposes sanctions, assists other national and international regulators, helps draft statutes and ordinances, issues circulars, and supervises Switzerland's self-regulatory financial institutions, such as professional associations' codes of conduct—voluntary, mandatory, and minimum standard.² If successful, Switzerland's financial markets will remain stable and function effectively.

Included under FINMA's regulatory umbrella are Switzerland's "banks, security exchanges and other financial market infrastructures, securities firms, collective investment schemes, insurance companies, mortgage issuance banks, fund management companies, asset managers and trustees, trade assayers, as defined in *the Precious Metals Control Act (PMCA)*," asset managers for occupational pension schemes, supervisory organizations for asset managers, and prospectus review bodies regulated under the *Financial Services Act (FinSA)*.³

Among FINMA's many responsibilities are fighting money laundering, ensuring financial transparency, resolving conflicts, and ensuring that financial institutions' self-regulatory activities meet at least minimum standards. It also supervises quantitative regulations, such as capital and solvency requirements, and oversees qualitative factors, such as the corporate governance and risk management of prudentially supervised institutions.

The FINMA is the creation of the Swiss Parliament's *Federal Act on Swiss Financial Market Supervisory Authority (FINMASA)*, which was passed on June 22, 2007. Fewer than six months later, on January 1, 2008, the FINMA commenced operations. The *FINMASA* merged into the FINMA responsibilities of three former regulators,⁴ thereby putting into one regulator's hands the power to supervise virtually all of Switzerland's financial intermediaries. In addition to concentrating the FINMA's regulatory authority beyond those of three previous regulators, the *FINMASA* also increased the FINMA's institutional, functional, and financial independence. Nevertheless, despite its relatively high level of autonomy, the FINMA is a political creation

² René Bösch and Franziska Balsiger-Geret, *Banking Regulation in Switzerland: Overview*, Thomson Reuters: Practical Law, Law stated as December 1, 2021, [https://uk.practicallaw.thomsonreuters.com/w-007-8999?transitionType=Default&contextData=\(sc.Default\)&firstPage=true](https://uk.practicallaw.thomsonreuters.com/w-007-8999?transitionType=Default&contextData=(sc.Default)&firstPage=true) (Accessed on August 3, 2022).

³ René Bösch and Franziska Balsiger-Geret, *Banking Regulation in Switzerland: Overview*, Ibid. (Accessed on August 3, 2022).

⁴ These regulators were the Federal Office of Private Insurance (FOPI), the Swiss Federal Banking Commission (SFBC), and the Money Laundering Control Authority (MLCA).

that is accountable (albeit quite limited) to the federal government. Furthermore, the FINMA is subject to a *Code of Conduct*, which lays out how its management and employees are expected to behave.⁵

Article 7, paragraph 3 of the *FINMASA* allows Swiss financial institutions to regulate themselves in certain areas, as long as the FINMA enforces minimum standards for each self-regulatory organization (SRO).⁶ An example of self-regulation is the Swiss banks' *Code of Conduct* regarding the exercise of due diligence for know-your-customer (KYC) rules. The 2020 *Agreement on the Swiss Banks' Code of Conduct with Regard to the Exercise of Due Diligence* (commonly abbreviated CDB 20) defines these obligatory rules for banks and security dealers.⁷

The FINMA assists financial intermediaries in need of help and can impose penalties and sanctions on those that do not obey the rules. It is the bankruptcy agency for most Swiss financial intermediaries, responsible for ensuring an orderly market exit via insolvency or compulsory liquidation. If an intermediary is over-indebted or illiquid, the FINMA must determine if restructuring is possible and, if not, place it into bankruptcy.⁸

One of the FINMA's primary responsibilities is licensing banks that operate in or from Switzerland. Foreign banks and foreign-controlled banks operating in Switzerland are also required to obtain licenses from the FINMA. Institutions that offer only financial services in Switzerland and have no physical presence do not need licenses, but they are subject to the FINMA's oversight, particularly concerning rules of conduct.⁹

The FINMA grants three broad types of licenses:

1. Banking, for firms with deposit liabilities more than CHF 100 million;
2. FinTech, for firms with deposit liabilities less than CHF 100 million, and

⁵ FINMA, Verhaltenskodex der Eidgenössischen Finanzmarktaufsicht (Verhaltenskodex FINMA), January 1, 2022, https://www.finma.ch/-/media/finma/dokumente/dokumentencenter/myfinma/4dokumentation/verhaltenskodex-finma.pdf?sc_lang=de (Accessed on August 3, 2022).

⁶ FINMA, Self-Regulations, Undated, <https://www.finma.ch/en/documentation/self-regulation/anerkannt-selbstregulierung/> (Accessed on August 3, 2022). FINMA's agreement is required for compulsory self-regulation.

⁷ The Swiss Asset Management Association's revised self-regulation guidelines came into force on January 1, 2022.

⁸ FINMA, FINMA Resolution Authority, Undated, <https://www.finma.ch/en/enforcement/recovery-and-resolution/finma-as-a-resolution-authority/> (Accessed on August 3, 2022).

⁹ On January 1, 2020, the FINMA implemented a "small-bank regime" that requires financial institutions to prove they have the capital and liquidity to support a leverage ratio of at least 8%, a minimum liquidity coverage ratio (LCR) of 110%, and a refinancing ratio of at least 100%. Its purpose was to reduce the regulatory burden on banks in this classification without risking their stability and safety. FINMA, FINMA Implementing Small Banks Regime, <https://www.finma.ch/en/news/2019/11/20191127-mm-kleinbankenregime/#:-:text=The%20small%20banks%20regime%20ceks,jeopardising%20their%20stability%20and%20safety> (Accessed on August 13, 2022).

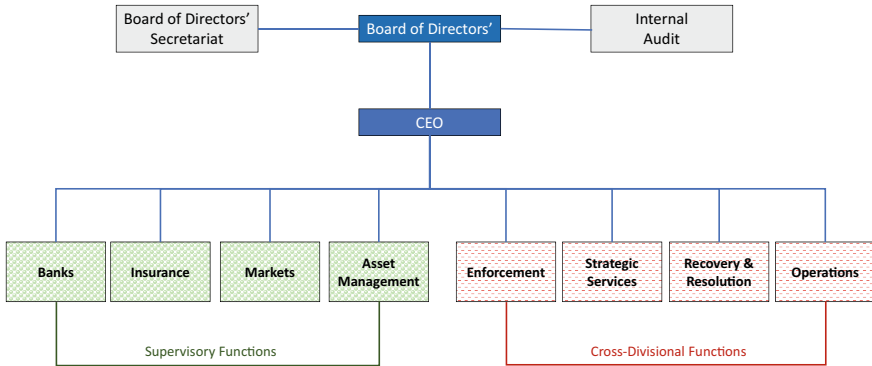


Fig. 5.1 FINMA structure (Source FINMA, eight divisions, <https://www.finma.ch/en/finma/organisation/finma-s-divisions/> [Accessed on August 3, 2022])

3. Securities, for securities trading and underwriting.

Because Switzerland has universal banking, the financial activities of a “bank” can vary, obliging the FINMA to evaluate the firm’s organization and operational ability to manage potential risks. Licensed financial institutions must have paid-in share capital of at least CHF 10 million,¹⁰ but the FINMA may require additional equity-linked support in the form of subordinated debt to back the mix of proposed financial activities.¹¹

FINMA’s Organizational Structure

Figure 5.1 shows the FINMA’s organizational structure, with a Board of Directors (BoD), Chief Executive Officer (CEO), and eight divisions, four of which perform supervisory activities. The remaining four carry out cross-divisional functions.

¹⁰ See Article 15 (1) of the Ordinance on Banks and Savings Banks (BankO, April 30, 2014). Der Bundesrat, Verordnung über die Banken und Sparkassen (Bankenverordnung, BankV), April 30, 2014, <https://www.fedlex.admin.ch/eli/cc/2014/273/de> (Accessed on August 3, 2022).

¹¹ Daniel Haerberli, Stefan Oesterhelt, and Alexander Wherlock, Blockchain & Cryptocurrency Laws and Regulations 2022 | Switzerland, Global Legal Insights, Undated, <https://www.globallegalinsights.com/practice-areas/blockchain-laws-and-regulations/switzerland> (Accessed on August 3, 2022).

Board of Directors (BoD)

An independent Board of Directors (BoD) manages the FINMA, with seven-to-nine expert members and a support staff consisting of the Secretariat and Internal Audit Departments. The BoD is responsible for making strategic management decisions, issuing ordinances and circulars, approving the FINMA's budget, and overseeing the CEO. The Board makes personnel, remuneration, and risk management decisions and works cooperatively with key domestic and foreign regulators. Among its domestic counterparts are the Swiss Bankers Association (SBA), Swiss Insurance Association, Swiss Funds Association, SIX Swiss Exchange, Swiss Takeover Board, and Federal Audit Oversight Authority. The BoD's international associates include the Financial Stability Board, Basel Committee on Banking Supervision of the Bank for International Settlements, Financial International Organization of Securities Commissions, International Association of Insurance Supervisors, International Organization of Securities Commissions, Financial Action Task Force, Organization for Economic Cooperation and Development, and International Monetary Fund.

Chief Executive Officer (CEO)

The FINMA's Chief Executive Officer (CEO) reports to the BoD and is responsible for preparing the material necessary for the BoD to make well-informed decisions. The CEO controls the FINMA's operations, implementing BoD rulings and supervising financial intermediaries, including banks, insurers, stock exchanges, and securities dealers.

Divisions

The FINMA has four supervisory divisions and four cross-divisional units. Supervisory functions are conducted by the Banks, Insurance, Markets, and Asset Management divisions. The Banks Division licenses and supervises banks and security firms. The Insurance Division licenses insurance companies. The FINMA's Markets Division oversees FinTech companies and para-banking activities.¹² It also monitors banks' SROs to ensure they comply

¹² Para-banking activities are peripheral, bank-related endeavors unrelated to deposits, withdrawals, or loans, such as portfolio management, insurance, and underwriting public sector bonds.

with Switzerland's *Anti-Money Laundering Act (AMLA)* regulations.¹³ Finally, the Asset Management Division authorizes and supervises asset managers (of funds) and collective investment schemes. It also licenses portfolio managers (trustees) that are covered by the *Financial Institutions Act (FinIA)* and conducts case-based supervision.¹⁴

The cross-divisional responsibilities of the FINMA's Enforcement Division are to execute supervisory laws and conduct market supervision. The Strategic Services Division is responsible for international cooperation, legal frameworks, and communication across the FINMA's divisions. The Recovery and Resolution Division ensures that the FINMA's units operate efficiently and effectively in crises. Finally, the Operations Division ensures that the FINMA staff is well-equipped with the needed working tools. It is also responsible for performing internal service and control functions.

Audit Firms

FINMA delegates a significant portion of its direct supervisory work to independent audit firms but retains the right to conduct its own targeted, on-sight assessments. The primary purpose of these auditing satellites is to assess financial institutions' compliance with supervisory requirements and their ability to continue doing so in the foreseeable future. The only auditing exceptions are for UBS Inc., UBS Switzerland AG, Credit Suisse Group Ltd., and Credit Suisse (Switzerland) Ltd., the nation's largest banking groups. For them, the FINMA has its own dedicated supervisory team.¹⁵

Supporting Regulatory Authorities

FINMA is Switzerland's primary financial regulator, but various organizations support it, such as:

- External auditors, who ensure compliance with Switzerland's financial legislation and FINMA rules;

¹³ FinSA and FinIA require portfolio managers to obtain licenses directly from the FINMA. To get this license, they need to be an approved member of a newly founded supervisory organization.

¹⁴ FINMA, Eight Divisions, February 1, 2022, <https://www.finma.ch/en/finma/organisation/finma-divisions/#:~:text=The%20organisational%20structure%20of%20FINMA,consolidated%20in%20four%20further%20divisions> (Accessed on August 3, 2022).

¹⁵ Peter Hsu and Daniel Flühmann, Banking Laws and Regulations 2022 | Switzerland, Global Legal Insights, Undated, <https://www.globallegalinsights.com/practice-areas/banking-and-finance-laws-and-regulations/switzerland#:~:text=The%20core%20of%20the%20new,Infrastructures%20and%20Market%20Conduct%20in> (Accessed on August 3, 2022).

- Self-regulatory bodies that supervise mandated Swiss statutes;
- The Swiss Bankers Association, which issues directives, circulars, and guidelines that the FINMA recognizes as minimum regulatory standards, and the
- Swiss National Bank.

Swiss National Bank

The SNB's primary responsibilities are the proper management of Switzerland's money supply growth rate, exchange rate, interest rates (both real and nominal), creation of Swiss banknotes and coins, and providing liquidity to Switzerland's financial system.¹⁶ It is also charged with ensuring that Switzerland stays abreast of the most efficient payment systems. The SNB is Switzerland's principal connection to global authorities, such as the Bank for International Settlements, Financial Stability Board, International Monetary Fund, Organization for Economic Cooperation, and World Bank.

While they pale compared to the FINMA, the SNB has meaningful regulatory authority and functional responsibilities relative to Switzerland's financial institutions. Among them are:

Systemically Important Financial Institutions ("Too Big to Fail")

The financial crisis of 2007–2009 caused Swiss authorities to consider the implications that a failure of one or more large, systemically important domestic financial institutions might have on the nation's financial system, economy, and foreign countries. In March 2012, Switzerland's Parliament passed an amendment to the *Banking Act of 1934*, giving the SNB power to impose special requirements on systemically important financial institutions (SIFIs). In particular, the special requirements apply to these banks' capital, liquidity, exposures, and organization. Currently, the SNB identifies two Swiss banks (UBS and Credit Suisse) as global systemically important banks (G-SIBs) and three banks (Zürcher Kantonal Bank, Raiffeisen, and PostFinance) as domestic systemically important banks (D-SIBs).

Countercyclical Buffer

If the Swiss economy overheats or slows unexpectedly, the SNB has the power to change the nation's countercyclical buffer, which was

¹⁶ Chapter 7: *Swiss National Bank, Monetary Policy, and Global Exchange Markets* contains a full explanation of the functions and structure of the SNB.

introduced in 2013. This buffer adjusts banks' equity requirements to economic changes associated with the nation's business cycle. SIFIs face stricter capital requirements than other banks, in terms of both the percent of equity that must be held relative to risk-weighted assets and the assets that qualify as reserves (e.g., common equity Tier 1 versus other forms of equity).

Liquidity and Reserve Requirements

Swiss banks have liquidity requirements relative to their short-term liabilities and reserve requirements relative to their deposit liabilities. Assets that qualify as liquid assets and reserves are cash and sight deposits at the SNB. SIBs must meet higher standards to absorb significant exogenous shocks that drain liquidity from the banking system.

SIX x-clear

SIX x-clear is a central counterparty (CCP) that intermediates between trading parties on the SIX Swiss Exchange. Upon settlement, it initiates delivery and payment and tracks, values, and offsets trading positions.¹⁷ SIX x-clear is supervised by the FINMA and the SNB for services of systemic importance.¹⁸

SIX Repo

The SIX Repo operates two repurchase agreement bodies, CH Repo and OTC Spot. CH Repo facilitates the SNB's open market operations, and OTC Spot manages the SNB's auctions for Treasury Bills, Federal Bond Issues, and SNB Bills. The SNB also uses SIX Repo's Special-Rate Repo facility (aka, "Liquidity Shortage Financing Facility") to provide banks with very short-term (i.e., overnight) liquidity.¹⁹

SIX Interbank Clearing

Swiss Interbank Clearing (SIC) is Switzerland's nationwide electronic payment network, clearing domestic transactions, such as fund transfers, security payments, cash management services, and borrowed/lent

¹⁷ Ibid.

¹⁸ SIX, Service Description SIX x-clear AG for Members on SIX Clearing Platform (SCP), chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/<https://www.six-group.com/dam/download/curities-services/clearing/download-center/marketing/xcl-n-805-en.pdf> (Accessed on August 17, 2022).

¹⁹ Swiss National Bank, Instruction Sheet on the Liquidity-Shortage Financing Facility (special-rate repo transactions), 4.2 Setting the Special Rate, https://www.snb.ch/en/mmr/reference/repo_mb25/source/repo_mb25.en.pdf (Accessed July 11, 2021). See Chapter 7: Swiss National Bank, Monetary Policy, and Global Exchange Markets for more information on this facility and the SNB's open market operations.

securities. The SIC uses its SNB deposits for payments and receipts, which integrate its actions with the SNB's monetary policies. Due to its crucial position in Switzerland's financial system, the SNB classifies the SIC system as a "systemically important financial market infrastructure" (SIFI).²⁰ Therefore, it is subject to the central bank's supervision.²¹

Settlement Communication System (SECOM)

SECOM is Switzerland's custody and securities settlement platform for on- and off-exchange transactions. Payments are made via commercial banks or the SNB.

Legal Basis for Switzerland's Financial System: Federal Acts

Switzerland's reputation as a credible, safe, and stable harbor for financial investments—domestic and foreign—depends on having fair, transparent, and effective financial laws, which is why ordinances, circulars, and regulations are crucial to the nation's reputation as a credible, safe, and stable harbor for financial investments—domestic and foreign. This section begins by discussing the main federal acts on which Switzerland's financial system has been built. The Appendix to this chapter, entitled *Legal Basis for Switzerland's Financial System: Federal Ordinances and Regulations*, discusses how ordinances help clarify the nation's federal financial acts.

Financial acts are passed by Switzerland's Parliament and carry the full weight of the law. By contrast, ordinances help interpret financial acts. Ordinances can be created by either the Swiss Federal Council or the FINMA. They are a means by which the FINMA helps promulgate Swiss financial laws and illuminate how it conducts financial supervision.

Table 5.1 shows the federal acts on which Switzerland's financial system has been built and the years they were created by Switzerland's political process. Acts typically come into force one-to-two years after their creation.

²⁰ Swiss National Bank, Swiss Interbank Clearing (SIC) Payment System: Report on the SIC System and Disclosure Report, https://www.snb.ch/en/mmr/reference/sic_system/source/sic_system.en.pdf (March 10, 2022). For technical reasons, each SIC participant's account at SNB is divided into two subaccounts. The master account is used to settle cash transactions and bilateral business exclusively with the SNB. The SNB's internal accounting system manages it. By contrast, the SIC settlement account is used for interbank clearing transactions, which means it must utilize SIX Interbank Clearing Ltd.

²¹ SNB, The Swiss Interbank Clearing (SIC) Payment System, https://www.snb.ch/en/mmr/reference/sic_system/source/sic_system.en.pdf (Accessed on June 22, 2022).

Table 5.1 Swiss financial market legislation: 1930–2022

Act	Date	Focus
Mortgage Bond Act <i>MBA</i>	1930	<ul style="list-style-type: none"> • Mortgage lenders
Banking Act <i>BA</i>	1934	<ul style="list-style-type: none"> • Banks
Anti-Money Laundering Act <i>AMLA</i>	1997	<ul style="list-style-type: none"> • Banks
Consumer Credit Act <i>FLCC</i>	2001	<ul style="list-style-type: none"> • Loan-making financial institutions
Insurance Supervision Act <i>ISA</i>	2004	<ul style="list-style-type: none"> • Insurers
Collective Investments Schemes Act <i>CISA</i>	2006	<ul style="list-style-type: none"> • Collective investment schemes
Financial Market Supervision Act <i>FINMASA</i>	2007	<ul style="list-style-type: none"> • FINMA • Portfolio managers (trustees) • Supervisory organizations
Financial Market Infrastructure Act <i>FinMIA</i>	2015	<ul style="list-style-type: none"> • Financial market infrastructures and markets
Financial Institutions Act <i>FinIA</i>	2018	<ul style="list-style-type: none"> • Securities firms • Financial market infrastructures and markets • Collective investment schemes • Portfolio managers (trustees) • Supervisory organizations
Federal Act on Financial Services <i>FinSA</i>	2018	<ul style="list-style-type: none"> • Financial market infrastructures and markets • Financial services • Portfolio managers (trustees) • Supervisory organizations
New Insurance Contract Act <i>nISA</i>	2020	<ul style="list-style-type: none"> • Insurers
New Federal Act on Data Protection <i>nFADP</i>	2020	<ul style="list-style-type: none"> • Financial institutions

Source FINMA, The Financial Market is Governed by Laws and Ordinances, <https://www.finma.ch/en/documentation/legal-basis/laws-and-ordinances/> (Accessed on November 6, 2022)

As Table 5.1 shows, the 15 year period from 2007 to 2022 were particularly active for Swiss lawmakers, caused by a substantial increase in global volatility and complexity. Among the most significant events amplifying financial market instability were the following:

- *Great Recession* (2007–2009), which started in the US’ subprime real estate sector, spread to virtually every other real and financial segment of the US economy, and then infected the rest of the world;
- *European Debt Crisis* (2008–2016), which began in 2008, when Iceland’s banking system collapsed, and was followed by sovereign debt crises in Greece (starting in 2010), Ireland (2010), Portugal (2011), Spain (2012), Cyprus (2012), and Italy (2016);
- *Brexit* (2016), which was UK’s decision to leave the European Union (EU);
- *COVID-19 Pandemic* (2020–2022+), which began in China in 2020 and spread (with its many variants) to the rest of the world; and
- *Other Events*, such as terrorist attacks, mass shootings, natural disasters (e.g., hurricanes and earthquakes), political upheavals (e.g., impeachments), and wars (e.g., Russia’s invasion of Ukraine in 2014 and 2022).

Together, these events demonstrated how strongly interconnected global markets (e.g., financial, real, and foreign exchange) have become and how a significant change in one of them impacts others. Swiss regulators’ first concern has been ensuring its domestic and global customers that Switzerland’s financial system would remain stable. At the same time, Swiss financial rules and regulations needed to be changed so that they were equivalent, at least, to those in the EU and large countries, such as the US. Otherwise, Swiss financial intermediaries could be denied access to some of their largest customers.²²

Mortgage Bond Act²³

Switzerland’s *Mortgage Bond Act* (*Pfandbriefgesetz, PFG*, June 25, 1930) was based on *Article 64, paragraph 2* of the *Federal Constitution*. Its purpose is to govern the duties and issuing rights of the central mortgage bond institutions, so they provide property owners with long-term mortgage loans at the cheapest possible interest rates.

²² The Federal Council, Federal Act on the Swiss National Bank, October 3, 2003. Switzerland needed to comply with standards set by the EU’s Directive 2014/65/EU on Markets in Financial Instruments II (MiFID) and Regulation (EU) No 600/2014 on Markets in Financial Instruments (MiFIR). See Directive 2014/65/EU of the European Parliament and the Council of 15 May 2014, Undated, <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0065> (February 1, 2023) and Regulation (EU) No 600/2014 of the European Parliament and of the Council on 15 May 2014, <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014R0600> (Accessed on February 1, 2023).

²³ Der Bundesrat, Pfandbriefgesetz (PFG), June 25, 1930, https://www.fedlex.admin.ch/eli/cc/47/109_113_57/de (Accessed on August 3, 2022).

Banking Act²⁴

At the foundation of Switzerland's current financial system is the *Federal Act on Banks and Savings Banks (Banking Act, BA, November 8, 1934)*, which governs banks, private bankers, and savings banks, as well as financial intermediaries that accept deposits up to CHF 100 million but neither invest nor give interest on deposits. The *BA* provides rules for obtaining operating licenses and requirements for bank capital, liquidity, and accounting. For systemically important banks (SIBs), the *BA* imposes additional liquidity and capital requirements, such as buffer capital and conversion capital. This *Act* has supervisory powers over savings and sight deposits and covers cases of impending bank insolvency and liquidation. Furthermore, it oversees Switzerland's depositor protection scheme, dormant assets, and liability and penal provisions.

Of all the federal financial acts passed during the past hundred years, the *BA* stands out as one of Switzerland's landmarks. Passed in 1934, the *BA* and its revisions have helped mold Switzerland's financial market into its current shape. Among the *BA*'s requirements is Swiss banks' responsibility to have a functional and personal separation between their supervision and management. Therefore, the banks' boards of directors and management staff must have two separate corporate bodies with no overlapping members. While day-to-day operating decisions are the responsibility of banks' management teams, the *BA* holds its three-member (at least) board of directors accountable for major strategic decisions, bank supervision, and control.²⁵

Anti-Money Laundering Act²⁶

The *Federal Act on Combating Money Laundering and Terrorist Financing (Anti-Money Laundering Act, AMLA, October 10, 1997)* is based on Articles 95 and 98 of Switzerland's *Federal Constitution*. It addresses Swiss efforts to:

²⁴ Der Bundesrat, Bundesgesetz über die Banken und Sparkassen, November 8, 1934, https://www.fedlex.admin.ch/eli/cc/51/117_121_129/de (Accessed on August 3, 2022).

²⁵ René Bösch and Franziska Balsiger-Geret, Banking Regulation in Switzerland: Overview, *Ibid*.

²⁶ Federal Council, Federal Act on Combating Money Laundering and Terrorist Financing (Anti-Money Laundering Act, AMLA), October 10, 1997, https://www.fedlex.admin.ch/eli/cc/1998/892_892_892/en (Accessed on August 3, 2022).

1. Fight money laundering, defined in *Article 305^{bis}* of the *Swiss Criminal Code (SCC)*²⁷;
2. Combat terrorist financing, defined in *Article 260^{quinquies}* paragraph 1 of the *SCC*; and
3. Ensure necessary due diligence for financial transactions.

This *Act* applies to financial intermediaries, natural persons, and legal entities that accept cash for commercial purposes.

Consumer Credit Act (FLCC)²⁸

The *Consumer Credit Act (Federal Law on Consumer Credit, FLCC, 2001)* defines the rights and responsibilities of parties to a consumer loan agreement. It protects borrowers from usury by limiting the nominal interest rate on consumer loans, “as a general rule,”²⁹ to a maximum of 15%.³⁰ In addition, borrowers are protected by requiring lenders to provide sufficient information to make these transactions clear and transparent.

The *FLCC* protects lenders by creating a credit information office, which serves as a centralized database of customer loan details. Lenders must report consumer loan details to the Credit Information Office and, before new loans are made, use it to check the financial status of potential borrowers. Consumer loans are granted only if borrowers’ incomes permit repayment within three years. The act of granting or brokering commercial loans requires a cantonal license.³¹

²⁷ Swiss Criminal Code, <https://www.legal-tools.org/doc/8204e0/pdf/> (Accessed August 3, 2022). The Federal Council, Swiss Criminal Code, July 1, 2021, https://www.fedlex.admin.ch/eli/cc/54/757_781_799/en#fn-d839605e1548 (Accessed August 3, 2021).

²⁸ The Federal Council, Federal Law on Consumer Credit (FLCC) of 23 March 2001, in force since 1 January 2003, <https://www.bj.admin.ch/bj/en/home/wirtschaft/gesetzgebung/archiv/konsumkredit.html#:~:text=In%20Switzerland%2C%20consumer%20loans%20are,awarding%20consumers%20comprehensive%20information%20rights> (Accessed on August 3, 2022).

²⁹ *Ibid.*

³⁰ It includes leasing contracts for movable goods, credit and customer card agreements, and installment debt.

³¹ A credit broker is a natural or legal person whose business acts as an intermediary in consumer credit agreements.

Insurance Supervision Act (ISA)³²

The *Federal Law Regarding the Supervision of Insurance Companies (Insurance Supervision Act, ISA*, December 17, 2004) defines how the Swiss Confederation supervises insurance companies and insurance intermediaries, particularly concerning their solvency and liquidity.

Collective Investment Schemes Act (CISA)³³

The *Federal Act on Collective Investment Schemes (Collective Investment Schemes Act, CISA*, June 23, 2006) protects investors, ensures transparency, and provides a properly functioning market for collective investment schemes. The *CISA*'s regulatory powers include those over:

- Individuals responsible for safekeeping assets trusted to them;
- Foreign collective investment schemes offered in Switzerland; and
- Individuals who represent foreign collective investment schemes in Switzerland.

Until its revision, all Swiss collective investment schemes required FINMA approval.³⁴

CISA was partially revised and expected to come into force in late 2022 or 2023. When it does, this *Act* will create a new type of fund in the category of *Collective Investment Schemes for Qualified Investors*, called the “Limited Qualified Investor Fund” (L-QIF), which is free from FINMA authorization, regulation, and approval.³⁵ While the fund is not regulated by the FINMA,

³² Der Bundesrat, Bundesgesetz betreffend die Aufsicht über Versicherungsunternehmen, <https://www.fedlex.admin.ch/eli/cc/2005/734/de> (Accessed on August 3, 2022). An unofficial English translation can be found at https://www.walderwyss.com/user_assets/publications/361.pdf (Accessed on August 3, 2022). Also, see CapLaw, Insurance Supervision Act—Overview of the Ongoing Revision, <https://caplaw.ch/2021/insurance-supervision-act-overview-of-the-ongoing-revision/> (Accessed on June 7, 2022). Federal Office of Private Insurance, Insurance Supervision Act (ISA), <https://www.finma.ch/FinmaArchiv/bpv/e/dokumentation/00437/01248/01290/index.html?lang=en> (Accessed on August 3, 2022).

³³ The Federal Council, Federal Act on Collective Investment Schemes (Collective Investment Schemes Act, CISA), June 23, 2006, <https://www.fedlex.admin.ch/eli/cc/2006/822/en> (Accessed on August 3, 2022).

³⁴ This includes schemes offered by contractual funds, investment companies with variable capital (SICAV), limited partnerships for collective investment (LP), and investment companies with fixed capital (SICAF).

³⁵ Urs Kloeti, Andrea Huber, Oliver Widmer, and Nils Gjolamalizadeh, Limited Qualified Investor Fund (L-QIF), Lexology, January 26, 2022, <https://www.lexology.com/library/detail.aspx?g=9d90bf77-44b3-444f-8aed-1a0e08120685#:~:text=According%20to%20the%20legal%20definition,professional%20clients%20according%20to%20Art.%20> (Accessed on August 3, 2022).

customers must be qualified,³⁶ and the firm and asset managers in each fund are under FINMA supervision.

Financial Market Supervision Act (FINMASA)³⁷

The *Federal Act on the Swiss Financial Market Supervisory Authority (Financial Market Supervision Act, FINMASA, June 22, 2007)*³⁸ regulates the FINMA, portfolio managers (trustees), and supervisory organizations. At its legal foundation are *Articles 95 and 98 of the Federal Constitution*.

The *FINMASA* merged the powers of three former financial regulators (i.e., the Swiss Federal Banking Commission [SFBC], Federal Office of Private Insurance [FOPI], and Anti-Money Laundering Control Authority [AMLCA]) into one and increased its institutional, functional, and financial independence relative to the three previous regulators.

This *Act* charges the Swiss Confederation with creating a supervisory authority that acts as an umbrella for other financial regulations, which is why it is often referred to as a financial “umbrella law.”³⁹ The *FINMASA* has given the FINMA a broad mandate to supervise Swiss banks, insurance companies (e.g., life and non-life insurance, such as health, property, accident, risk of loss, liability, and reinsurance), stock exchanges, securities dealers, collective investment schemes, mortgage-issuance banks, fund-management companies (e.g., occupational pension plans), asset managers (trustees), trade assayers,⁴⁰ and prospectus review bodies. A commonality among all these financial institutions is they are regulated by the *Financial Market Services Act*

³⁶ CISA defines a “qualified investor” in Article 10, paragraphs 2–5. It is also defined in the *Financial Institutions Act (FinIA)* by Article 10 paragraphs 2–5, Article 11 paragraphs 3–5 and 8, and Article 20 paragraph 3.

³⁷ The Federal Council, *Federal Act on the Swiss Financial Market Supervisory Authority (Financial Market Supervision Act, FINMASA)*, June 22, 2007, <https://www.fedlex.admin.ch/eli/cc/2008/736/en> (Accessed on August 3, 2022).

³⁸ Switzerland’s Parliament approved the *Federal Act on the FINMASA* on June 21, 2007, the Federal Council ratified it on October 15, 2008, and the *Act* entered into force on January 1, 2009.

³⁹ *FINMASA* acts as an umbrella for the: (1) *BA* of November 8, 1934, (2) *Collective Investment Schemes Act* of June 23, 2006, (3) *Insurance Supervision Act* of December 17, 2004, (4) *Federal Act on Contracts of Insurance* of April 2, 1908 (parts), (5) *Anti-Money Laundering Act* of October 10, 1997, (6) *Mortgage Bond Act* of June 25, 1931, (7) *Financial Market Infrastructure Act* of June 19, 2015, (8) *Financial Institutions Act* of June 15, 2018 (replaced the *Stock Exchange Act* of October 1, 1999, and (9) *Financial Services Act* of June 15 2018. The Federal Council, *Federal Act on the Swiss Financial Market Supervisory Authority (Financial Market Supervision Act, FINMASA)*, *Ibid*.

⁴⁰ Trade assayers commercially buy and sell “banking precious metals.” This category includes gold, silver, platinum, and palladium particles with minimum fineness, as defined by the *Precious Metals Control Act (PMCA)*. The Federal Council, *Federal Act on the Control of the Trade in Precious Metals and Precious Metal Articles (Precious Metals Control Act)* of June 20, 1933, https://www.fedlex.admin.ch/eli/cc/50/345_357_401/en (Accessed on August 3, 2022).

(*FinSA*), passed in 2018.⁴¹ In its regulatory capacity, the *FINMASA* also gave the FINMA responsibility to protect creditors, investors, and policyholders, and it specified the FINMA's organizational framework, principles governing financial market regulation, and liability rules. Furthermore, it harmonized Switzerland's supervisory instruments and sanctions.

Supporting and reinforcing the *FINMASA* are the *FINMA Organizational Regulations*, *FINMA Code of Conduct*,⁴² and the *FINMA Ordinance on the Financial Market Supervision Act*.⁴³ The *FINMA Organizational Regulations* define the FINMA's structural framework and the tasks and powers of its BoD, Executive Board, and Internal Audit Committee.⁴⁴ The *FINMA Code of Conduct* defines how the FINMA's Board of Directors and employees are expected to behave—particularly avoiding conflicts of interest.⁴⁵ Finally, the *FINMA Ordinance on the Financial Market Supervision Act* (December 13, 2019) describes the FINMA's international regulatory responsibilities and those related to the FINMA's information exchanges with the FDF.

Financial Market Infrastructure Act (FinMIA)⁴⁶

The *Federal Act on Financial Market Infrastructures and Market Conduct in Securities and Derivatives Trading* (*Financial Market Infrastructure Act*, *FinMIA*, June 19, 2015) governs the organization and operation of Switzerland's Financial Market Infrastructures and Markets Division by regulating the conduct of participants in securities and derivatives trading. The *FinMIA* establishes license requirements for stock exchanges, multilateral trading facilities, organized trading facilities, central securities depositories, DLT trading platforms, trade repositories, and payment systems. It also regulates disclosure rules for public takeover offers, including derivative transactions, such

⁴¹ René Bösch and Franziska Balsiger-Geret, *Banking Regulation in Switzerland: Overview*, *Ibid.*

⁴² FINMA, *Code of Conduct for FINMA Staff*, <https://www.finma.ch/en/finma/organisation/corporate-governance/code-of-conduct/> (Accessed on August 3, 2022).

⁴³ Der Bundesrat, *Verordnung zum Finanzmarktaufsichtsgesetz*, <https://www.fedlex.admin.ch/eli/cc/2020/23/de> (Accessed on April 7, 2022).

⁴⁴ FINMA, *Regulations on the Organization of the Swiss Financial Market Supervisory Authority FINMA (FINMA Organizational Regulations)* December 18, 2008; Updated April 1, 2022, <https://www.finma.ch/-/media/finma/dokumente/dokumentencenter/myfinma/4dokumentation/organisationsreglement-finma.pdf> (Accessed on August 3, 2022).

⁴⁵ FINMA, *Verhaltenskodex der Eidgenössischen Finanzmarktaufsicht (Verhaltenskodex FINMA)*, *Ibid.*

⁴⁶ The Federal Council, *Federal Act on Financial Market Infrastructures and Market Conduct in Securities and Derivatives Trading*, <https://www.fedlex.admin.ch/eli/cc/2015/853/en> (Accessed on August 3, 2022).

as puts, calls, and conversion rights, regardless of whether they are settled by delivering the underlying instruments or cash.⁴⁷

Financial Institutions Act (FinIA)⁴⁸

The *Federal Act on Financial Institutions* (*Financial Institutions Act, FinIA*, June 15, 2018) is based on *Articles 95 and 98* of the *Swiss Federal Constitution*. It entered into force in January 2020 and was subject to a two-year phase-in period. The *FinIA* regulates and standardizes the rules for financial institutions engaged in asset management and collective asset management. It aims to protect investors and clients of financial institutions by ensuring financial markets function properly. In general, the *FinIA* governs the organization and operation of Switzerland's financial institutions (e.g., banks, insurance companies, financial institutions, collective investment schemes, and their asset managers, as well as fund management companies and insurance intermediaries) and regulates the conduct of participants in securities and derivatives trading.

The *FinIA* regulates the license requirements for financial institutions in virtually every area, including Securities Firms, Financial Market Infrastructures and Markets, Collective Investment Schemes, Portfolio Managers (Trustees), and Supervisory Organizations.⁴⁹ Its standardized authorization rules empower the FINMA to supervise and authorize independent portfolio managers (trustees) and administrators of occupational pension funds. Formal regulation is carried out by FINMA-authorized supervisory organizations (SOs), with oversight by the FINMA.⁵⁰ These SOs are also responsible for ensuring compliance with *AMLA* rules, a charge previously in the hands of the SROs.

The *FinIA* has made substantial regulatory changes for independent asset managers (IAMs). Each must appoint a board of directors with at least two qualified directors (i.e., individuals with proof of adequate training and professional experience), most of whom are non-operating members, and an independent internal auditor to measure and monitor company risks

⁴⁷ Frank Gerhard, Hansjürg Appenzeller, and Daniel Hasler, Public Mergers and Acquisitions in Switzerland: Overview, [https://uk.practicallaw.thomsonreuters.com/8-502-1588?transitionType=Default&contextData=\(sc.Default\)](https://uk.practicallaw.thomsonreuters.com/8-502-1588?transitionType=Default&contextData=(sc.Default)) (Accessed on August 3, 2022).

⁴⁸ The Federal Council, Federal Act on Financial Institutions (Financial Institutions Act, FinIA), <https://www.fedlex.admin.ch/eli/cc/2018/801/en> (Accessed on August 3, 2022).

⁴⁹ Banks and FinTech companies are subject to the *BA* and the Ordinance on Banks and Savings Banks (BankO).

⁵⁰ Previously, managers of occupational pension funds were supervised by the Occupational Pension Supervisory Commission (OPSC).

with an external auditor. Furthermore, this legislation requires IAMs to have internal risk management and control systems with sufficient independence and compliance capabilities.

The *FinIA* requires IAMs to have paid-in capital of at least CHF 100,000 and an internal way of considering the tax implications of their operations, including the possible use of insurance to protect against professional liability.⁵¹ This *Act* subjected IAMs to FINMA licensing requirements and supervision, which are more stringent than their previous obligations as SROs. Because the *FinIA* clarifies the allowable range of asset management activities for all financial intermediaries, additional approval for managing funds of occupational pension schemes has no longer been required.

Financial Market Services Act (FinSA)⁵²

The *Federal Act on Financial Services (Financial Market Services Act, FinSA—June 15, 2018)* entered into force in January 2020 and was subject to a two-year phase-in period. It enhances Switzerland’s financial services reputation and competitiveness by protecting customers and harmonizing the conditions under which Swiss intermediaries provide their services—particularly concerning “honesty, diligence, and transparency.”

FinSA casts a vast regulatory net, covering client advisers, producers, providers of financial instruments, and financial service products offered by all Swiss financial intermediaries, such as banks and independent asset managers.⁵³ The *Act* moved regulation away from its historical roots, which focused on investor protection rules regulating the “distribution” of funds. Instead, *FinSA* focuses on protecting new financial offerings at their points of sale, relying on the *Collective Investment Schemes Act (CISA)* to safeguard customers once financial products are sold.

The *FinSA* imposed new reporting requirements and tests to increase openness and reduce abuses. Its rules also addressed high-frequency trading and required automated trading algorithms to be registered, tested, and equipped with circuit breakers.

By bringing all Swiss financial offerings under a common regulatory umbrella, the *FinSA* reduces barriers confronting customers who wish to

⁵¹ Sergio Cruz and Marcel Meyer, FIDLEG and FINIG - What Asset Managers need to know and do (Source: Deloitte 2018), March 4, 2019, <https://blogs.deloitte.ch/banking/2019/03/fidleg-and-finig-what-asset-managers-need-to-know-and-do.html> (Accessed on August 3, 2022).

⁵² The Federal Council, Federal Act on Financial Services (FinSA), Ibid.

⁵³ *FinSA* covers Financial Market Infrastructures and Markets, Financial Services, Portfolio Managers (Trustees), and Supervisory Organizations.

enforce their legal claims against financial service providers. To settle legal customer disputes, each financial institution must choose an independent ombudsman approved by the Federal Department of Finance (FDF).

FinSA includes rules of conduct that apply to all financial service providers. It focuses on information sufficiency, assessment and adequacy tests, documentation requirements, accountability, transparency, and due diligence. The *Act* requires financial service providers to furnish customers with:

- Clear business information;
- Lists of services and products offered and their potential risks and returns;
- Accurate recordkeeping;
- Reports and tests that increase transparency and reduce abuses, such as the use of “darknet pools”⁵⁴;
- Assessment and adequacy tests;
- Documentation requirements; and
- Rules of conduct, including accountability and due diligence.

The *FinSA* empowers the FINMA to approve adviser registration and provides a reviewing body for prospectuses. Customers are classified as either “retail” (non-professional), “professional,” or “institutional” investors, with protection varying by the classification level. Retail customers receive the highest level of protection (e.g., documentation, reporting, and assessments of investment suitability) due to their relatively low levels of experience and training. Professional customers, such as pension funds, large companies, and mutual funds, receive the second level of protection because they are assumed to have expertise in assessing risk-return tradeoffs among investment opportunities. Finally, institutional customers, such as banks and insurance companies, are judged to be highly sophisticated investors and receive only moderate, prudential supervision.⁵⁵

To move Swiss financial regulations closer to those in the EU, the *FinSA* contains conduct provisions modeled on the EU’s *Markets in Financial Instruments Directive* (*MiFID*) and its successor regulation, *Markets in Financial Instruments Directive II* (*MiFID II*). The *FinSA* has requirements for

⁵⁴ Darknet pools are private computer networks on which security trades are conducted only by permitted users, usually institutional investors. Because transactions are not conducted on exchanges, price and quantity information are opaque, with communications secret and anonymous from outside scrutiny or inspection. Darknet pools are legal. Among the major reasons for their popularity are that they provide opportunities to trade at reduced costs and less fear that large orders will move market prices unfavorably.

⁵⁵ See Schroders: FIDLEG Client Information Document, <https://prod.schroders.com/en/sysglobal/assets/digital/switzerland/pdf/simsag--fidleg-client-information-document--final---e---20220101-1.pdf> (Accessed on February 1, 2023).

prospectuses and easily understandable key-information documents for financial instruments. Essentially, it seeks to harmonize the authorization rules for financial service providers other than banks and (for the first time) subjects asset managers (trustees) and independent wealth managers to licensing and prudential supervision requirements.

Swiss Banking Ombudsman

The Swiss Banking Ombudsman (SBO) is an independent organization that was created by the SBA in 1993.⁵⁶ It has self-regulatory responsibilities and an obligation to provide free, impartial mediation services to customers bringing complaints against member financial institutions. The SBO has no jurisdictional authority. Its decisions are non-binding but intended to reduce costly and lengthy legal battles via mediation. In contrast to the FINMA, which takes responsibility for collectively protecting the customers of Swiss financial institutions, the SBO takes responsibility at the individual level. Banks also share this responsibility by having their own internal conflict resolution policies, procedures, and personnel for their customers. The *FinSA* requires financial service providers that are not members of the SBA but provide FINSA-regulated activities to become members of an ombudsman organization.⁵⁷ Bank customers can turn to Switzerland's courts for last-resort conflict resolution.

As part of the SBO's self-regulatory responsibilities, it has set up a Central Claims Office to assist individuals who have or suspect they have dormant accounts. *Appendix 3: Switzerland's Dormant Account Controversy: 1947–2022* in Chapter 4: *Swiss Bank (Customer) Secrecy & the International Exchange on Information* provides a detailed account of the “dormant account” controversy.

New Insurance Contract Act (nICA)⁵⁸

The *Insurance Contract Act* (*ICA*—April 2, 1908) has been part of Switzerland's financial regulatory system since 1908. It controls the content of Swiss insurance contracts. On June 19, 2020, a revised *ICA* (New Insurance

⁵⁶ Swiss Bankers Association, Ombudsman, Undated, <https://bankingombudsman.ch/en/> (Accessed on August 3, 2022).

⁵⁷ The Federal Council, Federal Act on Financial Services (FinSA), June 15, 2018, <https://www.fedlex.admin.ch/eli/cc/2019/758/en> (Accessed on August 3, 2022).

⁵⁸ Der Bundesrat, Bundesgesetz über den Versicherungsvertrag, April 2, 1908, https://www.fedlex.admin.ch/eli/cc/24/719_735_717/de (Accessed on August 3, 2022).

Contract Act, *nICA*, June 19, 2020) was approved by Switzerland's Council of States and National Council, with implementation in 2022. It focuses on insurance operations, products, and technology by:

1. Protecting policyholders in a digital age, such as providing termination and withdrawal rights;
2. Increasing the transparency of insurance contracts and the ease with which they can be read; and
3. Increasing the ability of customers to use mobile devices in their insurance contracts.⁵⁹

Federal Act on Data Protection (nFADP)⁶⁰

In 2020, Switzerland's Parliament revised the *Federal Act on Data Protection* (*nFADP*, September 25, 2020) to define the legal basis for FINMA's control over data processing for the financial institutions. It supervises and describes their general data-protection obligations. The revised *Act* was expected to be enacted during the second half of 2022. Its purpose is to align Switzerland's data protection rules and regulations with the EU's General Data Protection Regulation No 2016/679. Revision of this *Act* should ignite a full review and updating of the *FINMA Ordinance on Data Processing*.⁶¹

Conclusion

Switzerland's financial laws and ordinances must continuously evolve or lose their relevance. The challenges confronting Swiss financial institutions are sure to ignite more changes. Among the critical issues facing Switzerland's financial system in future are digitalization, gaining and maintaining access to foreign markets, disclosures of bank customer information, controlling SIFIs, and ensuring that financial intermediaries have the liquidity and capital needed to remain going concerns.

⁵⁹ PWC, Revision of the Swiss Insurance Contract, <https://www.pwc.ch/en/insights/fs/revision-insurance-contract-act.html> (Accessed on August 3, 2022). Also, see PWC, 7 Months to Be Ready for the Revision of the Swiss Insurance Contract Act—PwC Accelerations to Ensure On-Time Compliance, <https://www.pwc.ch/en/publications/2021/7-months-to-be-ready-for-revision.pdf> (Accessed on August 3, 2022).

⁶⁰ The Federal Council, New Federal Act on Data Protection (nFADP), <https://www.kmu.admin.ch/kmu/en/home/facts-and-trends/digitization/data-protection/new-federal-act-on-data-protection-nfadp.html> (Accessed on August 3, 2022).

⁶¹ Ibid.

Appendix: Legal Basis for Switzerland's Financial System: Federal Ordinances and Regulations⁶²

Switzerland separates its financial regulators and institutions into 12 areas: (1) the FINMA, (2) Financial Services, (3) Banks, (4) Securities Firms, (5) Insurers, (6) Financial Market Infrastructures, (7) Collective Investment Schemes, (8) Portfolio Managers (Trustees), (9) Supervisory Organizations, (10) *Anti-Money Laundering Act (AMLA)*, (11) Mortgage Bonds, and (12) Auditing. Table 5.2 shows the legal basis for these regulators and institutions. The acts that control Switzerland's financial system were explained in the body of this chapter (see Table 5.1: Swiss Financial Market Legislation: 1930–2022). This appendix briefly explains the Federal Council's and the FINMA's ordinances and regulations, which give life and body to these legal acts.

Legal Basis for FINMA

Federal Constitution⁶³

Article 98 of Switzerland's *Federal Constitution* (revised April 18, 1999) gives the Confederation power to “legislate the nation's banking and stock exchange systems” while taking account of the “special function and role of the cantonal banks.”⁶⁴

Federal Act

- *Financial Market Supervision Act (FINMASA)*⁶⁵ (Explained in the body of this chapter).

⁶² This appendix is based on FINMA, Legal Basis, <https://www.finma.ch/en/documentation/legal-basis/laws-and-ordinances/> (Accessed on August 3, 2022).

⁶³ The Federal Council, Federal Constitution of the Swiss Confederation, Ibid.

⁶⁴ Ibid. Article 98.

⁶⁵ The Federal Council, Federal Act on the Swiss Financial Market Supervisory Authority (Financial Market Supervision Act, *FINMASA*), Ibid.

Table 5.2 Legal basis for Switzerland's financial regulators and financial institutions

Swiss regulator or financial institution	Abbreviation	Decision date	Date of effect
Financial Market Supervisory Authority (FINMA)			
Federal Constitution			
<i>Federal Constitution</i>	No Abbreviation	December 17, 1998	December 31, 1999
Federal Acts			
<i>Financial Market Supervision Act</i>	FINMASA	June 21, 2007	December 31, 2008
Federal Council Ordinance			
<i>Ordinance on the Financial Market Supervision Act</i>	No Abbreviation	December 12, 2019	January 31, 2020
FINMA ordinances			
<i>FINMA Ordinance on the Levying of Supervisory Fees & Levies</i>	FINMA-GebV*	October 14, 2008	December 31, 2008
<i>FINMA Ordinance on Data Processing</i>	No Abbreviation	September 7, 2011	September 30, 2011
<i>FINMA Personnel Ordinance</i>	No Abbreviation	August 10, 2008	December 31, 2008
<i>FINMA Personnel Data Ordinance</i>	No Abbreviation	August 24, 2021	September 30, 2021
Financial Services			
Federal Act			
<i>Financial Services Act</i>	FinSA	June 14, 2018	December 31, 2019
Federal Council Ordinance			
<i>Financial Services Ordinance</i>	FinSO	November 5, 2019	December 31, 2019
Banks			
Federal Act			
<i>Banking Act</i>	BA	November 7, 1934	February 28, 1935
Federal Council Ordinances			
<i>Ordinance on Banks and Savings Banks</i>	BankO	April 29, 2014	December 31, 2014
<i>Capital Adequacy Ordinance</i>	CAO	May 31, 2012	December 31, 2012

(continued)

Table 5.2 (continued)

Swiss regulator or financial institution	Abbreviation	Decision date	Date of effect
<i>Liquidity Ordinance</i>	<i>LiqO</i>	November 29, 2012	December 31, 2012
FINMA Ordinances			
<i>FINMA Foreign Bank Ordinance</i>	<i>FBO-FINMA</i>	October 20, 1996	December 31, 1996
<i>FINMA Banking Insolvency Ordinance</i>	<i>BIO-FINMA</i>	August 29, 2012	October 31, 2012
<i>FINMA Accounting Ordinance</i>	<i>FINMA-AO</i>	October 30, 2019	December 31, 2019
	Securities Firms		
Federal Act			
<i>Financial Institutions Act</i>	<i>FinIA</i>	June 14, 2018	December 31, 2019
Federal council ordinance			
<i>Financial Institutions Ordinance</i>	<i>FinIO</i>	November 5, 2019	December 31, 2019
FINMA ordinance			
<i>FINMA Financial Institutions Ordinance</i>	<i>FinIO-FINMA</i>	November 3, 2020	December 31, 2020
	Insurers		
Federal Acts			
<i>Insurance Supervision Act</i>	<i>ISA</i>	December 16, 2004	December 31, 2005
<i>Insurance Contract Act</i>	<i>ICA</i>	April 1, 1908	December 31, 1909
Federal Council Ordinances			
<i>Insurance Supervision Ordinance</i>	<i>ISO</i>	November 8, 2005	December 31, 2005
<i>Ordinance on the Lifting of Restrictions on the Freedom of Contract in Insurance Contracts</i>	No Abbreviation	February 28, 1966	March 31, 1966

Swiss regulator or financial institution	Abbreviation	Decision date	Date of effect
FINMA ordinances			
<i>FINMA Insurance Supervision Ordinance</i>	<i>ISO-FINMA</i>	November 8, 2005	December 31, 2005
<i>FINMA's Insurance Bankruptcy Ordinance</i>	<i>IBO-FINMA</i>	October 16, 2012	December 31, 2012
Financial market infrastructures			
Federal Acts			
<i>Financial Market Infrastructure Act</i>	<i>FinMIA</i>	June 18, 2015	December 31, 2015
<i>Financial Institutions Act</i>	<i>FinIA</i>	June 14, 2018	December 31, 2019
Federal Council Ordinances			
<i>Financial Market Infrastructure Ordinance</i>	<i>FinMIO</i>	November 24, 2015	December 31, 2015
<i>Financial institutions ordinance</i>	<i>FinIO</i>	November 5, 2019	December 31, 2019
<i>Capital Adequacy Ordinance</i>	<i>CAO</i>	May 31, 2012	December 31, 2012
<i>Takeover Ordinance</i>	<i>TOO</i>	August 20, 2008	December 31, 2008
FINMA Ordinances			
<i>FINMA Financial Market Infrastructure Ordinance</i>	<i>FinMIO-FINMA</i>	December 2, 2015	December 31, 2015
<i>FINMA Banking Insolvency Ordinance</i>	<i>BIO-FINMA</i>	August 29, 2012	October 31, 2012
Regulation			
<i>Rules of the Takeover Board</i>	<i>R-TOB</i>	August 20, 2008	December 31, 2008
Collective Investment Schemes			
Federal Acts			
<i>Collective Investment Schemes Act</i>	<i>CISA</i>	June 22, 2006	December 31, 2006
<i>Financial Institutions Act</i>	<i>FinIA</i>	June 14, 2018	December 31, 2019

(continued)

Table 5.2 (continued)

Swiss regulator or financial institution	Abbreviation	Decision date	Date of effect
Federal Council Ordinances			
<i>Ordinance on Collective Investment Schemes</i>	CISO	November 21, 2006	December 31, 2006
<i>Financial Institutions Ordinance</i>	FinIO	November 6, 2019	December 31, 2019
FINMA Ordinances			
<i>FINMA Collective Investment Schemes Ordinance</i>	CISO-FINMA	August 26, 2014	December 31, 2014
<i>FINMA Collective Investment Schemes Bankruptcy Ordinance</i>	CISBO-FINMA	December 5, 2012	February 28, 2013
<i>FINMA Financial Institutions Ordinance</i>	FinIO-FINMA	November 3, 2020	December 31, 2020
	Portfolio managers (trustees)		
Federal Acts			
<i>Financial Institutions Act</i>	FinIA	June 14, 2018	December 31, 2019
<i>Financial Market Supervision Act</i>	FINMASA	June 21, 2007	December 31, 2008
<i>Financial Services Act</i>	FinSA	June 14, 2018	December 31, 2019
Federal council ordinances			
<i>Financial Institutions Ordinance</i>	FinIO	November 5, 2019	December 5, 2019
<i>Financial Services Ordinance</i>	FinSO	November 5, 2019	December 31, 2019
FINMA ordinance			
<i>FINMA Financial Institutions Ordinance</i>	FinIO-FINMA	November 3, 2020	December 31, 2020
	Supervisory Organizations		
Federal Acts			
<i>Financial Market Supervision Act</i>	FINMASA	June 21, 2007	December 31, 2008

Swiss regulator or financial institution	Abbreviation	Decision date	Date of effect
<i>Financial Institutions Act</i>	<i>FinIA</i>	June 14, 2018	December 31, 2019
<i>Financial Services Act</i>	<i>FinSA</i>	June 14, 2018	December 31, 2019
<i>Anti-Money Laundering Act</i>	<i>AMLA</i>	October 9, 1997	March 31, 1998
Federal Council Ordinance			
<i>Supervisory Organizations Ordinance</i>	<i>SOO</i>	November 5, 2019	December 31, 2019
	Anti-Money Laundering Act (AMLA)		
Federal Act			
<i>Anti-Money Laundering Act</i>	<i>AMLA</i>	October 19, 1997	March 31, 1998
Federal Council Ordinance			
<i>Anti-Money Laundering Ordinance</i>	No Abbreviation	November 10, 2015	December 31, 2015
FINMA Ordinance			
<i>FINMA Anti-Money Laundering Ordinance</i>	<i>AMLO-FINMA</i>	June 2, 2015	December 31, 2015
	Mortgage Bonds		
Federal Act			
<i>Mortgage Bond Act</i>	<i>PfG*</i>	June 24, 1930	January 31, 1931
Federal Council Ordinance			
<i>Mortgage Bond Ordinance</i>	<i>PfV*</i>	January 22, 1931	January 31, 1931
	Auditing		
FINMA Ordinance			
<i>Financial Market Auditing Ordinance</i>	<i>FINMA-PV*</i>	November 4, 2014	December 31, 2014

* The asterisk indicates that the abbreviation is for the German name of the law or ordinance. There is no official English abbreviation

** A law or ordinance passed between 2008 and 2022

Source: The Financial Market is Governed by Laws and Ordinances, <https://www.finma.ch/en/documentation/legal-basis/laws-and-ordinances/> (Accessed on November 6, 2022)

Federal Ordinance

- *FINMA Ordinance on the Financial Market Supervision Act*⁶⁶

The *Ordinance on the Financial Market Supervision Act* (December 13, 2019) explains the FINMA's international regulatory responsibilities. It also describes the role of the FINMA in information exchanges with the FDF.

FINMA Ordinances

- *FINMA Ordinance on the Levying of Supervisory Fees and Levies*⁶⁷

The *FINMA Ordinance on the Levying of Supervisory Fees and Levies* (*FINMA-GebV*—October 15, 2008) controls the fees and duties that can be imposed on financial intermediaries by the FINMA. The rationale for charging these fees is to pass financial supervision costs to those being supervised, applying the “user pays” principle. It also regulates the FINMA's reserve formation.

- *FINMA Ordinance on Data Processing*⁶⁸

The *FINMA Ordinance on Data Processing* (October 1, 2011) “governs the collection of data that may be relevant for assessing an individual's guarantee of irreproachable business conduct (data collection to monitor proper business conduct, previously also referred to as the watch list) and data processing by third parties within the scope of supervision.”⁶⁹ It empowers the FINMA to ensure the management of supervised financial intermediaries is done by qualified individuals and specifies how personal information should be handled. Since 2011, this *Ordinance* has been supplemented and

⁶⁶ Der Bundesrat, Verordnung zum Finanzmarktaufsichtsgesetz, <https://www.fedlex.admin.ch/eli/cc/2020/23/de> (Accessed on August 3, 2022).

⁶⁷ Der Bundesrat, Verordnung über die Erhebung von Gebühren und Abgaben durch die Eidgenössische Finanzmarktaufsicht, <https://www.fedlex.admin.ch/eli/cc/2008/749/de> (Accessed on August 3, 2022).

⁶⁸ Der Bundesrat, Verordnung der Eidgenössischen Finanzmarktaufsicht über die Datenbearbeitung (Datenverordnung-FINMA), <https://www.fedlex.admin.ch/eli/cc/2011/597/de> (Accessed on August 3, 2022). Also see FINMA, FINMA Ordinance on Data Processing—Complete Revision: Key Points, March 9, 2022, https://www.finma.ch/-/media/finma/dokumente/dokumentencenter/anhoeerungen/laufende-anhoeerungen/20220309---datenverordnung-finma/20220309_datenverordnung_finma_anhoeerung_kernpunkte.pdf?sc_lang=en (Accessed on February 1, 2023). Also, see also FINMA: FINMA Portal: Data Protection Provisions, August 2018, https://www.finma.ch/-/media/finma/dokumente/datenschutzbestimmungen_finma-portal_final.pdf?sc_lang=en (Accessed on August 3, 2022).

⁶⁹ Ibid.

details added to clarify its meaning. The September 25, 2020, revision of the *Federal Act on Data Protection (FADP)* should ignite a full review and update of the *FINMA Ordinance on Data Processing*.⁷⁰

- *FINMA Personnel Ordinance*⁷¹

The *FINMA Personnel Ordinance* (August 11, 2008) governs employment conditions for all the FINMA staff members.

- *FINMA Personnel Data Ordinance*⁷²

The *FINMA Personnel Data Ordinance* (August 25, 2021) explains how the FINMA should process personnel data.⁷³

Legal Basis for Swiss Financial Services

Federal Act

- *Financial Services Act*⁷⁴ (Explained in the body of this chapter).

Federal Council Ordinance

- *Financial Services Ordinance*⁷⁵

The *Financial Services Ordinance (FinSO)*—November 6, 2019) created requirements for honesty, diligence, and transparency in delivering financial services. Furthermore, it created a formal structure for overseeing financial instrument offerings. (See “Legal Basis for Portfolio Managers”).

⁷⁰ Ibid.

⁷¹ Der Bundesrat, Verordnung über das Personal der Eidgenössischen Finanzmarktaufsicht, <https://www.fedlex.admin.ch/eli/cc/2008/748/de> (Accessed on August 3, 2022).

⁷² Der Bundesrat, Verordnung der FINMA über den Schutz von Personendaten ihres Personals (Personaldatenverordnung FINMA), <https://www.fedlex.admin.ch/eli/cc/2021/552/de> (Accessed on August 3, 2022).

⁷³ FINMA, Verhaltenskodex der Eidgenössischen Finanzmarktaufsicht (Verhaltenskodex FINMA), Ibid.

⁷⁴ The Federal Council, Federal Act on Financial Services (FinSA), Ibid.

⁷⁵ The Federal Council, Ordinance on Financial Services (Financial Services Ordinance, FinSO), <https://www.fedlex.admin.ch/eli/cc/2019/759/en> (Accessed on August 3, 2022).

Legal Basis for Swiss Banks

Federal Act

- *Banking Act*⁷⁶ (Explained in the body of this chapter).

Federal Council Ordinances

- *Ordinance on Banks and Savings Banks*⁷⁷

The *Ordinance on Banks and Savings Banks* (*BankO*, April 30, 2014) entered into force on August 1, 2017. It amended the *BA* by addressing banks' and individuals' license requirements and the conduct of their financial business. The *BankO* also includes organizational requirements and has accounting rules for banks, deposit insurance, the transfer and liquidation of dormant assets, and emergency planning, including restructuring and liquidating SIBs.⁷⁸

- *Capital Adequacy Ordinance*⁷⁹

The *Capital Adequacy Ordinance* (*CAO*—June 1, 2012) protects creditors, depositors, and the stability of Switzerland's financial system by requiring banks and account-keeping securities firms to hold risk-weighted capital sufficient to safeguard themselves against insolvency. Capital is also needed to shield the banking system from financial contagion, which happens when the losses of one financial institution or more spill over and cause liquidity or solvency problems for other financial intermediaries. The *CAO* forces financial institutions to moderate risks by holding capital appropriate for their business activities. By implementing the *CAO* and FINMA's complementary circulars, Switzerland complied with the Basel III capital adequacy rules.⁸⁰ (See “Legal Basis for Financial Market Infrastructures”).

⁷⁶ Der Bundesrat, Bundesgesetz über die Banken und Sparkassen, Ibid.

⁷⁷ Der Bundesrat, Verordnung über die Banken und Sparkassen (Bankenverordnung, BankV), Ibid.

⁷⁸ Peter Hsu and Daniel Flühmann, *Banking Laws and Regulations 2022 | Switzerland*, Global Legal Insights, Ibid.

⁷⁹ The Federal Council, Ordinance of 1 June 2012 on the Capital Adequacy and Risk Diversification of Banks and Securities Firms (Capital Adequacy Ordinance, CA), June 1, 2012, <https://www.fedlex.admin.ch/eli/cc/2012/629/en> (Accessed on August 3, 2022).

⁸⁰ The Basel Committee on Banking Supervision published its Basel III guidelines in November 2010. Initially, the phase-in period was from 2013 to 2015 but extended to January 1, 2022, and (now) has been delayed until January 1, 2023.

- *Liquidity Ordinance*⁸¹

The *Liquidity Ordinance* (*LiqO*—November 30, 2012) seeks to ensure that banks have sufficient liquidity in the form of easy-to-access funds to support current payment obligations. The *LiqO* addresses both the quantity and quality of liquid assets a bank must hold.

FINMA Ordinances

- *FINMA Foreign Banks Ordinance*⁸²

The *Ordinance of the Swiss Financial Market Supervisory Authority on Foreign Banks* (*FINMA Foreign Banks Ordinance, FBO-FINMA*—October 21, 1996) is based on *Article 2, paragraph 2* of the *BA*. It specifies the rules that banks controlled by (1) foreign persons and branches and (2) representative offices of banks incorporated abroad must follow when they wish to set up a branch in Switzerland.

- *FINMA Banking Insolvency Ordinance*⁸³

FINMA's *Banking Insolvency Ordinance* (*BIO-FINMA*, August 30, 2012) defines restructuring and liquidation proceedings for insolvent banks under *Articles 28-37 g* of the *BA*. It controls operating licenses and rules for business conduct and further establishes the restructuring and bankruptcy procedures set out in the *BA*. The *BIO-FINMA* covers banks, securities firms, fund management companies, and central mortgage bond institutions.

If restructuring is impossible or has failed, the FINMA must withdraw the weakened bank's license and publicly announce its liquidation. After that,

⁸¹ Der Bundesrat, Verordnung über die Liquidität der Banken und Wertpapierhäuser, November 30, 2012, <https://www.fedlex.admin.ch/eli/cc/2012/883/de> (Accessed on August 3, 2022). The unofficial English version can be found at KPMG, Ordinance on the Liquidity of Banks and Investment Firms (Liquidity Ordinance, LiqO), November 30, 2012, <https://assets.kpmg/content/dam/kpmg/ch/pdf/kpmg-liquo-2021.pdf> (Accessed on August 3, 2022).

⁸² Der Bundesrat, Verordnung der Eidgenössischen Finanzmarktaufsicht über die ausländischen Banken in der Schweiz. (Auslandbankenverordnung-FINMA, ABV-FINMA), October 21, 1996, https://www.fedlex.admin.ch/eli/cc/1997/62_62_62/de (Accessed on August 3, 2022). An unofficial English version can be found at KPMG, Ordinance of the Swiss Financial Market Supervisory Authority on Foreign Banks in Switzerland (Foreign Banks Ordinance-FINMA, FBO-FINMA), October 21, 1996, <https://assets.kpmg/content/dam/kpmg/ch/pdf/ordinance-on-foreign-banks-in-switzerland-en.pdf> (Accessed on August 3, 2022).

⁸³ The Federal Council, Ordinance of the Swiss Financial Market Supervisory Authority on the Insolvency of Banks and Securities Firms, (FINMA Banking Insolvency Ordinance, BIO-FINMA), August 30, 2012, <https://www.fedlex.admin.ch/eli/cc/2012/648/en> (Accessed on August 3, 2022).

the FINMA must appoint a liquidator for the proceedings (e.g., selling and distribution) or take over liquidator responsibilities. In liquidation proceedings for bank and securities dealers, the claims of privileged customers up to CHF100,000 are paid out immediately and rank above general creditors. (See “Legal Basis for Financial Market Infrastructures”).

- *FINMA Accounting Ordinance*⁸⁴

The *FINMA Accounting Ordinance* (*FINMA-AO*, October 31, 2019) regulates the preparation of financial statements and the publication of annual reports and interim financial statements under the *BA*. It defines the scope, terms, and standards to which banks, security firms, financial groups, and financial conglomerates are subject. This accounting *Ordinance* is based on:

- The *BA* (i.e., *Article 3g* and *Article 6b, paragraphs 3 and 4*),
- The *Ordinance on Banks and Savings Banks Banking Ordinance* (*BankO*) (i.e., (1) *Article 27 paragraph 1*, (2) *Article 31 paragraph 2*, (3) *Article 32 paragraph 2*, (4) *Article 35 paragraph 4*, (5) *Article 36 paragraph 3*, and (6) *Articles 37 and 42*),
- The *Financial Institutions Act* (*FinIA*) (i.e., *Article 48*).

Legal Basis for Securities Firms

Federal Act

- *Financial Institutions Act*⁸⁵ (Explained in the body of this chapter).

⁸⁴ Der Bundesrat, Verordnung der Eidgenössischen Finanzmarktaufsicht über die Rechnungslegung (Rechnungslegungsverordnung-FINMA, RelV-FINMA), <https://www.fedlex.admin.ch/eli/oc/2019/760/de> (Accessed on August 3, 2022). An unofficial English version of this ordinance can be found at KPMG, Ordinance on the Accounting of the Swiss Financial Market Supervisory Authority (FINMA Accounting Ordinance, FINMA-AO, October 31, 2019), <https://assets.kpmg/content/dam/kpmg/ch/pdf/ordinance-accounting-of-the-swiss-financial-market-supervisory-authority.pdf> (Accessed on August 3, 2022). Also, see FINMA, FINMA Accounting Ordinance 20/xx “Accounting – banks: Key Points, <https://bfadmin.cdbf.ch/Serverur/documents/763> (Accessed on August 3, 2022).

⁸⁵ The Federal Council, Federal Act on Financial Institutions (Financial Institutions Act, FinIA), Ibid.

Federal Council Ordinance

- *Financial Institutions Ordinance*⁸⁶

The *Financial Institutions Ordinance* (*FinIO*, November 6, 2019) governs the authorization, organizational requirements, duties, and supervision of portfolio managers (trustees), managers of collective assets, fund management companies, and securities firms. Among the critical provider–client relationships it governs are the:

- Delegation of tasks (*Article 15*),
- Commerciality (*Article 19*),
- Additional authorization needed to be a trustee—as opposed to strictly a portfolio manager (*Article 20*),
- Right to be subject to supervision by a supervisory authority (*Article 21*),
- Organization (*Article 23*),
- Tasks of a portfolio manager or trustee (*Article 24*),
- Qualifications (*Article 25*),
- Risk management and internal control (*Article 26*),
- Minimum capital, adequate capital, and qualifying capital (*Articles 27, 28, and 29*),
- Accounting (*Article 32*), and
- Supervision (*Articles 83 to 85*).

(See “Legal Basis for Financial Market Infrastructures,” “Legal Basis for Collective Investment Schemes,” and “Legal Basis for Portfolio Managers”).

FINMA Ordinances

- *FINMA Financial Institutions Ordinance*⁸⁷

The *FINMA Financial Institutions Ordinance* (*FinIO-FINMA*—November 4, 2020) regulates supervised financial institutions’ authorization and organizational requirements and lays out the conditions under which asset

⁸⁶ The Federal Council, Ordinance on Financial Institutions (Financial Institutions Ordinance, *FinIO*), November 6, 2019, <https://www.fedlex.admin.ch/eli/cc/2019/763/en> (Accessed on August 3, 2022).

⁸⁷ Der Bundesrat, Verordnung der Eidgenössischen Finanzmarktaufsicht über die Finanzinstitute (Finanzinstitutsverordnung-FINMA, *FinIV-FINMA*), November 4, 2020, <https://www.fedlex.admin.ch/eli/cc/2020/922/de> (Accessed on August 3, 2022).

managers (trustees) can count professional liability insurance against their own funds. In 2021, the *FinIO-FINMA* was revised to help control professional indemnity insurance (e.g., negligence) for portfolio managers (trustees) and managers of collective assets, including minimum insurance levels needed for authorization as a portfolio manager. *FinIO-FINMA* also sets out the requirements for calculating the minimum standards for portfolio managers' authorization and addresses risk management and internal control systems for managers of collective assets.⁸⁸

Legal Basis for Insurers

Federal Acts

- *Insurance Supervision Act*⁸⁹ (Explained in the body of this chapter).
- *Insurance Contract Act*⁹⁰ (Explained in the body of this chapter).

Federal Council Ordinances

- *Insurance Supervision Ordinance*⁹¹

The *Swiss Federal Ordinance on the Supervision of Private Insurance Companies* (*Insurance Supervision Ordinance, ISO*, November 9, 2005) sets disclosure rules for private insurance companies and other insurance endeavors in Switzerland. It requires registration in a centralized register.⁹² The *ISO* gives the FINMA authority to issue minimum standards on insurance companies' annual financial statements and, in doing so, to diverge from specific provisions in Switzerland's *Code of Obligations*. On July 1, 2015, the *ISO* was

⁸⁸ FINMA, FINMA Adopts Regulation Implementing FinSA and FinIA, November 12, 2020, <https://www.finma.ch/en/news/2020/11/20201112-medienmitteilung-folgeregulierung-fidleg-finig/> (Accessed on August 3, 2022).

⁸⁹ Der Bundesrat, Bundesgesetz betreffend die Aufsicht über Versicherungsunternehmen, Ibid. An unofficial English translation can be found at Federal Law Regarding the Supervision of Insurance Companies, Ibid. Also, see CapLaw, Insurance Supervision Act—Overview of the Ongoing Revision, Ibid.

⁹⁰ Der Bundesrat, Bundesgesetz über den Versicherungsvertrag, Ibid. Also, see PwC, 7 Months to Be Ready for the Revision of the Swiss Insurance Contract Act—PwC Accelerations to Ensure On-Time Compliance, Ibid.

⁹¹ Der Bundesrat, Verordnung der Eidgenössischen Finanzmarktaufsicht über die Beaufsichtigung von privaten Versicherungsunternehmen (Versicherungsaufsichtsverordnung-FINMA, AVO-FINMA), November 9, 2005, <https://www.fedlex.admin.ch/eli/cc/2005/736/de> (Accessed on August 3, 2022).

⁹² FINMA, Supervision, <https://www.finma.ch/en/authorisation/insurance-intermediaries/vermittlerportal/aufsicht/> (Accessed on August 3, 2022).

partially revised to include regulations on insurance company accounting standards.⁹³

- *Ordinance on the Lifting of Restrictions on the Freedom of Contract in Insurance Contracts*⁹⁴

The *Ordinance on the Lifting of Restrictions on the Freedom of Contract in Insurance Contracts* (March 1, 1966) allows differences in the standard provisions of life insurance contracts so long as the policies' benefits meet specific criteria.

FINMA Ordinances

- *FINMA Insurance Supervision Ordinance*⁹⁵

The *FINMA Insurance Supervision Ordinance* (ISO-FINMA—November 9, 2005) further clarifies the *Insurance Supervision Act* and the *Insurance Supervision Ordinance*. On December 15, 2015, the ISO-FINMA was revised, implementing new (i.e., as of July 1, 2015) ISO accounting regulations on insurance companies.⁹⁶

- *FINMA Insurance Bankruptcy Ordinance*⁹⁷

The *FINMA Insurance Bankruptcy Ordinance* (IBO-FINMA—October 17, 2012) clarifies provisions of the *Insurance Supervision Act* regarding bankruptcy proceedings for insurance companies. It guides the courses of action and procedural steps that the FINMA should take during bankruptcy

⁹³ FINMA, FINMA Brings Partially Revised FINMA Insurance Supervision Ordinance into Force, November 17, 2015, <https://www.finma.ch/-/media/finma/dokumente/dokumentencenter/8news/medienmitteilungen/2015/11/20151117-mm-avo-finma.pdf> (Accessed on August 3, 2022).

⁹⁴ Der Bundesrat, Verordnung über die Aufhebung von Beschränkungen der Vertragsfreiheit in Versicherungsverträgen, March 1, 1966, https://www.fedlex.admin.ch/eli/cc/1966/476_495_495/de (Accessed on August 3, 2022).

⁹⁵ Der Bundesrat, Verordnung der Eidgenössischen Finanzmarktaufsicht über die Beaufsichtigung von privaten Versicherungsunternehmen (Versicherungsaufsichtsverordnung-FINMA, AVO-FINMA), Ibid.

⁹⁶ FINMA, FINMA Brings Partially Revised FINMA Insurance Supervision Ordinance into Force, Ibid.

⁹⁷ Der Bundesrat, Verordnung der Eidgenössischen Finanzmarktaufsicht über den Konkurs von Versicherungsunternehmen (Versicherungskonkursverordnung-FINMA, VKV-FINMA), October 17, 2012, <https://www.fedlex.admin.ch/eli/cc/2012/707/de> (Accessed on August 3, 2022).

proceedings so that the process is transparent. The *IBO-FINMA* was put into effect on January 1, 2013.⁹⁸

Legal Basis for Swiss Financial Market Infrastructures

Federal Acts

- *Financial Market Infrastructure Act*⁹⁹ (Explained in the body of this chapter).
- *Financial Institutions Act*¹⁰⁰ (Explained in the body of this chapter).

Federal Council Ordinances

- *Financial Market Infrastructure Ordinance*¹⁰¹

The *Financial Market Infrastructure Ordinance* (*FinMIO*—November 25, 2015) regulates the authorization conditions and duties for financial market infrastructures, as well as the responsibilities of derivative trading participants, shareholding disclosures, public takeover offers, and exceptions to Switzerland's ban on insider trading and market manipulation rules.

- *Financial Institutions Ordinance*¹⁰²

The *Financial Institutions Ordinance* (*FinIO*, November 6, 2019) governs the authorization, organizational requirements, duties, and supervision of portfolio managers (trustees), managers of collective assets, fund management companies, and securities firms. Among the critical provider–client relationships it governs are the:

⁹⁸ FINMA, FINMA's Insurance Bankruptcy Ordinance Comes into Force, November 13, 2012, <https://www.finma.ch/en/news/2012/11/mm-inkraftsetzung-vkv-20121113/> (Accessed on August 3, 2022).

⁹⁹ The Federal Council, Federal Act on Financial Market Infrastructures and Market Conduct in Securities and Derivatives Trading, *Ibid.*

¹⁰⁰ The Federal Council, Federal Act on Financial Institutions (Financial Institutions Act, *FinIA*), *Ibid.*

¹⁰¹ The Federal Council, Ordinance of the Financial Market Infrastructures and Market Conduct in Securities and Derivatives Trading (Financial Market Infrastructure Ordinance, *FinMIO*), November 25, 2015, <https://www.fedlex.admin.ch/eli/cc/2015/854/en> (Accessed on August 3, 2022).

¹⁰² The Federal Council, Ordinance on Financial Institutions (Financial Institutions Act, *FinIO*), *Ibid.*

- Delegation of tasks (*Article 15*),
- Commerciality (*Article 19*),
- Additional authorization needed to be a trustee—as opposed to strictly a portfolio manager (*Article 20*),
- Right to be subject to supervision by a supervisory authority (*Article 21*),
- Organization (*Article 23*),
- Tasks of a portfolio manager or trustee (*Article 24*),
- Qualifications (*Article 25*),
- Risk management and internal control (*Article 26*),
- Minimum capital, adequate capital, and qualifying capital (*Articles 27, 28, and 29*),
- Accounting (*Article 32*), and
- Supervision (*Articles 83 to 85*).

(See “Legal Basis for Securities Firms,” “Legal Basis for Collective Investment Schemes,” and “Legal Basis for Portfolio Managers”).

- *Capital Adequacy Ordinance*¹⁰³

The *Capital Adequacy Ordinance* (CAO—June 1, 2012) protects creditors, depositors, and the stability of Switzerland’s financial system by requiring banks and account-keeping securities firms to hold risk-weighted capital sufficient to safeguard themselves against insolvency. Capital is also needed to shield the banking system from financial contagion, which happens when the losses of one financial institution or more spill over and cause liquidity or solvency problems for other financial intermediaries. The CAO forces financial institutions to moderate risks by holding capital appropriate for their business activities. By implementing the CAO and FINMA’s complementary circulars, Switzerland complied with the Basel III capital adequacy rules.¹⁰⁴ (See “Legal Basis for Swiss Banks”).

¹⁰³ The Federal Council, Ordinance on the Capital Adequacy and Risk Diversification of Banks and Securities Firms (Capital Adequacy Ordinance, CAO), *Ibid*.

¹⁰⁴ The Basel Committee on Banking Supervision published its Basel III guidelines in November 2010. Initially, the phase-in period was from 2013 to 2015 but extended to January 1, 2022, and (now) has been delayed until January 1, 2023.

- *Takeover Ordinance*¹⁰⁵

The *Takeover Ordinance* (TOO—August 21, 2008) governs the fairness and transparency of public purchase offers and ensures that investors are treated equally. It establishes the content rules of an offering prospectus and counterparties' obligations.¹⁰⁶

FINMA Ordinances

- *FINMA Financial Market Infrastructure Ordinance*¹⁰⁷

The *FINMA Financial Market Infrastructure Ordinance* (*FinMIO-FINMA*—December 3, 2015) regulates record-keeping and documentation requirements for security firms governed by the *FinIA* and those admitted to a Swiss trading venue. The *FinMIO-FINMA* requires these firms to record, in a standardized format, trades completed both on- and off-exchange.

- *FINMA Banking Insolvency Ordinance*¹⁰⁸

FINMA's *Banking Insolvency Ordinance* (*BIO-FINMA*, August 30, 2012) defines restructuring and liquidation proceedings for insolvent banks under *Articles 28–37 g* of the *BA*. It controls operating licenses and rules for business conduct and further establishes the restructuring and bankruptcy procedures set out in the *BA*. The *BIO-FINMA* covers banks, securities firms, fund management companies, and central mortgage bond institutions.

If restructuring is impossible or has failed, the FINMA must withdraw the weakened bank's license and publicly announce its liquidation. After that, the FINMA must appoint a liquidator for the proceedings (e.g.,

¹⁰⁵ Der Bundesrat, Verordnung der Übernahmekommission über öffentliche Kaufangebote (Übernahmeverordnung, UEV), August 21, 2008, <https://www.fedlex.admin.ch/eli/cc/2008/745/de> (Accessed on August 3, 2022).

¹⁰⁶ Frank Gerhard, Hansjürg Appenzeller, and Daniel Hasler, Public Mergers and Acquisitions in Switzerland: Overview, Practical Law, Law stated on August 1, 2021, [https://uk.practicallaw.thomsonreuters.com/8-502-1588?transitionType=Default&contextData=\(sc.Default\)&firstPage=true](https://uk.practicallaw.thomsonreuters.com/8-502-1588?transitionType=Default&contextData=(sc.Default)&firstPage=true) (Accessed on August 3, 2022).

¹⁰⁷ The Federal Council, The Ordinance of the Swiss Financial Market Supervisory Authority on Financial Market Infrastructures and Market Conduct in Securities and Derivatives Trading (FINMA Financial Market Infrastructure Ordinance, *FinMIO-FINMA*), December 3, 2015, <https://www.fedlex.admin.ch/eli/cc/2015/855/en> (Accessed on August 3, 2022).

¹⁰⁸ The Federal Council, Ordinance of the Swiss Financial Market Supervisory Authority on the Insolvency of Banks and Securities Firms (FINMA Banking Insolvency Ordinance, *BIO-FINMA*), *Ibid.*

selling and distribution) or take over liquidator responsibilities. In liquidation proceedings for bank and securities dealers, the claims of privileged customers up to CHF100,000 are paid out immediately and rank above general creditors. (See “Legal Basis for Swiss Banks”).

Regulations

- *Regulations of the Takeover Board*¹⁰⁹

The *Regulations of the Takeover Board* (R-TOB, August 21, 2008) defines the organization of Switzerland’s Takeover Board. The Board’s purpose is to ensure compliance with takeover regulations, which require fairness, equal treatment, and tender-offer transparency so that equity security holders of a targeted company can make informed decisions.

Legal Basis for Collective Investment Schemes

Federal Acts

- *Collective Investment Schemes Act* (Explained in the body of this chapter).
- *Financial Institutions Act* (Explained in the body of this chapter).

Federal Council Ordinances

- *Collective Investment Schemes Ordinance*¹¹⁰

The *Ordinance on Collective Investment Schemes* (*Collective Investment Schemes Ordinance*, CISO—November 22, 2006) requires investment clubs of 20 participants or fewer to state membership rights and regularly inform

¹⁰⁹ Der Bundesrat, Reglement der Übernahmekommission (R-UEK), August 21, 2008, <https://www.fedlex.admin.ch/eli/cc/2008/746/de> (Accessed on August 3, 2022). An unofficial translation of this *Ordinance* can be found at Regulations of the Takeover Board (R-TOB), August 21, 2008, https://www.takeoverpractice.ch/tl_files/inhalte/Rechtsgrundlagen/Andere%20Erlasse/RegulationsTOB_54.195.2_01.01.2009.pdf (Accessed on August 3, 2022).

¹¹⁰ The Federal Council, Ordinance on Collective Investment Schemes (Collective Investment Schemes Ordinance, CISO), November 22, 2006, <https://www.fedlex.admin.ch/eli/cc/2006/859/en> (Accessed on August 3, 2022).

members of their investment status. The *CISO* helps describe the provisions of the *CISA* and is applicable regardless of a financial institution's legal status.¹¹¹

- *Financial Institutions Ordinance*¹¹²
- The *Financial Institutions Ordinance* (*FinIO*, November 6, 2019) governs the authorization, organizational requirements, duties, and supervision of portfolio managers (trustees), managers of collective assets, fund management companies, and securities firms. Among the critical provider–client relationships it governs are the:
 - Delegation of tasks (*Article 15*),
 - Commerciality (*Article 19*),
 - Additional authorization needed to be a trustee—as opposed to strictly a portfolio manager (*Article 20*),
 - Right to be subject to supervision by a supervisory authority (*Article 21*),
 - Organization (*Article 23*),
 - Tasks of a portfolio manager or trustee (*Article 24*),
 - Qualifications (*Article 25*),
 - Risk management and internal control (*Article 26*),
 - Minimum capital, adequate capital, and qualifying capital (*Articles 27, 28, and 29*),
 - Accounting (*Article 32*), and
 - Supervision (*Articles 83 to 85*).

(See “Legal Basis for Securities Firms,” “Legal Basis for Financial Market Infrastructures,” and “Legal Basis for Portfolio Managers”).

FINMA Ordinances

- *FINMA Collective Investment Schemes Ordinance*¹¹³

The *Ordinance of the Swiss Financial Market Supervisory Authority on Collective Investment Schemes* (*FINMA Collective Investment Schemes Ordinance, CISO-FINMA*—August 27, 2014) defines provisions in the *CISA*. It also addresses

¹¹¹ Peter Hsu and Daniel Flühmann, *Banking Laws and Regulations 2022* | Switzerland, *Ibid*.

¹¹² The Federal Council, *Ordinance on Financial Institutions* (*Financial Institutions Ordinance, FinIO*), *Ibid*.

¹¹³ The Federal Council, *Ordinance of the Swiss Financial Market Supervisory Authority on Collective Investment Schemes* (*FINMA Collective Investment Schemes Ordinance, CISO-FINMA*), <https://www.fedlex.admin.ch/eli/cc/2014/707/en> (Accessed on August 3, 2022).

the terms and obligations of security lending transactions for individuals and businesses that borrow and lend securities. The *CISO-FINMA* applies to fund management companies, investment companies with variable capital (SICAV),¹¹⁴ and their customers.

- *FINMA Collective Investment Schemes Bankruptcy Ordinance*¹¹⁵

The *FINMA Collective Investment Schemes Bankruptcy Ordinance* (*CISBO-FINMA*—December 6, 2012) specifies the bankruptcy proceedings for *CISA* license holders.

- *FINMA Financial Institutions Ordinance*¹¹⁶

Refer to “Legal Basis for Securities Firms” for further details.

Legal Basis for Portfolio Managers (Trustees)

Federal Acts

- *Financial Institutions Act*¹¹⁷ (Explained in the body of this chapter).
- *Financial Market Supervision Act*¹¹⁸ (Explained in the body of this chapter).
- *Financial Services Act*¹¹⁹ (Explained in the body of this chapter).

Federal Council Ordinances

- *Financial Institutions Ordinance*¹²⁰

¹¹⁴ “SICAV” is an abbreviation for the French term “Société d’Investissement à Capital Variable.”

¹¹⁵ Der Bundesrat, Verordnung der Eidgenössischen Finanzmarktaufsicht über den Konkurs von kollektiven Kapitalanlagen, (Kollektivanlagen-Konkursverordnung—FINMA, KAKV-FINMA), December 6, 2012, <https://www.fedlex.admin.ch/eli/cc/2013/118/de> (Accessed on August 3, 2022).

¹¹⁶ Der Bundesrat, Verordnung der Eidgenössischen Finanzmarktaufsicht über die Finanzinstitute (Finanzinstitutsverordnung-FINMA, FinIV-FINMA), Ibid.

¹¹⁷ The Federal Council, Federal Act on Financial Institutions (Financial Institutions Act, FinIA), Ibid.

¹¹⁸ The Federal Council, Federal Act on the Swiss Financial Market Supervisory Authority (Financial Market Supervision Act, *FINMASA*), Ibid.

¹¹⁹ The Federal Council, Federal Act on Financial Services (FinSA), Ibid.

¹²⁰ The Federal Council, Ordinance on Financial Institutions (Financial Institutions Ordinance, FinIO), Ibid.

The *Financial Institutions Ordinance* (*FinIO*, November 6, 2019) governs the authorization, organizational requirements, duties, and supervision of portfolio managers (trustees), managers of collective assets, fund management companies, and securities firms. Among the critical provider–client relationships it governs are the:

- Delegation of tasks (*Article 15*),
- Commerciality (*Article 19*),
- Additional authorization needed to be a trustee—as opposed to strictly a portfolio manager (*Article 20*),
- Right to be subject to supervision by a supervisory authority (*Article 21*),
- Organization (*Article 23*),
- Tasks of a portfolio manager or trustee (*Article 24*),
- Qualifications (*Article 25*),
- Risk management and internal control (*Article 26*),
- Minimum capital, adequate capital, and qualifying capital (*Articles 27, 28, and 29*),
- Accounting (*Article 32*), and
- Supervision (*Articles 83 to 85*).

(See “Legal Basis for Securities Firms,” “Legal Basis for Financial Market Infrastructures,” and “Legal Basis for Collective Investment Schemes”).

- *Financial Services Ordinance*¹²¹

The *Financial Services Ordinance* (*FinSO*—November 6, 2019) created requirements for honesty, diligence, and transparency in delivering financial services. Furthermore, it created a formal structure for overseeing financial instrument offerings. (See “Legal Basis for Financial Services”).

FINMA Ordinance

- *FINMA Financial Institutions Ordinance*¹²²

Refer to “Legal Basis for Securities Firms” for further details.

¹²¹ The Federal Council, Ordinance on Financial Services (Financial Services Ordinance, *FinSO*), *Ibid.*

¹²² The Federal Council, Verordnung der Eidgenössischen Finanzmarktaufsicht über die Finanzinstitute (Finanzinstitutsverordnung-FINMA, *FinIV-FINMA*), *Ibid.*

Legal Basis for Supervisory Organizations

Federal Acts

- *Financial Market Supervision Act*¹²³ (Explained in the body of this chapter).
- *Financial Institutions Act*¹²⁴ (Explained in the body of this chapter).
- *Financial Services Act*¹²⁵ (Explained in the body of this chapter).
- *Anti-Money Laundering Act*¹²⁶ (Explained in the body of this chapter).

Federal Council Ordinance

- *Supervisory Organizations Ordinance*¹²⁷

The *Supervisory Organizations Ordinance* (SOO, November 6, 2019) controls authorization conditions and the activities of newly created SOs. It covers portfolio managers (trustees) and trade assayers under the *Precious Metals Control Act*. SOO explains how independent portfolio managers (trustees) should be regulated by SOs authorized and governed by the FINMA. An SO must submit its license application to the FINMA. These applications contain information on the organization, location of the leadership, viable and sustainable sources of business activity financing, guarantees of sound business practices, and their possible transfer. License applications must also include granular personal information on the administrators, such as nationality, residence, other qualified supervisory participants, pending court and administrative proceedings, curriculum vitae, references, and criminal record.

¹²³ The Federal Council, Federal Act on the Swiss Financial Market Supervisory Authority (Financial Market Supervision Act, *FINMASA*), *Ibid.*

¹²⁴ The Federal Council, Federal Act on Financial Institutions (Financial Institutions Act, *FinIA*), June 15, 2018, *Ibid.*

¹²⁵ Federal Act on Financial Services (Financial Services Act, *FinSA*), *Ibid.*

¹²⁶ Federal Council, Federal Act on Combating Money Laundering and Terrorist Financing (Anti-Money Laundering Act, *AMLA*), *Ibid.*

¹²⁷ FINMA, Verordnung über die Aufsichtsorganisationen in der Finanzmarktaufsicht (Aufsichtsorganisationenverordnung, *AOV*), November 6, 2019, <https://www.fedlex.admin.ch/eli/cc/2019/765/de> (Accessed on August 3, 2022).

Legal Basis for Combating Money Laundering

Federal Act

- *Anti-Money Laundering Act*¹²⁸ (Explained in the body of this chapter).

Federal Council Ordinance

- *Anti-Money Laundering and Terrorist-Financing Ordinance*¹²⁹

The *Anti-Money Laundering Ordinance* (November 11, 2015) is based on *Article 8a, paragraphs 5 and 41* of the *Anti-Money Laundering Act*. It regulates:

1. Requirements for financial intermediaries' professional activities,
2. Due diligence and reporting obligations of traders, and
3. SRO's supervision of financial intermediaries.

FINMA Ordinance

- *Anti-Money Laundering Ordinance*¹³⁰

The *FINMA Anti-Money Laundering Ordinance (AMLO-FINMA)*, June 3, 2015) is based on the *AMLA*. It explains and provides benchmarks for practices that the SROs of regulated financial intermediaries should follow in fighting money laundering and terrorist financing, with *Article 17* of the *AMLA* providing a minimum standard.

¹²⁸ Federal Council, Federal Act on Combating Money Laundering and Terrorist Financing (Anti-Money Laundering Act, AMLA), *Ibid.* Revisions to AMLA are expected in 2022. Also, see Corine Nobs, Revisions to the Swiss Anti-Money Laundering Act Expected in 2022, IFLR, <https://www.iflr.com/article/b1vly6trc51qh0/revisions-to-the-swiss-anti-money-launde-ring-act-expected-in-2022> (Accessed on August 3, 2022).

¹²⁹ Der Bundesrat, Verordnung über die Bekämpfung der Geldwäscherei und der Terrorismusfinanzierung (Geldwäschereiverordnung, GwV), November 11, 2015, <https://www.fedlex.admin.ch/eli/cc/2015/791/de> (Accessed on August 3, 2022).

¹³⁰ Der Bundesrat, Verordnung der Eidgenössischen Finanzmarktaufsicht über die Bekämpfung von Geldwäscherei und Terrorismusfinanzierung im Finanzsektor (Geldwäschereiverordnung-FINMA, GwV-FINMA), June 3, 2015, <https://www.fedlex.admin.ch/eli/cc/2015/390/de> (Accessed on August 3, 2022). An unofficial English translation of this Ordinance can be found at KPMG, Ordinance of the Swiss Financial Market Supervisory Authority on the Prevention of Money Laundering and the Financing of Terrorist Activities (FIMNA Anti-Money Laundering Ordinance, AMLO-FINMA, <https://assets.kpmg/content/dam/kpmg/ch/pdf/swiss-anti-money-laundering-ordinance-finma-en.pdf> (Accessed on June 10, 2022).

Legal Basis for Mortgage Bonds

Federal Act

- *Mortgage Bond Act*¹³¹ (Explained in the body of this chapter).

Federal Council Ordinance

- *Mortgage Bond Ordinance*¹³²

The *Mortgage Bond Ordinance* (Pfv, January 23, 1931) explains how the *Mortgage Bond Act* should be implemented.

Legal Basis for Auditing

FINMA Ordinance

- *Financial Market Auditing Ordinance*¹³³

The *Financial Market Auditing Ordinance* (FINMA-PV, November 5, 2014) is based on *Articles 4 and 55* of the *FINMASA*. It regulates the auditing of supervised financial institutions, particularly regarding the audit's content and conduct, the form of reporting, responsibilities of the supervised entities, and the audit firm's connection to the audit.

¹³¹ Der Bundesrat, Pfandbriefgesetz (PFG), Ibid.

¹³² Der Bundesrat, Pfandbriefverordnung (Pfv), https://www.fedlex.admin.ch/eli/cc/47/121_125_70/de (Accessed on August 3, 2022).

¹³³ Der Bundesrat, Finanzmarktprüfverordnung (FINMA-PV), November 5, 2014, <https://www.fedlex.admin.ch/eli/cc/2014/708/de> (Accessed on August 3, 2022). An unofficial English translation of this Ordinance can be found at KPMG, Financial Market Audit Ordinance (FINMA-AO), November 5, 2014, <https://assets.kpmg/content/dam/kpmg/ch/pdf/financial-market-audit-ordinance-en.pdf> (Accessed on August 3, 2022).

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.





6

Swiss Institutional Investors

Introduction

Financial intermediaries exist because they perform valuable services for savers and borrowers.¹ Savers use them for the efficient and effective ways they offer to invest and withdraw funds in different amounts. Borrowers use them for their lending flexibility, power to lower search costs, and access to broad and deep pools of funds. Generally speaking, financial intermediaries moderate the risk-to-reward tradeoff by pooling funds, specializing in risk evaluation (i.e., credit, liquidity, and market risks), and engaging in measured risk-taking activities.

The similarities among financial institutions, such as banks, insurance companies, and mutual funds, are strong. To be sure, part of this similarity is legal because most financial institutions need licenses to operate. Nevertheless, far beyond this legal commonality are economic resemblances grounded in human resource competencies, fund transfer goals, and an ability to engage in risk and maturity transformation. It is for these reasons that competition in the financial markets has intensified.

This chapter focuses on Switzerland's institutional investors. These organizations conduct investments using a pool of funds they obtained from a multitude of investors. Typical institutional investors are insurance companies and related financial intermediaries, such as pension funds and mutual funds. It is fair to say that historic lines of competition are blurring in the Swiss financial markets, and the nation's financial landscape is transitioning.

¹ We could be more general here and say borrowers/investors and lenders/savers.

Therefore, focusing solely on the narrowly defined insurance industry risks overlooking a landslide transformation in competition.

Investment Market Intermediaries

Figure 6.1 provides an overview of the ultimate suppliers of funds in the financial markets. In broad terms, funds flow from surplus units in the household, business, government, and foreign sectors to deficit units, such as consumers, businesses, governments, and foreign borrowers. Households supply funds by saving from annual incomes and reallocating existing portfolios. Businesses supply funds from non-operating assets fed (or drained) each year by retained earnings. Governments could supply funds if they ran surpluses, but few of them do, and, finally, foreigners are active suppliers of funds, which can flow internationally at the blink of an eye.

Households, businesses, governments, and foreigners are also active users of funds. The debt crises of 2010 and 2011 pointed to the unpleasant side effects of unrestrained debt accumulation in nations such as Greece, Ireland, Italy, Portugal, and Spain. Excessive deficits in Latin America and Russia are also well known. The Covid-19 assistance programs in many countries in 2020, also Switzerland, have led to another rise in government indebtedness.

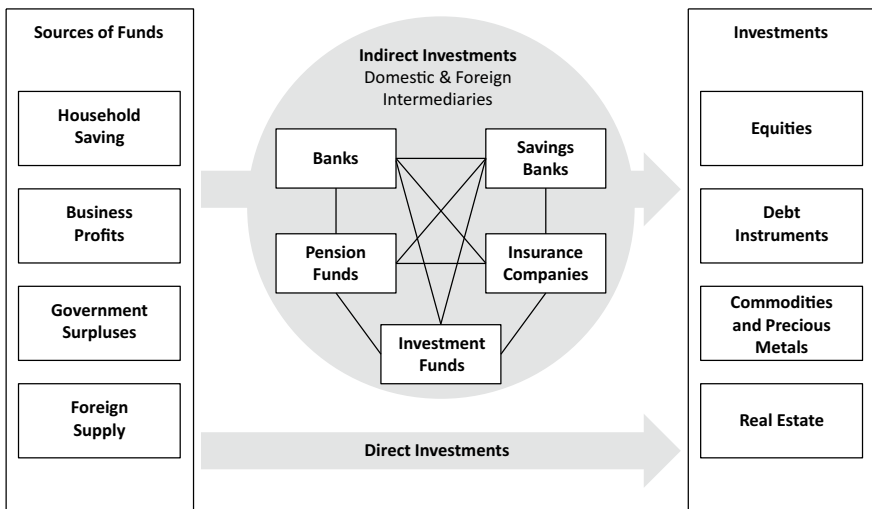


Fig. 6.1 Investment market intermediaries in Switzerland (Source Authors' representation)

Insurance Sector

Insurance companies occupy a special place in the financial markets among institutional investors. The key principle of insurance is risk pooling. Ideally, these risks are uncorrelated (i.e., diversified across broad pools of risks), and if they are, potential insurance claims can be financed with reserves, which are accumulated and invested to meet future needs. In addition to the reserves that insurance companies accumulate to meet actuarially predicted claims, extra (i.e., buffer) reserves are also needed because premiums, accumulations, and indemnifications are not perfectly timed. Black swan events with regard to risks or investments can (and do) occur, causing insurance companies with seemingly well-diversified portfolios and risks to come under considerable pressure. Finally, insurance companies accumulate investable funds by offering policies that encourage private savings. For these reasons, they have become significant investors in global capital markets.

Switzerland's insurance industry has a long history, dating back to the foundation of Mobiliar in 1826, followed by Rentenanstalt (today Swiss Life, 1857), Helvetia (1858), Bâloise (1863), Schweizer Rück (today Swiss Re, 1863), Zurich (1872), Winterthur Versicherung (1875), Pax (1876), and Vaudoise Assurances (1895).

As in most countries, Switzerland's insurance industry has both a private and a public sector. Public insurance prevails mainly in social security and protection against natural disasters. For social security, the objective is mainly to redistribute income and address problems connected to moral hazard and adverse selection.² Natural disaster insurance covers risks that are relatively large but have trifling probabilities of occurring. By contrast, private insurance tends to focus on the areas of life and health, as well as liability and damage (e.g., automobile insurance).

Pension Funds and Other Institutional Investors

The Swiss social security scheme consists of three pillars: The first pillar is the mandatory state-run pension and disability insurance, the second pillar comprises the occupational pension scheme, and the third pillar represents the individual and optional retirement savings plans. We will discuss the pillars in further detail later in this chapter.

² Both of these concepts result from asymmetric information. Thereby, adverse selection arises from quality uncertainty and, in an insurance context, refers to the accumulation of higher risks if the risk premia are fixed too low. In contrast, moral hazard originates from behavioral risk as it may occur with insured persons who act with less care once they get insurance coverage.

Among the related institutions of the second pillar, pension funds are, by far, the most important, basing their operations on the funding principle (i.e., benefits are met from policyholders' premiums paid during their working years, and from accumulations from invested reserves). Accordingly, pension funds have vast amounts of assets to manage.

The other components of the private insurance sector are health insurance, non-life insurance, and reinsurance. Except for health insurers, all the financial institutions connected to these services have relatively large pools of investable assets, potentially exposing these investors to substantial one-off risks (e.g., natural disasters).

Institutional Investing

Table 6.1 provides an overview of the leading players in the Swiss insurance market, as well as the financial intermediaries related to the nation's social security services and their investments, separated by asset classes. Columns 2, 3, and 4 of this matrix are the pillars of Switzerland's social security system. The first pillar (column 2) is the state social security pension scheme, which has six components. Its primary purpose is to guarantee a minimum level of benefits for retired individuals and those with physical or social disabilities. Because these insurance schemes are on a pay-as-you-go basis, the assets invested by their respective institutions are relatively small.

The investments of all these institutions mainly focus on government bonds, listed equities, and real estate, but their incentive structures are such that only marginal investments are made in non-listed equities and venture capital opportunities. Hence, although social security institutions and insurance companies are enormous collectors of capital, their financial resources barely flow into the financing of start-ups. The impact of investment policies on economic growth has only recently gained attention in the respective political debates.

Table 6.1 also provides a convenient outline for the remaining sections of this chapter, which starts with the three-pillar system, moves to the Swiss insurance market, and, finally, provides an overview of the nation's collective investment schemes.

Swiss Social Security: The Three Pillars

The Swiss social security system builds on three highly interdependent financing pillars:

Table 6.1 Summary matrix: Swiss financial security system and financial intermediaries

	Swiss Social Security/Insurance System and Financial Intermediaries																										
	Social Security (Ageing, Death, Disability)						Insurance					CCI															
	First Pillar: State Social Security Pension Scheme			Second Pillar: Occupational Pension Scheme			Third Pillar: Individual saving		Life, Non-Life and Reinsurance																		
	FZ (Family Allowances)	AHV / OASI (Old Age and Survivors' Insurance)	IV / DI (Disability Insurance)	ALV (Unemployment Insurance)	EL (Supplementary Benefits)	EO (Loss of Earnings)	Total	Pension Funds	Vested Benefit Accounts	Vested Benefit Policies	Substitute Occupational Benefit Institution		LOB (Law on Occupational Benefit) Guarantee Fund	Accident Insurance	Thereof SUVA (Swiss National Accident Insurance)	Military Insurance	Total	Tied Pension Accounts (Pillar 3a)	Tied Pension Policies (Pillar 3a)	Unrestricted retirement custody account (Pillar 3b)	Total	Health Insurance (Swiss Insurance Contracts Act)	Health Insurance (Swiss Federal Law on Health Insurance)	Life Insurance	Non-Life Insurance	Reinsurance	Total
Total Investments	2,895	47,158	-10,284	1,900	1,351	43,020	1062,842				20,800	1,397	65,839	59,760	1,210,638	135,222	94,478	229,700	2,485	17,476	284,998	123,627	96,624	525,210	1,203,000		
Thereof Collective capital investments							728,733				0	26		0	728,733							18,131	6,305	22,464	46,900	0	
Thereof Cash & Cash Equivalents							47,701				10,400			1,230	59,357							5,602	11,133	5,001	21,736	36,600	
Thereof Marketable securities							664,480			7,739		1,130		30,167	689,619							164,504	43,690	39,505	247,699	729,219	
Thereof Other Financial Assets							87,806			69	0		11,909	99,784								30,709	18,776	27,511	76,996	1,75,178	
Thereof Real Estate							216,359			1,287	241		8,625	226,512								40,711	6,268	85	47,064	82,572	

Note CCI: The right-most column labeled "Swiss collective capital investments KAG," consists mainly of mutual funds. DI: Negative values represent liabilities. First Pillar: Only total investment values are available. Some of the relatively high cash positions in the second pillar are due to vested benefit accounts.

Table 6.1 (continued)

Source Authors' calculations based on information from: Bundesamt für Sozialversicherungen, *Schweizerische Sozialversicherungsstatistik 2021*, <https://www.bsv.admin.ch/bsv/de/home/sozialversicherungen/ueberblick/grsv/statistik.html> [Accessed on July 5, 2022]; Bundesamt für Sozialversicherungen, *Finanzielle Lage der beruflichen und der gebundenen Vorsorge [Säule 3a]*, <https://www.bsv.admin.ch/bsv/de/home/sozialversicherungen/bv/finanzen.html> [Accessed on July 5, 2022]; Bundesamt für Statistik, *Pensionskassenstatistik 2020*, <https://www.bfs.admin.ch/bfs/de/home/statistiken/soziale-sicherheit/berufliche-vorsorge/einrichtungen-versicherte.assetdetail.21444171.html> [Accessed on July 5, 2022]; Bundesamt für Gesundheit, <https://www.bag.admin.ch/bag/de/home/versicherungen/krankenversicherung/krankenversicherung-versicherer-aufsicht/reporting/betriebsrechnungenundbilanzen.html> [Accessed on July 5, 2022]; Schweizerische Nationalbank: *Vierteljährliche Bankenstatistik*, <https://data.snb.ch/de/topics/finma/cube/capcollch> [Accessed on July 5, 2022]; FINMA: *Versicherer Reports*, https://www.finma.ch/~media/finma/dokumente/dokumentencenter/myfinma/finma-publikationen/versicherungsbericht/e-tabellen/2020/finma_versicherer-report_bj2020_02_bilanz-und-erfolgsrechnung.xlsx?sc_lang=de&hash=C46A539B1062639FEF97D7B2595C08AF, https://www.finma.ch/~media/finma/dokumente/dokumentencenter/myfinma/finma-publikationen/versicherungsbericht/e-tabellen/2020/finma_versicherer-report_bj2020_05_bilanz-und-erfolgsrechnung.xlsx?sc_lang=de&hash=7C2F0478F614D59CB1B2225EB463153B [Accessed on July 5, 2022]; SUVA: *Geschäftsbericht 2021*, <https://www.suva.ch/de-ch/ueber-uns/die-suva/geschaeftsbericht#state=%5Banchor-FFEE45E2-A29B-4597-99D5-4B9CD009A81F%5D> [Accessed on November 3, 2022]; Stiftung Auffangeinrichtung BVG, *Jahresbericht 2021*, <https://doc.aeis.ch/docs/pdfs/5825.pdf> [Accessed on July 6, 2022]

1. The state-run, basic benefit plan is extended to all residents.³
2. The mandatory occupation pension scheme.
3. Private savings (see Fig. 6.2).

Before the introduction of these types of compulsory savings, corporations directly used the funds for productive investments. Since then, to channel savings from these three retirement-financing sources to investment assets, a labyrinth of financial intermediaries has evolved in Switzerland. For large companies with significant pension assets, in-house pension management is possible, but pooling arrangements must be made for most companies. At the end of 2020, there were 4.4 million (2010: 3.7 million) members of 1,434 (2010: 2,265) Swiss pension funds.⁴ Most of these pension funds relied on the financial skills of investment fund managers, collective or pooled

³ The two federal social security schemes—Alters- und Hinterlassenenversicherung, AHV (OASI, old age and survivors' insurance) and Invalidenversicherung, IV (DI, disability insurance)—are administered separately but paid together via automatic payroll deductions. They are usually referred to jointly as AHV/IV and were constituted in 1946 and 1960, respectively.

⁴ Bundesamt für Statistik, *Pensionskassenstatistik 2020*, <https://www.bfs.admin.ch/bfs/de/home/statistiken/soziale-sicherheit/berufliche-vorsorge.html> (Accessed on June 27, 2022).

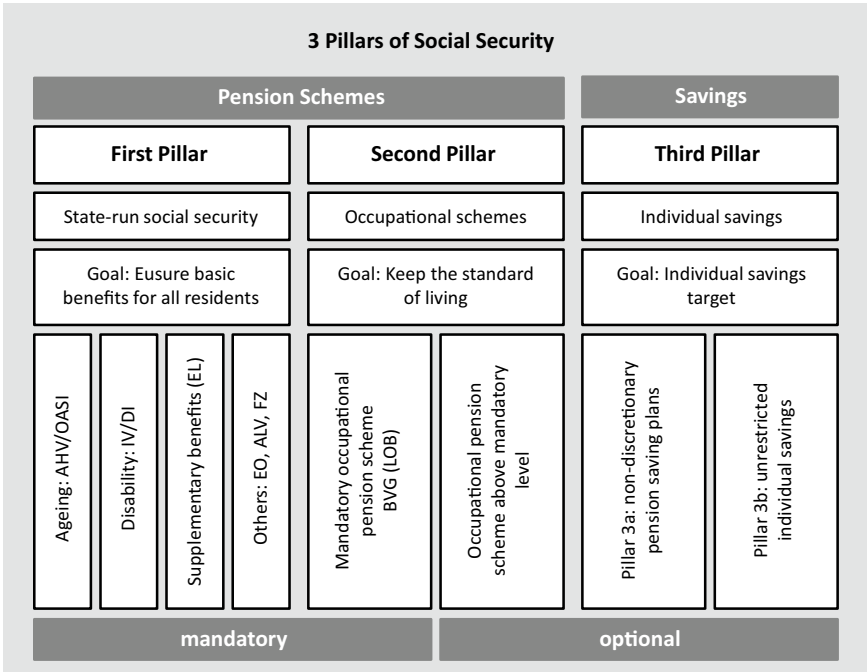


Fig. 6.2 Three-Pillar Concept of Social Security in Switzerland (Note EL = Supplementary benefits that cover the minimum costs of living where OASI and DI are not sufficient; AHV = Old Age and Survivors Insurance (OASI); IV = Disability Insurance (DI); EO = Loss of earnings insurance; ALV = Unemployment insurance; FZ = Family allowances; BVG = Law on Occupational Benefit (LOB); ZGB = Swiss Civil Code; OR = Swiss Code of Obligations. Source Authors' representation)

foundations, and Swiss life insurance companies to manage their retirement savings.

The First Pillar: Mandatory State-Run Pension and Disability Insurance

The Swiss social security scheme (OASI/DI) guarantees a minimum level of benefits to pensioners and is the first line of defense against poverty or undue social hardship. Minimum compensation is fixed by the government and is not based on either salary levels prior to retirement or years of contribution, but, for every year of missed contributions, a reduction in the

maximum insurance proceeds of about 2.3% is applied.⁵ Furthermore, above the minimum level, benefits are adjusted by pre-retirement income, but they are capped far below levels sufficient for all but the lowest income earners to maintain their standards of living. Hence, the system is highly redistributive, funneling contributions from high to low-income earners. For higher-income earners, the contribution has the character of a tax. In addition to OASI/DI, occupational pensions and private savings play an essential role in making the difference in the Swiss retirement equation. Still, revenues from these sources are taxed at progressive rates that make them redistributive, as well.

In an ideal world, OASI/DI's current benefits would be financed by current contributions with zero annual surpluses or deficits. In practice, the timing and flow of both contributions and payments are not exactly matched, creating an investment pool that has needed administering (see Fig. 6.3). The surpluses have created three equalization funds (i.e., one each for OASI, DI, and EO),⁶ which are managed by a common administrative council.⁷ It is responsible for investment, liquidity management, and financial and annual reporting. Capital investing takes place according to safety, profitability, and liquidity requirements.

During the post-World War II period until 2021, the average return on funds invested by the former Swiss Central Compensation Fund was slightly above four percent per annum.⁸ This low rate of return was due largely to restrictions placed on the range of allowable investments due to high liquidity requirements. As a result, the return was insufficient to finance benefit liabilities, but the deficit (until 1985) was filled by surpluses that arose from Swiss workers changing jobs. Before 1985, pension-vesting rules decreased workers' benefits when they changed employment. Since 1985, the pension-vesting rules have been modified for the benefit of Swiss workers and increased labor mobility.⁹

⁵ The obligation to contribute starts at 17 years of age for the active (working) population and 20 for the inactive (non-working) population, and it typically ends at 64 for women and 65 for men, see Bundesgesetz über die Alters- und Hinterlassenenversicherung, <https://www.bfs.admin.ch/bfs/de/home/statistiken/soziale-sicherheit/berufliche-vorsorge.html>, Art. 3 para. 2a and Art. 21 (Accessed on July 2, 2022).

⁶ EO stands for Erwerbsersatz-Ordnung (compensation for military servants and maternity leave).

⁷ The capital of OASI, DI, and EO is administered together, by "compenswiss", see Social Security Funds Act (SR 830.2), <https://www.fedlex.admin.ch/eli/cc/2017/820/en>, (Accessed on June 30, 2022), and Compenswiss, <https://www.compenswiss.ch/> (Accessed on June 30, 2022).

⁸ In 2016-2021, it was 4.5%, on average.

⁹ Since January 1, 1995, Swiss pensions have become fully portable (i.e., transferrable) without financial loss. See Freizügigkeitgesetz (SR 831.42), https://www.fedlex.admin.ch/eli/cc/1994/2386_2386_2386/de (Accessed on July 24, 2022).

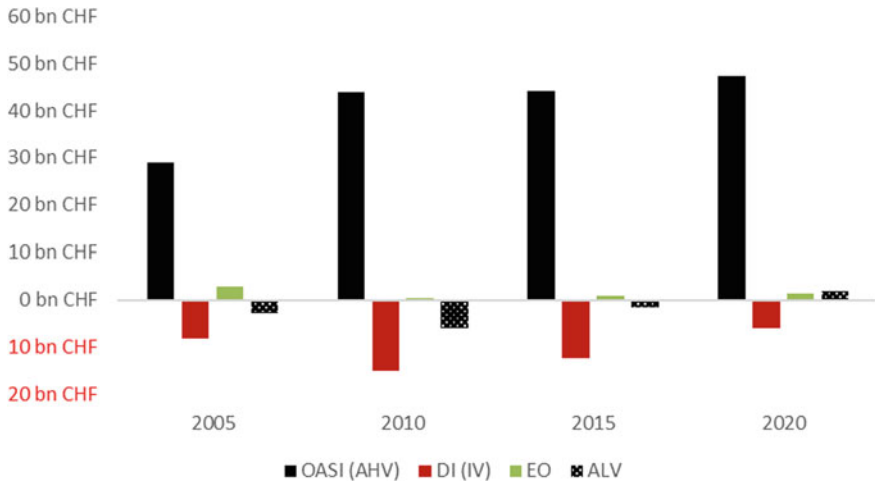


Fig. 6.3 Net Assets of OASI, DI, and EO: 2005–2020 (Billions of Swiss Francs) (Source Authors' calculations based on data from Bundesamt für Sozialversicherungen, *Schweizerische Sozialversicherungsstatistik 2021*, <https://www.bsv.admin.ch/bsv/de/home/sozialversicherungen/ueberblick/grsv/statistik.html>; *Schweizerische Sozialversicherungsstatistik 2022*, [Accessed on October 3, 2022])

In 2020, OASI had a surplus capital position totaling CHF 47.2 billion, and DI was in debt by approximately CHF 5.8 billion (see Fig. 6.3). Although the OASI capital stock was relatively stable over the past decade (2010: 44.2 billion), and DI reduced its indebtedness (2010: –14.9 billion), most forecasts predict declining surpluses and significant deficits. The rate at which current surpluses decline will depend on factors such as increases in benefits, real wages growth, inflation rates, returns on invested capital, and the net size of the workforce. Immigration levels, female participation rates, longevity, fertility rates, and average retirement age will also play significant roles.

The Second Pillar: Occupational Pensions

In 1985, the Swiss Parliament made occupational pension plans mandatory for virtually all Swiss businesses, based on the *Law on Occupational Benefit (LOB)*.¹⁰ LOB pension programs are financed by direct payroll deductions

¹⁰ Federal Law on Occupational Benefit for Old Age, Survivors and Invalidity (LOB) (Bundesgesetz über die berufliche Alters-, Hinterlassenen- und Invalidenvorsorge, BVG, SR 831.40), https://www.fedlex.admin.ch/eli/cc/1983/797_797_797/de (Accessed on July 25, 2022).

and contributions from employers. In its early years, there was a predominance of defined-benefit schemes. Workers received a share of their income based on a sliding scale, with low-income earners receiving much larger percentages of their incomes (up to 90%) than high-income earners (as low as 25%). In recent years, there has been a strong trend towards defined contribution plans that base employees' payments on their contributions.¹¹ Unlike the government plan (i.e., OASI/DI), funds are collected by these pension funds, and assets that are not distributed immediately are invested and accumulate.

Between 2005 and 2019, the assets of occupational pension funds grew at a compound annual rate of 4.3%, reaching CHF 1021 billion (see Fig. 6.4).¹² In the decade between 2010 and 2019, the share of real estate has increased more than the share of bonds. In 2019, bonds accounted for 30%, real estate for 20%, shares for 30%, alternative assets for 9%, liquid assets and short-term investments for 5%, mortgages for 2%, and other investments for 4% of the total assets. Collective investments managed 67.2% of these assets (see Fig. 6.5).¹³ Like insurance companies, this portfolio allocation provides visual evidence that pension funds' incentives were aligned to preserve capital rather than venture into riskier activities that contribute the most to growing economies.

Swiss pension funds have significantly increased their equity allocations during the past 30 years, from 9.8% in 1992 to 27% in 2010 and 30% in 2019. However, they are still considerably below the 50% limit. The superior return on Swiss equities has been a significant stimulus for this change. Professional and nonprofessional investors have a growing understanding that marginal differences in asset performance are important. Studies have shown that, in the long term, Swiss equity portfolios have outperformed debt portfolios. For instance, between 1995 and 2010, the annual return on Swiss equities (6.92%) was above the return on Swiss domestic bonds (3.96%). Between 1995 and 2021, the difference was even more prominent, with an average return of 8.19% on Swiss equities, compared to just 2.93% on Swiss bonds.¹⁴ Small yearly performance differences accumulate over time to significant performance differences due to the math of compound interest.

¹¹ By the end of 2020, 96.4% or 1,383 of all 1,434 pension funds applied a defined contribution scheme, while the remaining pension funds either adopt a defined benefit plan or a mix of both. See Bundesamt für Statistik, Vorsorgeeinrichtungen und aktive Versicherte nach Beitrags- oder Leistungsprimat, <https://www.bfs.admin.ch/bfs/de/home/statistiken/soziale-sicherheit/berufliche-vorsorge.assetdetail.21304799.html> (Accessed on July 24, 2022).

¹² Schweizerische Sozialversicherungsstatistik 2021, p. 76, <https://www.bsv.admin.ch/bsv/de/home/sozialversicherungen/ueberblick/grsv/statistik.html> (Accessed on June 27, 2022).

¹³ Ibidem.

¹⁴ The calculation of returns for Swiss equities and Swiss bonds is based on data from Pictet Wealth Management: *Performance Update for Swiss Shares and Bonds, 1926–2021*, February 21, 2022,

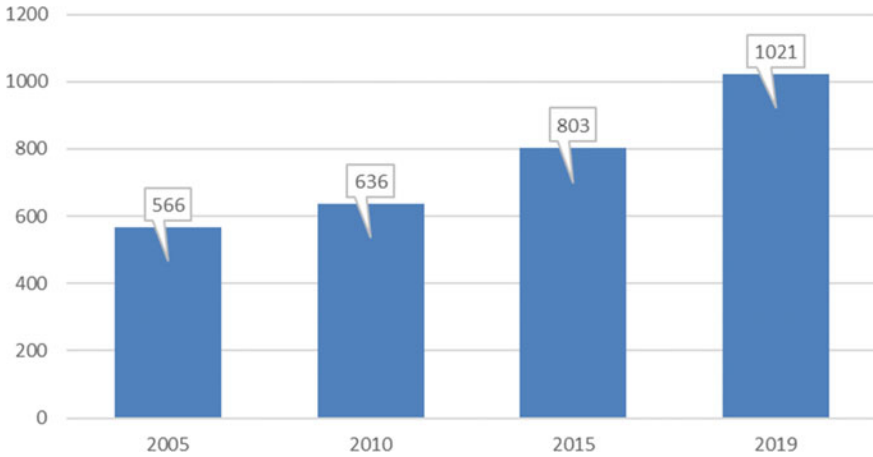


Fig. 6.4 Assets of occupational pension funds (in CHF billion) (Source Bundesamt für Sozialversicherungen, *Schweizerische Sozialversicherungsstatistik 2021*, p. 67, <https://www.bsv.admin.ch/bsv/de/home/sozialversicherungen/ueberblick/grsv/statistik.html> [Accessed on October 3, 2022])

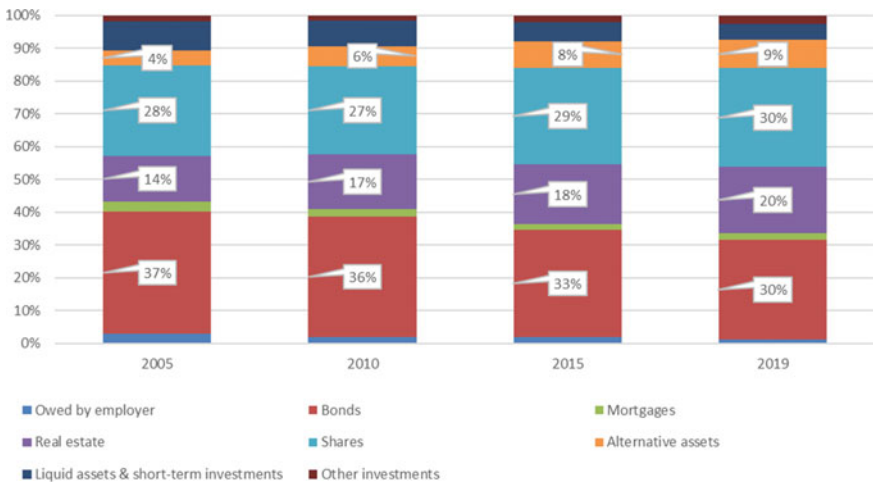


Fig. 6.5 Composition of occupational pension assets: 2005–2019 (in %) (Source Bundesamt für Sozialversicherungen, *Schweizerische Sozialversicherungsstatistik 2021*, p. 67, <https://www.bsv.admin.ch/bsv/de/home/sozialversicherungen/ueberblick/grsv/statistik.html> [Accessed on October 3, 2022])

<https://www.group.pictet/media-relations/historical-performance-shares-and-bonds-switzerland> (Accessed on March 16, 2022).

As a result, there has been a discernible movement toward equity investments and international diversification during the past 30 years. Moreover, some legal restrictions on equity investments ceased to apply. For instance, since January 1993, Swiss investment rules governing pension funds have permitted them to hold up to 50% of their portfolio in equities. Furthermore, a maximum of 30% of the entire portfolio may be invested in unhedged foreign currencies.¹⁵

Size of OASI and LOB Assets

Figure 6.6 summarizes the investment assets of Switzerland's social security system and private occupational pension plans from 2010 to 2020. The healthy net surpluses during this period are deceiving and mask a looming problem of the state-run old age and survivors' insurance scheme. The problem is that its capital and expected future contributions from the working population are unlikely to cover future retirement payments. These financing difficulties are well known and will continue to be the source of wide-ranging policy debates.

The Third Pillar: Individual Savings

In contrast to Switzerland's second pillar, which is mandatory for employees, the third pillar is entirely optional. It consists of supplementary individual savings, some of which enjoy various tax privileges. The tax-privileged plans are called "3a" solutions and come with a capital lockup. These savings plans are often connected to insurance coverage, such as life insurance policies, which are listed and described later in this chapter. On the other hand, "3b" saving refers to unrestricted individual saving.

¹⁵ The investment rules are set by the ordinance on occupational pensions, in short "BVV2" (SR 831.441.1), in particular Article 55. Between 1993 and 2008, a maximum of 30% could be invested in Swiss stocks and a maximum of 25% in shares of foreign corporations, but the global limit for both types of investments together was 50%. Furthermore, the maximum quota for investment in a single firm was 10%. Since the January 2009 revision, there has been a single global limit of 50% for shares and a new limit for single investments of 5% of a portfolio's value.

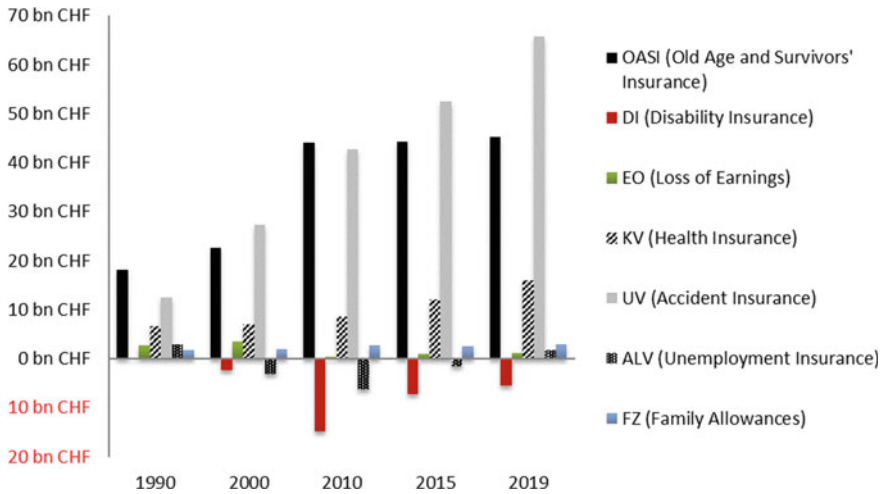


Fig. 6.6 Total capital of Swiss state-run pensions (Source Authors' calculations based on data from: Bundesamt für Sozialversicherungen, *Schweizerische Sozialversicherungsstatistik 2021*, p. 28 <https://www.bsv.admin.ch/bsv/de/home/sozialversicherungen/ueberblick/grsv/statistik.html> [Accessed on July 8, 2022])

Swiss Insurance Companies

Apart from pension funds, private insurance companies are the most prominent collectors of financial resources in the Swiss capital markets. In 2020, the capital investments of private insurance institutions amounted to CHF 712.6 billion.¹⁶ Even though Switzerland is a small part of the world insurance market, comprising just over 1%, insurance plays a vital role in the Swiss economy relative to most developed countries: Among all nations in 2020, Switzerland ranked fourth in terms of insurance per capita and fourth, behind Luxembourg, Denmark, and United Kingdom, in the proportion of its GDP devoted to insurance (Table 6.2).

As Tables 6.3 and 6.4 show, the importance of Swiss insurance companies depends on the market segment. In the life insurance business, they no longer ranked among the top 12 in 2022, but, despite the relatively small size of their domestic market, Swiss insurance companies were among the world leaders in the nonlife market, with Zurich Insurance ranking sixth behind U.S. and German competitors. In contrast to the typical Swiss multinational

¹⁶ Schweizerischer Versicherungsverband, *Prämienvolumen und Kennzahlen*, <https://www.svv.ch/de/der-svv/svv-publikationen/zahlen-und-fakten/zahlen-und-fakten/praemienvolumen-und-kennzahlen> (Accessed on June 26, 2022). Investments conducted by pension funds are not included in this number.

Table 6.2 Insurance: International comparisons of premiums per capita: 2020

Rank	Country	Premium per capita (\$)	Premium volume (Mio. \$)	Premium in % of GDP (%)	Share of world market (%)
1	Luxembourg	36,152	24,174	30.9	0.50
2	Ireland	8,901	45,005	10.4	0.90
3	Denmark	6,912	40,999	11.3	0.80
4	Switzerland	6,646	69,040	7.6	1.30
5	Netherlands	5,035	86,997	9.6	n.a.
6	Sweden	4,830	48,704	9.3	n.a.
7	United Kingdom	4,591	380,960	11.4	7.30
8	France	4,062	302,729	10.1	5.80
9	Japan	2,890	385,035	7.1	3.80
10	Finland	835	4611	1.7	0.10

Source OECD (2022), *Insurance spending, Gross insurance premiums, Gross direct insurance premiums, National insurance market share*, <https://data.oecd.org/insurance/gross-direct-insurance-premiums.htm> [Accessed on July 4, 2021]

Table 6.3 Largest life insurance companies in the world 2022 (Ranked by market capitalization)

Rank	Company	Country	Market value (billion USD)
1	AIA	Hong Kong	98.752
2	Ping An Insurance	China	95.627
3	China Life Insurance	China	87.647
4	Chubb	USA	87.011
5	Allianz	Germany	72.928
6	AXA	France	59.451
7	Metlife	USA	57.560
8	Manulife Financial	Canada	41.673
9	Aflac	USA	41.019
10	Prudential	UK	25.644

Source Marketscreener, <https://www.marketscreener.com/stock-exchange/shares/> [Accessed on November 4, 2022]

company, which conducts more than 95% of its business abroad, Swiss insurance companies led a large part (but not the majority) of their business in Switzerland.

Swiss Insurance Market Structure

The Swiss insurance industry has three major segments:

Table 6.4 Largest nonlife insurance companies and reinsurers in the world 2022 (Ranked by market capitalization)

Rank	Company	Country	Market value (billion USD)
1	Berkshire Hathaway	USA	206.671
2	Chubb Limited	USA	84.315
3	Marsh & McLennan Companies	USA	78.648
4	Allianz SE	Germany	76.636
5	Progressive corporation	USA	69.296
6	Zurich Insurance	Switzerland	64.680
7	AON Plc	USA	58.176
8	American International Group	USA	41.210
9	The Travelers Companies	USA	40.773
10	Tokio Marine Holdings	Japan	39.103
11	The Allstate Corporation	USA	35.940
12	Arthur J. Gallagher & Co.	USA	34.583

Source Marketscreener, <https://www.marketscreener.com/stock-exchange/shares/> [Accessed on July 4, 2022]

1. Life.
2. Non-life (i.e., property and casualty, as well as supplementary health insurance).
3. Reinsurance.

Although competition in the life and non-life segments used to be nationally or regionally oriented, international competition has increased during the past two decades. The same has been valid in the reinsurance industry but on a different scale. Traditionally, reinsurance's scope was international to enjoy economies of scale from having large customers, such as international insurance companies and corporations.¹⁷ In 2020, the Swiss insurance industry earned CHF 99.3 billion in domestic gross premiums, of which 25%, 29%, and 46% were for life, non-life, and reinsurance coverage, respectively (Table 6.5).

¹⁷ See Frances A. Katrisha and Nicos A. Scordis, *Economies of Scale in Services: A Study of Multi-national Insurers*, *Journal of International Business Studies* 29:2 (1998), 305–324; and Udo Klotzki, Alexander Bohnert, Nadine Gatzert, and Ulrike Vogelgesang, *Economies of Scale in European Life Insurance*, *Journal of Risk Finance* 19:2 (2018), 190–207.

Table 6.5 Premiums in the Swiss insurance market 2021

Type of insurance	Premiums (CHF millions) 2000	Premiums (CHF millions) 2010	Premiums (CHF millions) 2021	Swiss insurance market 2021 (%)
Life-insurance	31,472	30,128	23,111	23.5
Non-life	19,135	24,949	29,862	30.3
Reinsurance	21,893	27,931	45,559	46.2
Total	72,500	83,008	98,532	100

Source Schweizerischer Versicherungsverband, *Prämienvolumen und Kennzahlen*, <https://www.svv.ch/de/der-svv/svv-publikationen/zahlen-und-fakten/zahlen-und-fakten/praemienvolumen-und-kennzahlen> [Accessed on October 3, 2022]; FINMA, Bericht über den Versicherungsmarkt 2021, <https://www.finma.ch/de/-/media/finma/dokumente/dokumente/center/myfinma/finma-publikationen/versicherungsbericht/20220909-versicherungsmarkt-bericht-2021.pdf> [Accessed on October 3, 2022]. For 2000 and 2010: Schweizerischer Versicherungsverband, *Zahlen und Fakten* (earlier editions)

Since 2000, the premium income has increased overall by 36%. Thereby, premium income in the non-life segment has grown by 56%, whereas in life insurance, it has decreased by 26%. In reinsurance, it has more than doubled during the same period. Premium growth in the non-life insurance market experienced an increase of insured values, such as motor vehicles and assets insured against fire and natural hazards, rising healthcare costs, and rising accident insurance premia due to the growth of aggregate salaries. In contrast, life insurance premia have declined in the same period because of competition and because some insurance companies have withdrawn wholly or partly from the full insurance market that provided guarantees not only for the insurance-related risks but also for investment risks. Due to the low interest rates, it became increasingly challenging for life insurance companies to issue these guarantees. Without full insurance, however, clients face higher exposure to the ups and downs of the financial markets. This has led to a shift into other investment products. In the year 2021, part of the reduction was due to a highly stable labor market leading to fewer job changes.¹⁸

Tables 6.6, 6.7, and 6.8 show the premium volume for the top six companies of each market segment. Their size is highly variable. In 2021, the three largest life insurance companies (Swiss Life, Helvetia, and Basler) accounted for 65.5% of the Swiss market. The three largest non-life insurance companies (AXA, Mobiliar, and Zurich Insurance) comprised 30.5% of their segment. And in the reinsurance sector, the three largest reinsurers (Schweizerische Rückversicherungs-Gesellschaft AG, New Reinsurance

¹⁸ Schweizerischer Versicherungsverband (SVV), <https://www.svv.ch/en/robust-premium-volumes-private-insurers-2021> (Accessed on August 27, 2022).

Company Ltd., and Swiss Re Nexus Reinsurance Gesellschaft AG) accounted for 73.9% of their market.

For more than 30 years, the Swiss insurance industry has been in a state of accelerated transition. The business environment was characterized by high government regulation, cartel-like price agreements, lack of efficiency-enhancing innovation, and very little foreign competition. The transition began in 1988 when the Swiss government initiated a cartel inquiry into

Table 6.6 The largest life insurance companies in Switzerland, 2021 vs. 2010 (Ranked by gross premium income)

Rank 2021	Company (Life insurance)	Gross premium income (CHF million) 2010	Gross premium income (CHF million) 2021
1	Swiss Life	7,516	9,417
2	Helvetia	2,822	2,885
3	Basler	2,824	2,864
4	AXA	8,059	1,745
5	Allianz	2,074	1,700
6	Zürich	1,718	1,336
7	Others	3,180	3,181

Source For 2021: Schweizerischer Versicherungsverband, *Gesamtsicht Lebensversicherung*, <https://www.svv.ch/de/branche/lebensversicherung/gesamtsicht-lebensversicherung> [Accessed on October 3, 2022]; FINMA, *Bericht über den Versicherungsmarkt 2021*, <https://www.finma.ch/de/~media/finma/dokumente/dokumentencenter/myfinma/finma-publikationen/versicherungsbericht/20220909-versicherungsmarktbericht-2021.pdf> [Accessed on October 3, 2022]. For 2010: Schweizerischer Versicherungsverband, *Marktanteile Lebensversicherung 2000–2010*

Table 6.7 The largest non-life insurance companies in Switzerland: 2021 vs. 2010 (Ranked by gross premium income)

Rank 2021	Company (Non-life insurance)	Gross premium income (CHF million) 2010	Gross premium income (CHF million) 2021
1	AXA	3,157	3,530
2	Mobiliar	2,157	3,195
3	Zürich	2,668	2,945
4	Allianz	1,738	1,909
5	Helsana	1,488	1,892
6	Others	5,032	16,401

Source For 2021: Schweizerischer Versicherungsverband, *Gesamtsicht Schadenversicherung*, <https://www.svv.ch/de/branche/schadenversicherung/gesamtsicht-schadenversicherung> [Accessed on October 3, 2022]; FINMA, *Bericht über den Versicherungsmarkt 2021*, <https://www.finma.ch/de/~media/finma/dokumente/dokumentencenter/myfinma/finma-publikationen/versicherungsbericht/20220909-versicherungsmarktbericht-2021.pdf> [Accessed on October 3, 2022]. For 2010: Schweizerischer Versicherungsverband, *Marktanteile Schadenversicherung 2000–2010*

Table 6.8 The largest Swiss reinsurance companies: 2021 (Ranked by gross premium income)

Rank 2021	Company (Reinsurance)	Gross premium income (CHF million) 2021
1	Schweizerische Rückversicherungs-Gesellschaft AG	23,048
2	New Reinsurance Company Ltd.	2,166
3	Swiss Re Nexus Reinsurance Gesellschaft AG	1,980
4	MS Amlin AG	1,559
5	Validus Reinsurance (Switzerland) Ltd	1,425
6	UNIQA Re AG	1,410
7	Others	5,258

Source Schweizerischer Versicherungsverband, *Gesamtsicht Rückversicherung*, <https://www.svv.ch/de/branche/rueckversicherung/gesamtsicht-rueckversicherung> [Accessed on October 3, 2022]

the non-life insurance industry. This effort led to the gradual liberalization of Switzerland's insurance industry, increasing competition and concentration. Another critical effect of liberalization was a substantial increase in foreign insurance companies' market shares. After membership in the European Economic Area (EEA)¹⁹ was rejected by a popular referendum in 1992, the Swiss government enacted legislation that forced Swiss insurance companies to compete as if the nation had joined the European Union (EU), and, after that, the EU has moved quickly to deregulate all segments of its insurance industry.²⁰

Deregulation has forced Swiss insurance companies to become more sensitive to costs by rationalizing their sales organizations, pruning bad policies, introducing new products, and using better methods to measure and transfer risk. The shift came when Swiss insurance companies were already under

¹⁹ The European Economic Area (EEA), which allows several non-EU countries to be part of EU's internal market.

²⁰ After the adoption of the first European Community (EC) directive on non-life insurance in 1973 (Richtlinie 73/2397EWG: Schadensversicherung), Switzerland and the EC negotiated a freedom of establishment agreement in 1990 that took effect in January 1993 (Abkommen zwischen der Europäischen Wirtschaftsgemeinschaft und der Schweizerischen Eidgenossenschaft betreffend die Direktversicherung mit Ausnahme der Lebensversicherung). Today, Swiss companies can compete with EU companies, and they can offer services in Switzerland so long as they meet Swiss capital requirements. There has been no such agreement in the life insurance area, which means Swiss life insurance companies will not be able to take advantage of the EU's single license provisions. Rather, they will be required to satisfy the solvency requirements of each country in which they transact business. The 1989 Agreement on Non-Life Insurance with the EU was amended in 2018 following technical adjustments regarding solvency. See FINMA, <https://www.finma.ch/en/news/2018/07/20180718-mld-versicherungsabkommen-schweiz-eu/> (Accessed on June 26, 2022), and Fedlex, https://www.fedlex.admin.ch/eli/cc/1992/1894_1894_1894/de (Accessed on June 26, 2022).

considerable competitive pressure, which caused premium growth to stagnate and commissions to fall. Among the most aggressive new competitors have been foreign insurance companies and banks.

Since 1995, there has been great anticipation of intensified integration between banking and insurance (services) companies in Switzerland, but integration efforts (called the Allfinanz strategy) have stalled. Only recently, they have shown signs of revival. Some of the early bank takeovers of Swiss insurance companies, such as Credit Suisse Group's takeover of Winterthur insurance company (today part of AXA Winterthur), have already been unwound. Similarly, bank acquisitions of insurance companies, such as Zurich Insurance Company's purchase of the private bank Rüd Blass in 1994, were unsuccessful due to a lack of substantive lines of integration. In general, integration efforts have been frustrated by significant differences in underlying products and a lack of mutual understanding of the pertinent business models. Another major factor was the dissimilarity in regulators, but this obstacle has changed. Since January 2009, the banking and insurance regulators have been under the single roof of the Swiss Financial Market Supervisory Authority (FINMA). Between 2009 and 2022, there were no major acquisitions anymore in either direction. Still, banks and insurance companies embarked on manifold ways of partnering with each other and setting up common platforms and so-called ecosystems.

Level of Internationalization

Switzerland's insurance companies entered the international arena at a very early stage, forced mainly by the relatively small national market and the necessity to achieve sufficient levels of risk diversification. By contrast, fewer compelling reasons prompted foreign insurance companies to tap the Swiss market. Mild changes in this pattern began in the mid-1990s, and since then, the level of foreign participation in Switzerland has increased substantially. In 1992, there were only 24 insurance companies (all non-life) in Switzerland, with a market share of two percent.

Since then, the level of international participation has increased significantly. By 2001, 37 foreign insurance companies (35 of them non-life) had entered Switzerland, with a market share of 20%, and, at year-end 2010, the number had increased to 51. With 48 companies in 2021, there was almost the same number of foreign insurers active in Switzerland compared to ten years earlier. This surge in foreign competition has been primarily due to the liberalization of the Swiss domestic market (Table 6.9).

Table 6.9 Swiss insurance segments and international distribution 2021

Segments	Domestic & foreign insurance companies in Switzerland		
	Swiss	Foreign	Total
Life insurance	14	3	17
Non-life	70	48	118
Reinsurance	24	0	24
Reinsurance captives	24	0	24
Health insurance	10	0	10
Total	142	51	193

Source FINMA, *Bericht über den Versicherungsmarkt 2021*, p.4, <https://www.finma.ch/de/~media/finma/dokumente/dokumentencenter/myfinma/finma-publikationen/versicherungsbbericht/20220909-versicherungsmarktbericht-2021.pdf> [Accessed on October 3, 2022]

In contrast, foreign players have been largely absent from Switzerland's reinsurance market segment due largely to regulations regarding market access. This was a consequence of the limited supervision of Swiss reinsurance companies in the EU and of EU-based reinsurance companies in Switzerland. Since 2010, based on *Article 175* of the *Directive 2009/138/EC*, the EU has declared that supervision of Switzerland's reinsurance market complies with the EU *Reinsurance Directive*. In the following, foreign reinsurance companies relocated some of their operations to Switzerland.

The sources of premium payments and the number of jobs created reflect the international profile of Switzerland's insurance industry. Of the CHF 226.5 billion earned during 2021, CHF 171 billion (75.4%) was from foreign sources (see Table 6.10).

Table 6.10 Domestic and foreign premiums of Swiss insurance companies by source: 2010 and 2021 (Figures in billions of Swiss Francs)

Segments	Swiss		Foreign		Total	
	2010	2021	2010	2021	2010	2021
Life insurance	30.1	23.1	45.0	39.6	75.1	62.7
Non-life	24.9	29.9	37.2	78.3	62.1	108.2
Reinsurance*	1.5	2.5	29.8	53.1	31.3	55.6
Total	56.5	55.5	112.0	171.0	168.5	226.5
Percent	33.6	24.5	66.4	75.5	100.0	100.0

Source Schweizerischer Versicherungsverband, *Prämienvolumen und Kennzahlen*, <https://www.svv.ch/de/der-svv/svv-publikationen/zahlen-und-fakten/zahlen-und-fakten/praemienvolumen-und-kennzahlen> [Accessed on October 3, 2022]; FINMA, *Bericht über den Versicherungsmarkt 2021*, <https://www.finma.ch/de/~media/finma/dokumente/dokumentencenter/myfinma/finma-publikationen/versicherungsbbericht/20220909-versicherungsmarktbericht-2021.pdf> [Accessed on October 3, 2022]. For 2010: Schweizerischer Versicherungsverband, *Zahlen und Fakten 2012*

Swiss insurance companies have had some important foreign acquisitions during the past three decades. As early as 1994, the German insurance company Allianz bought from Swiss Re a majority share of Elvia, the fifth-largest Swiss direct insurer at the time, and a 31% share of Berner Insurance Group.²¹ In 1995, Allianz increased its share in Elvia to nearly 100% through a public offering,²² and, in 2001, the company's share in Berner Insurance Group and its affiliate, CAP (which offers legal protection insurance), increased to 97%. In this context, the company also changed its name to Allianz Suisse, which communicated the combination of Allianz's activities in the Swiss insurance market.

The French global insurance group, AXA, followed suit in 2006 by acquiring, for CHF 12.3 billion, 100% of the leading Swiss insurance company, Winterthur Group, a former affiliate of Credit Suisse Group. Through this acquisition, AXA significantly advanced its position in the Swiss non-life market, strengthened its leading position in Europe, and increased AXA's presence in high-growth markets in Central and Eastern Europe and Asia. As a national transaction, Helvetia acquired Nationale Suisse in 2014.

Competition with Banks

During the mid-1990s, banks and insurance companies increasingly became vigorous competitors, but they also formed numerous strategic alliances.²³ Given the similarity in some of their functions, the fight for financial turf and a web of operating alliances were logical consequences of this competitive environment. Both financial institutions issue liabilities (policies or deposits), invest the proceeds, compete in the labor markets for the same qualified investment managers, and vie for customers interested in managing their risk levels.

Despite competition in several fields, it is helpful to remember that banks' and insurance companies' business models are substantially different. While banks generate, finance, and service loans, insurance companies gradually build reserve assets based on client premiums plus the market returns on invested funds minus claims. Furthermore, banks engage in maturity transformation activities, making them inherently risky, which is not the case

²¹ In 1994, Berner Insurance Group was one of Switzerland's leading 10 insurers. Allianz already owned Allianz Continentale Allgemeine and Allianz Continentale Lebensversicherung in Switzerland.

²² Allianz also acquired Alba, an affiliate of Elvia, which was sold together with Phenix to Helvetia Insurance in 2010.

²³ Raimo Voutilainen, Comparing Alternative Structures of Financial Alliances, *The Geneva Papers* 30:2 (April 2005), 327–342.

for insurance companies. Although insurance companies face redemptions, penalties for early withdrawals significantly reduce these risks. Generally, banks are driven mainly by the asset side of their balance sheets, while insurance businesses tend to focus more on the liability side.

Insurance companies and banks are specialists at shifting risk from individual customers to a diversified pool of assets. However, insurance companies' debt instruments are contingent liabilities, and their investments mirror, as closely as possible, the term structure of their liabilities—which is relatively long-term for life insurance companies and short-term for property and casualty companies.

Banks commonly offer off-balance sheet contracts, such as forward exchange, forward interest, swap, and option transactions, to modify customers' and their own risk levels. In the competition between banks and insurance companies, Swiss banks have used their extensive branch networks and frequent contacts with potential insurance customers to make inroads into the life insurance segment of the industry.²⁴ It is only natural that these similarities would forge significant levels of integration between banking and insurance services, but, as previously mentioned, this Allfinanz or Bancassurance strategy has been challenging to implement and, therefore, less prolific than expected.

A common practical problem associated with combining a formerly independent bank with a previously independent insurance company has been the competition between existing distribution channels, which has hampered many potential synergies. Due to these problems, the market tends to favor affiliations, collaborations, and associations instead of integrating through acquisitions and mergers. In recent years, banks and insurance companies have partnered by setting up collaborative platforms and ecosystems focused on servicing clients' needs instead of product offerings. Hence, products and services are complementary in many ways, but institutionally, the insight has grown that there are good reasons to keep banks and insurance companies as separate institutions. In particular, the digitalization of financial services has contributed to this new era of Bancassurance.

Cooperative agreements as strategic initiatives have a long history in the Swiss market. In 1992, Swiss Bank Corporation (SBC, today UBS) and Zurich Insurance Group were among the first to start a joint venture to develop their life insurance businesses. In 1996, they extended their cross-selling efforts to a broader range of products. In addition to its life insurance

²⁴ Examples in Switzerland are the two big banks (UBS, Credit Suisse), most cantonal banks, and Raiffeisen. Similar inroads are made by banks in other nations, especially in France, the Netherlands, and Spain.

offerings, SBC subsequently offered its customers property, liability, and accident insurance via its affiliate, Zurich Insurance. Simultaneously, Zurich Insurance started selling its clients SBC's investments and products. In 2020, UBS and Zurich Insurance Group announced their launch of Bancassurance products for entrepreneurs and followed up in 2022 with a joint offering for leasing products.²⁵

In 1994, Credit Suisse Holding (today, Credit Suisse Group) and Swiss Re announced a new agreement to cooperate in ways that would expand Swiss Re's geographic range and product offerings. The agreement grew Swiss Re's activities in the financial reinsurance business,²⁶ created an investment fund to promote new insurance companies in Asia and gave Swiss Re 20% control over Credit Suisse Financial Products (CSFP), a London-based financial derivatives specialist. Participation in CSFP should help develop new financial derivatives for the reinsurance industry. The cooperation lasted until 2002 when Credit Suisse Group sold its shares.

In 1999, Helvetia Insurance signed a distribution cooperation agreement with Raiffeisen Group for its products, which also included capital participation in Raiffeisen Group. The parties renewed this agreement in 2009. In the context of this agreement, Raiffeisen had agreed to distribute the insurance products of Helvetia, while the deal also allowed Helvetia to offer Raiffeisen/Vontobel funds to its customers. In 2021, the cooperation ended, and Raiffeisen Group entered a new partnership with Mobiliar.

In the life insurance segment of the market, Credit Suisse and Zurich Life Insurance Company established a partnership in 2010.²⁷ Since October 2010, life insurance products from Zurich Life have been available to the bank's clients in Switzerland, which supplement the bank's existing range of products and services in the fields of pension provisions, retirement solutions, and risk coverage. Other examples of cooperative agreements between insurance companies and banks have been agreements between AXA Winterthur and Postfinance, as well as the affiliation between Bâloise Group and Bâloise Bank SoBa (the latter being a subsidiary of the Bâloise Group). A more recent example is the cooperation of Smile, an online insurance company

²⁵ See UBS, <https://www.ubs.com/global/de/media/display-page-ndp/de-20200205-zurich.html>; and <https://www.ubs.com/global/de/media/display-page-ndp/de-20220421-ubs-zurich-leasing.html> (Accessed on July 25, 2022).

²⁶ The financial reinsurance business focuses on smoothing insurance companies' financial returns over a multi-year horizon.

²⁷ See Zurich Insurance, *Credit Suisse und Zurich gehen Partnerschaft im Bereich Lebensversicherungen ein*, <https://www.zurich.ch/de/ueber-uns/medien/medienmitteilungen/2010/20100929-medienmitteilung> (Accessed on July 25, 2022).

and subsidiary of Helvetia, and the digital bank Neon, targeted at providing joint mobile Bancassurance solutions.

Asset Structure of Insurance Companies

Table 6.11 shows the investments and the security composition of Switzerland's life, non-life, and reinsurance companies. The assets of life insurance companies are mainly long-term and conservative, including bonds, mortgages, loans, shares, real estate, and liquid funds. The industry's investment yield of about 4.5 to 5.5% reflects this safety consciousness during the past 80 years. Average investment yields were only about 3.5% from 2010 to 2020 (Fig. 6.7). Non-life and reinsurance companies invest heavily in government securities and mortgage bonds.

Due to Swiss insurance companies' tight investment prescriptions, which favor domestic government bonds and other safe Swiss securities, foreign borrowers have not found the private Swiss insurance sector to be a significant source of funds. Switzerland's social security system, private pension funds, and the private insurance sector are the financiers of Swiss federal, cantonal, and municipal government deficits. This funding source is reflected in the very high proportion of assets invested in bonds, among which government bonds dominate, as shown in Fig. 6.8.

Regulation

There have been waves of deregulation in the Swiss insurance sector during the past 30 years, each designed, in its way, to increase competition. Still, there have also been undercurrents of increased regulations in areas such as customer protection and system stability. Today's foundation for Switzerland's insurance regulation is the 2004 law on the supervision of insurance companies,²⁸ which defines the responsibilities and basic requirements for licensure, risk management, reporting, brokerage, and default procedures of insurance companies.²⁹

²⁸ See Versicherungsaufsichtsgesetz (VAG, SR 961.01), <https://www.fedlex.admin.ch/eli/cc/2005/734/de> (Accessed on July 25, 2022).

²⁹ A supplementary agreement with the EU regulates the access of Swiss insurance companies to the EU markets, except for life insurance ("Abkommen zwischen der Schweizerischen Eidgenossenschaft und der Europäischen Wirtschaftsgemeinschaft betreffend die Direktversicherung mit Ausnahme der Lebensversicherung," SR 0.961.1).

Table 6.11 Investments of life, non-life, and reinsurance companies 2021 vs. 2010 (CHF billion)

	2020			2021			Total	Reinsurance	Non-life	Life	Total	Reinsurance	Non-life	Total
	Life	Non-life	Total	Reinsurance	Total	Life								
Bonds, notes & mortgage bonds	154.9	50.7	233.5	27.9	233.5	146.6	50.8	36.8	237.2					
Real estate	30.6	6.1	37.9	1.2	37.9	41.5	7.4	0.1	49					
Mortgages	24.2	4	28.9	0.7	28.9	33	5.2	0	38.3					
Time deposits & money market instruments	5.8	3.5	13.7	4.4	13.7	5.8	11.1	4.5	21.3					
Liquid funds	5.5	5.5	15.4	4.4	15.4									
Stocks & other securities	13.4	8.3	34.9	13.2	34.9	12.1	7.2	0.8	20					
Major shareholdings	4.9	32.8	61.8	24.1	61.8	6.2	43.3	27	76.5					
Alternative investments	13	3.9	19.9	3	19.9	na	na	na	na					
Funds-linked life insurance	16	0	16	0	16	24.1	0	0	24.2					
Promissory note bonds	10.4	6.4	17.3	0.5	17.3	8.9	9.6	3.8	22.4					
Other	2	7.2	11.3	2.1	11.3	29.6	24.4	28.2	82.1					
Total	280.7	128.4	490.6	81.5	490.6	313.4	154	101.6	571					

Source Schweizerischer Versicherungsverband, *Prämienvolumen und Kennzahlen*, <https://www.svv.ch/de/der-svv/svv-publikationen/zahlen-und-fakten/zahlen-und-fakten/praemienvolumen-und-kennzahlen> [Accessed on October 3, 2022]; FINMA, *Bericht über den Versicherungsmarkt 2021*, [Accessed on October 3, 2022]. For 2010: FINMA, *Versicherer-Report 2010*, <https://www.finma.ch/de/dokumentation/archiv/versicherer-report/2010/> (Accessed on October 3, 2022)

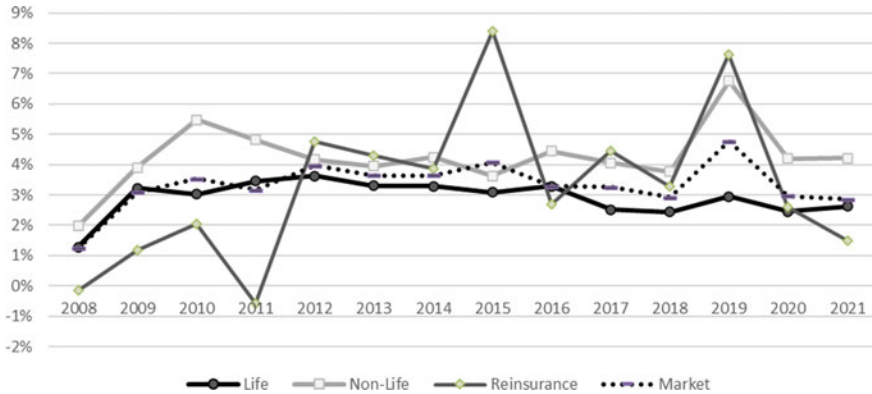


Fig. 6.7 Investment returns of life, non-life, and reinsurance companies 2008–2021 (Source FINMA, annual issues of *Bericht über den Versicherungsmarkt* [2008–2021], for 2021: <https://www.finma.ch/de/~media/finma/dokumente/dokumentcenter/myfinma/finma-publikationen/versicherungsbericht/20220909-versicherungsmarktbericht-2021.pdf> [Accessed on October 3, 2022])

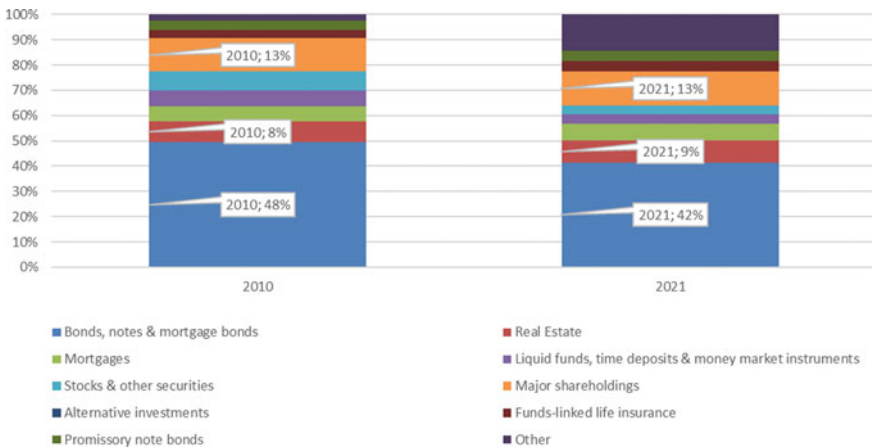


Fig. 6.8 Structure of Swiss insurance companies' investments: 2021 vs. 2010 (Note Major shareholdings denote long-term equity holdings in other companies. Source Schweizerischer Versicherungsverband, *Prämienvolumen und Kennzahlen*, <https://www.svv.ch/de/der-svv/svv-publikationen/zahlen-und-fakten-zahlen-und-fakten/praemienvolumen-und-kennzahlen> [Accessed on October 3, 2022]; FINMA, *Bericht über den Versicherungsmarkt 2021*, <https://www.finma.ch/de/~media/finma/dokumente/dokumentcenter/myfinma/finma-publikationen/versicherungsbericht/20220909-versicherungsmarktbericht-2021.pdf> [Accessed on October 3, 2022]. For 2010: FINMA, *Bericht über den Versicherungsmarkt 2010*, https://www.finma.ch/~media/finma/dokumente/dokumentcenter/myfinma/finma-publikationen/versicherungsbericht/versicherungsreport-2010-d.pdf?sc_lang=de [Accessed on October 3, 2022])

On a contractual level, the 1908 law on insurance contracts regulates the legal relationship between an insurance company and the insured.³⁰ In the field of social insurance, the law on retirement and disability insurance³¹ has defined, since 1946, the basis for Switzerland's first pillar of the social security system (see above), whereas its second pillar was founded on the 1982 law on occupational retirement.³² In addition to the laws mentioned earlier, there are insurance laws pertaining to particular risks, such as the 1981 *Law on Accident Insurance*³³ and the 1994 *Law on Health Care Insurance*.³⁴

Since the heavy portfolio losses suffered by Swiss insurance companies in the wake of the 2001 to 2002 stock market downturn, there have been continuous regulatory efforts to increase system stability. In the EU, these activities have focused on solvency. The first wave of EU regulation, called Solvency I, was enacted in 2002 and followed, in 2016, by Solvency II rules. Similarly, since January 2011, Swiss insurers have been obliged to apply the Swiss Solvency Test (SST) to their portfolios. SST grounds on three basic principles³⁵:

1. Positions should be valued at market prices and closely mirror current market conditions. Valuation models may be applied if market prices are unavailable. This principle starkly contrasts Solvency I requirements, which were based on historic costs.
2. Capital requirements should be risk-based and focused broadly on market, credit, and technical insurance risks.
3. Risk management should use the total balance sheet approach, which requires on-balance-sheet reporting of all relevant positions. This framework forces insurance companies to value all their contingent assets and liabilities (e.g., embedded options).

³⁰ See *Versicherungsvertragsgesetz (VVG, SR 221.229.1)*, https://www.fedlex.admin.ch/eli/cc/24/719_735_717/de (Accessed on July 25, 2022).

³¹ See *Federal Law on Old Age and Survivors Insurance (Bundesgesetz über die Alters- und Hinterlassenenversicherung, AHVG, SR 831.10)*, https://www.fedlex.admin.ch/eli/cc/63/837_843_843/de (Accessed on July 25, 2022).

³² *Federal Law on Occupational Benefit for Old Age, Survivors and Invalidity (LOB) (Bundesgesetz über die berufliche Alters-, Hinterlassenen- und Invalidenvorsorge, BVG, SR 831.40)*, https://www.fedlex.admin.ch/eli/cc/1983/797_797_797/de (Accessed on July 25, 2022).

³³ See *Federal Law on Accident Insurance (Bundesgesetz über die Unfallversicherung, UVG, SR 832.20)*, https://www.fedlex.admin.ch/eli/cc/1982/1676_1676_1676/de (Accessed on July 25, 2022).

³⁴ See *Federal Law on Health Insurance (Bundesgesetz über die Krankenversicherung, KVG, SR 832.10)*, https://www.fedlex.admin.ch/eli/cc/1995/1328_1328_1328/de (Accessed on July 25, 2022).

³⁵ See FINMA, *Fact Sheet: The Swiss Solvency Test*, <https://www.finma.ch/en/supervision/insurers/cross-sectoral-tools/swiss-solvency-test-sst/> (Accessed on July 25, 2022).

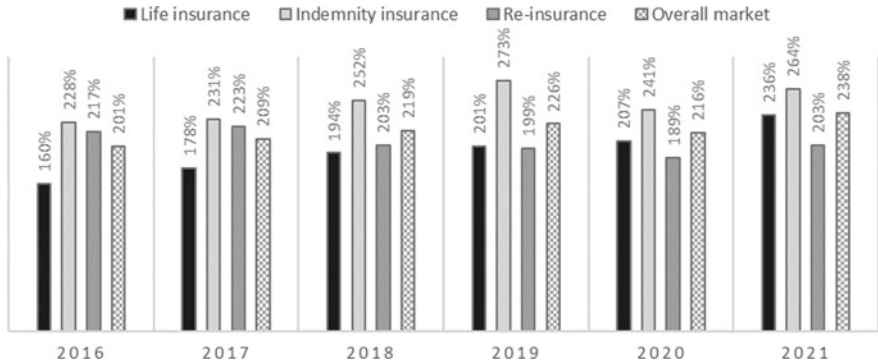


Fig. 6.9 Solvency ratios of Swiss insurance companies (Source Schweizerischer Versicherungsverband, *Prämienvolumen und Kennzahlen*, <https://www.svv.ch/de/der-svv/svv-publikationen/zahlen-und-fakten/zahlen-und-fakten/praemienvolumen-und-kennzahlen> [Accessed on October 3, 2022]; FINMA, *Bericht über den Versicherungsmarkt 2021*, <https://www.finma.ch/de/-/media/finma/dokumente/dokumentencenter/myfinma/finma-publikationen/versicherungsbericht/20220909-versicherungsmarktbericht-2021.pdf> [Accessed on October 3, 2022])

Based on the assets and liabilities of a typical insurance company, the SST provides a methodology for determining the required capital (target capital). The solvency ratio then measures the available capital relative to the target capital required by the SST. As Fig. 6.9 shows, the solvency ratios of Swiss insurance companies have consistently been above 200% on average from 2016 to 2020. That means, in total, surplus capital has been even larger than the required capital. 98 out of the 133 insurance companies supervised by FINMA in 2021 used the standard model approach of the SST. By contrast, 35 insurance companies either used an internal model (19) or a standard model with some internal modules (16).³⁶

The SST comprehensively integrates relevant risk categories into the calculation of target capital and provides a breakdown of the risks driving it. Therefore, it is a modern instrument for regulators and the insurance sector to measure the financial health of this industry. One major problem with the SST and Solvency II frameworks is that positions are more volatile and procyclical than under Solvency I.

³⁶ Internal models have to be approved by FINMA with a “proof of need”. See FINMA, *SST 2021 Survey*, https://www.finma.ch/-/media/finma/dokumente/dokumentencenter/myfinma/2ueberwachung/sst/sst-survey-2021.pdf?sc_lang=en&chash=0F5AD3296581554BFEF880149A3D975C (Accessed on July 25, 2022).

Influence of Pension Funds and Social Security System on Swiss Capital Markets

Like other developed nations, Switzerland has an aging population, and this demographic change has important implications for domestic and international capital markets. Many members of the post-World War II baby-boom generation have either retired or will have retired by (about) 2030. Because of their numbers, the volume of accumulated savings, investments, and pension liabilities has grown at unprecedented rates and to unprecedented levels. A reflection of this growth has been the steady increase in Swiss pension fund assets, which reached, in 2019, CHF 1,021 billion,³⁷ a sum equal to 140% of the nation's GDP.

Between 2018 and 2050, the proportion of Switzerland's population receiving pensions is expected to rise from 18 to 26%.³⁸ Financing these retirements and determining the role government will play in supporting them are issues that relate directly to Switzerland's interest rates, economic growth, and income distribution. To the extent that the Swiss government finances these needs, inter-generational conflicts could arise. The federal social security program (OASI) contemporaneously taxes the current workforce to provide for current pensioners. Any surpluses or deficits that arise are unintended and not based on a conscious policy of asset accumulation. Given that insufficient assets exist to support future pension liabilities, the arithmetic is disconcerting. In 1970, 4.6 Swiss workers supported the average Swiss pensioner, in 2021, the ratio was 2.8, and by 2050, this ratio is expected to fall further to 1.9.³⁹

Occupational pension programs and personal savings are two alternative sources of financing for future retirement needs. The extent to which they are used raises essential issues concerning the proper composition of investment assets (e.g., bonds versus equities versus real estate versus commodities), their geographic distribution, currency diversification, level of risk, and duration. Most nations severely restrict the portfolio decisions of pension portfolio managers, erring on the side of safety over a return, but this safety comes with

³⁷ Bundesamt für Sozialversicherungen, *Schweizerische Sozialversicherungsstatistik 2021*, p. 76, <https://www.bsv.admin.ch/bsv/de/home/sozialversicherungen/ueberblick/grsv/statistik.html> (Accessed on June 27, 2022).

³⁸ Bundesamt für Statistik, *Szenarien zur Bevölkerungsentwicklung in der Schweiz und der Kantone 2020–2050*, <https://www.bfs.admin.ch/bfs/de/home/aktuell/neue-veroeffentlichungen.assetdetail.12847542.html> (Accessed on July 25, 2022).

³⁹ Authors' own calculations based on data from Bundesamt für Statistik, *Szenarien zur Bevölkerungsentwicklung in der Schweiz und der Kantone 2020–2050*, <https://www.bfs.admin.ch/bfs/de/home/aktuell/neue-veroeffentlichungen.assetdetail.12847542.html> (Accessed on July 25, 2022).

a high cost. A mere one percent lower return compounded over 45 years of one's working life has substantial implications for future living standards.

Suppose an individual retired in 2022 after working for 45 years. His base salary in 1977 was CHF 10,000, and, over the years, he earned annual pay raises that averaged four percent. If he contributed 13% of his salary each year toward retirement and his pension fund made 4%, he would be able to retire with a pension equal to roughly CHF 1,700 per month, 20% of his final year's monthly pay. Had the pension fund earned 5% rather than 4%, his monthly pension would have increased to CHF 2,150, 26% of his final year's monthly pay.⁴⁰

Investment Funds

Investment funds organized as mutual funds are an essential part of the Swiss capital markets and are subject to rigid legal regulations and supervision by FINMA. Of the 10,385 admitted funds as of July 2022, 1,879 were Swiss with combined assets of CHF 1,334 billion (as of the end of June 2022).⁴¹ Unlike mutual funds that are regulated by several foreign countries, Swiss investment funds do not necessarily have the status of a legal entity. They can also represent separate assets based on a collective investment contract instead. Foreign investment funds may be distributed in Switzerland, which brings them under the regulatory umbrella of Swiss laws and the supervisory powers of Swiss authorities.

The main growth period for Swiss investment funds was during the late 1960s and early 1970s. However, some of these funds have existed in Switzerland since the 1930s. For example, America Canada Trust Fund (AMCA, today part of UBS Equity USA), founded in 1938 by Schweizerische Bankgesellschaft (SBC, which is today UBS), had the distinction of being the first fund of that kind in Switzerland. The launch of the first Swiss real estate fund also occurred in 1938.

An important peculiarity of the Swiss investment fund business is that it is part of the domestic banking system. By law, open-end collective investment schemes must be managed by a separate company whose sole business is to manage the investment fund. Each fund must have a bank as custodian (depot bank) that is responsible for asset management, which includes

⁴⁰ Author's calculations based on an approach proposed by Stefan Hepp: *The Occupational Pension Schemes in Switzerland—An Emerging Institutional Investment Force*. Bern/Stuttgart: Haupt, 1990, p. 249.

⁴¹ Swiss Funds Data, *Fondmarktbilanz erstes Halbjahr 2022*, <https://www.swissfunddata.ch/sfdpub/de/news/showSfd/3079> (Accessed on July 25, 2022).

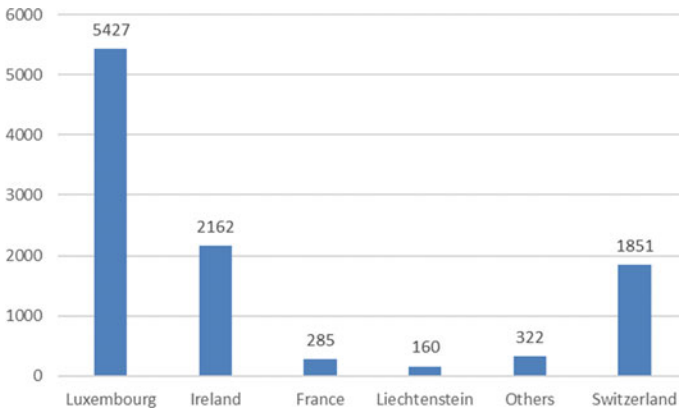


Fig. 6.10 Domiciles of collective investment schemes (April 2022) (Source Staatssekretariat für Internationale Finanzfragen SIF, *Finanzstandort Schweiz—Kennzahlen April 2022*, <https://www.sif.admin.ch/sif/de/home/dokumentation/finanzstandort-schweiz-kennzahlen.html> [Accessed on July 25, 2022])

safeguarding investments in these funds, executing all payments, and assuring that the open-end collective scheme is compliant with the law and fund regulations. The management of the scheme must be completely separated from its custodial functions. More important than these legal obligations is the moral responsibility, which derives from the public's identification of each scheme with the custodian's name. Custodians often advertise investment schemes under their names, virtually guaranteeing their custodial function.

Tapping the EU markets has been a challenge for Swiss investment funds due to domestic taxes (e.g., stamp duties), restrictive investment policies, and other regulations. As a result of these disincentives, Swiss banks that wanted to maintain an international presence in this industry responded by establishing investment fund operations in Luxembourg. As of June 30, 2022, Switzerland was the fourth largest promoter of collective investment schemes, also known as Undertakings for Collective Investment (UCI), behind Germany, U.K., and the United States with a market share (in net assets) of 13.9%.⁴² At the same time, most collective investment schemes distributed in Switzerland are domiciled in Luxembourg (Fig. 6.10).

FINMA must officially permit the distribution of foreign collective investment schemes in or from Switzerland, but it does not supervise admitted foreign collective investment schemes. Instead, supervision is in the hands of investor-protection laws of their respective home countries. The organization,

⁴² Commission de Surveillance du Secteur Financier, Luxembourg, *Origin of UCI initiators in Luxembourg, Situation as at June 30, 2022*, www.cssf.lu/en/statistics/uci/quarterly-stats/promoters (Accessed on July 25, 2022).

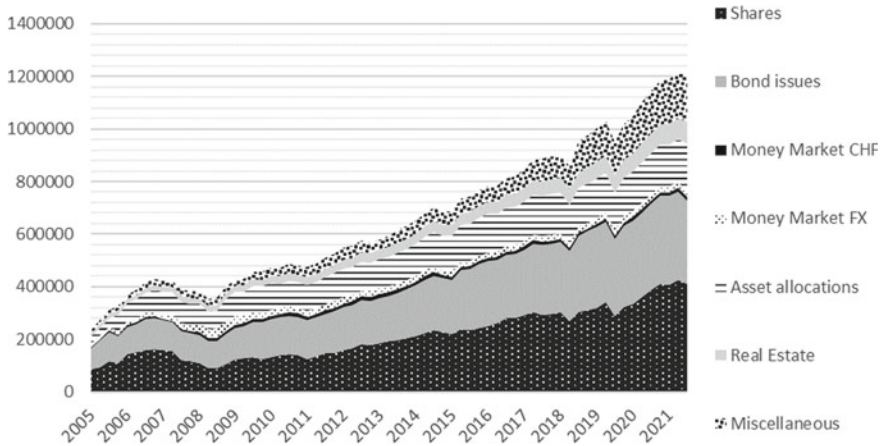


Fig. 6.11 Open collective capital investments (Mutual funds and investment companies) according to the federal act on collective investment schemes, 2005–2022 (CHF million) (Source Swiss National Bank, *Swiss open collective capital investments—By investment category*, <https://data.snb.ch/en/topics/finma/cube/capcollcat> [Accessed on July 25, 2022])

investment rules, and policies must be on par with Switzerland’s *Federal Act on Collective Investment Schemes*. In addition, the scheme’s name must not give rise to confusion or fraud, and, according to Swiss banking law, a bank must act as the representative and paying agent. This representative bank’s principal task is to represent the foreign collective investment schemes for investors and FINMA and to ensure compliance with Swiss regulations and the self-regulatory rules of the Swiss Funds Association.

Figure 6.11 shows that at the end of the first quarter of 2021, shares accounted for 34.1% of the assets in all Swiss collective investment vehicles. Bond issues shrank from 33.4% in 2005 to 26.5% in 2022. Until 2007, these statistics comprised only mutual funds. However, due to the enactment of the *Federal Act on Collective Investment Schemes* (KAG) in 2008, they now include other collective investments, such as investment companies.

Real Estate Funds and Real Estate Investment Companies

Investments in real estate funds are attractive to foreign investors, who cannot buy Swiss real estate directly because of the still-existent restrictions under Swiss law (Lex Koller, formerly Lex Friedrich). Despite restrictions regarding the purchase of real estate by non-Swiss investors, foreigners without permission can purchase certificates of listed real estate funds. However, this is

not the case for unlisted forms of indirect real estate investments.⁴³ Unlike some Anglo-Saxon funds, Swiss real estate funds do not participate in household mortgages but, rather, invest in revenue-earning properties. Although most real estate funds spread their risks by investing throughout Switzerland, substantial parts of their portfolios are concentrated in larger cities. In 2022, Swiss real estate funds and real estate investment companies invested about CHF 85.5 billion in Swiss real estate.⁴⁴

Diversification of Investment Funds

In total, 14.9% of Switzerland's open collective investment schemes are mixed funds that invest in a combination of shares and bonds. A few smaller funds specialize in either one country or one economic sector, where the risk-reward potential seems to be higher due to the lack of diversification. Another difference between the various funds is their emphasis on dividend yield versus capital appreciation (growth funds). While many Swiss funds are distributive, most foreign funds sold in Switzerland are accumulative, which means they reinvest most of their revenues. These funds perform valuable services for investors by lowering risk and increasing opportunities, usually through their research departments, which help to identify profit opportunities worldwide. For these services, the funds are paid commissions calculated as a percentage of assets under management. Fund certificates can be purchased either on the stock exchange or over-the-counter, where the major funds and their banks maintain a market in the certificates. At the end of Q1 2022, 265 of 1810 open Swiss collective capital investment schemes were mixed funds.

Industry Concentration

The two big banks dominate Switzerland's investment fund industry. Figure 6.12 shows that UBS and Credit Suisse accounted for 41% of the domestic market as of June 30, 2022. Neither foreign competitors nor insurance companies have gained significant shares of the Swiss market, even though the intensity of competition has increased as banks and insurance companies (both domestic and foreign) have continued to find overlapping

⁴³ See Verordnung über den Erwerb von Grundstücken durch Personen im Ausland, https://www.fedlex.admin.ch/eli/cc/1984/1164_1164_1164/de (Accessed on July 25, 2022).

⁴⁴ See Swiss National Bank, *Swiss open collective capital investments—By investment category*, <https://data.snb.ch/en/topics/finma/cube/capcolcat> (Accessed on July 25, 2022).

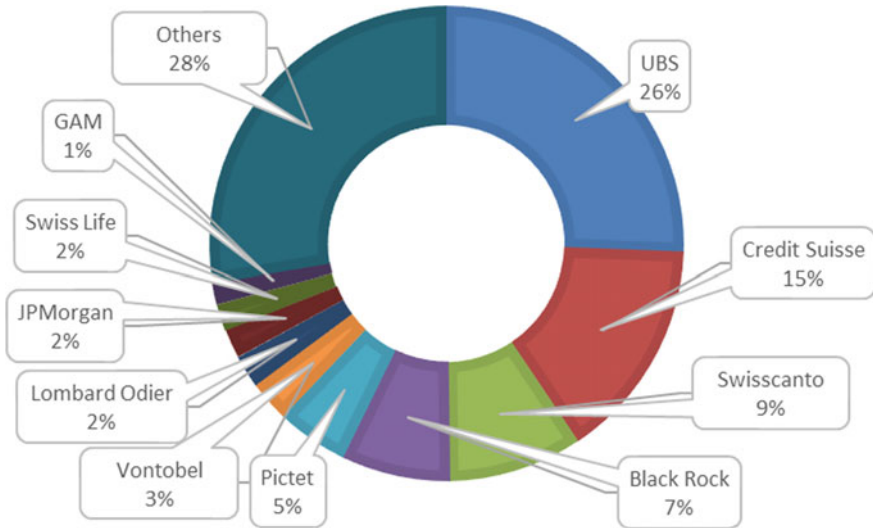


Fig. 6.12 Concentration of Swiss investment fund industry, June 30, 2022 (Source AMAS Marktkommentar/Swiss Fund Data AG, *Market Comments [June 2022]*, <https://www.swissfunddata.ch/sfdpub/fundmarket-statistics> [Accessed on July 25, 2022])

business interests. Nevertheless, increased competition in the asset management sector has caused Swiss private banks to increase their investment fund alternatives. The largest foreign competitors are Black Rock (7.4%) and JP Morgan (2%), but Swiss banks have responded by setting up operations in other nations to market their Luxembourg-based investment funds.

Regulation of Collective Investment Schemes

Switzerland has undertaken significant steps to improve the regulatory framework of institutional investing. The main pillars are the *Collective Investment Schemes Act (CISA)*, in force since January 1, 2007,⁴⁵ the *Financial Market Infrastructure Act (FinMIA)*, in force since January 1, 2016,⁴⁶ the *Financial*

⁴⁵ Collective Investment Schemes Act (CISA)/Kollektivanlagengesetz (KAG), SR 951.31, <https://www.fedlex.admin.ch/eli/cc/2006/822/en>.

⁴⁶ Financial Market Infrastructure Act (FinMIA)/Finanzinfrastrukturgesetz (FinfraG), SR 958.1, <https://www.fedlex.admin.ch/eli/cc/2015/853/en>.

Institutions Act (*FinIA*, in force since January 1, 2020),⁴⁷ and the *Financial Services Act* (*FinSA*, in force since January 1, 2020).⁴⁸

On January 1, 2007, Switzerland's new *Federal Act on Collective Investment Schemes* came into force. *Article 1* of the new law states that its purpose is to improve investor protection, increase transparency, and enhance the operational capability of the collective investment scheme market. According to the *Act*, only mutual funds established on a contractual basis or as investment companies with variable capital (SICAV)⁴⁹ are permitted as open-end collective investment schemes (Art. 8). Closed-end collective investment schemes take the form of limited partnerships for collective investments or investment companies with fixed capital (SICAF).⁵⁰

The *Collective Investment Schemes Act* has brought Switzerland's regulations in line with the EU funds directive (*Undertakings for Collective Investments in Transferable Securities—UCITS*). It also goes a long way toward freeing Swiss fund managers to compete in the international markets by enabling (with limitations) the use of many of the financial instruments that once were restricted, such as derivatives and book entry instruments. Consequently, many of the advantages other countries (especially Luxembourg) have enjoyed relative to Switzerland during the past years have decreased.

Swiss law further mandates that the fund manager of an open-end collective investment scheme be a Swiss public limited company with a minimum capital of CHF 200,000 and the management of the scheme be independent from the custodian bank.⁵¹ Investors are protected by transparency requirements for open-end investment schemes, which stipulate both semi-annual and annual reporting. The law also defines the form these financial reports need to take. A disadvantage of the liquidity provided to investors is that mandatory redemptions often force funds to sell certain positions, which may cause increased stock market volatility.

There are organizational restrictions for closed-end investment schemes,⁵² such as limited partnerships and SICAF, as well as articles of incorporation (e.g., regarding the legal form), investments, and publication requirements. Still, they are not as far-reaching as those for open-end structures. Investment

⁴⁷ Financial Institutions Act (FinIA)/Finanzinstitutsgesetz (FINIG), SR 954.1, <https://www.fedlex.admin.ch/eli/cc/2018/801/de>.

⁴⁸ Financial Services Act (FinSA)/Finanzdienstleistungsgesetz (FIDLEG), SR 950.1, <https://www.fedlex.admin.ch/eli/cc/2019/758/en>.

⁴⁹ SICAV is an abbreviation for société d'investissement à capital variable.

⁵⁰ SICAF is an abbreviation for société d'investissement à capital fixe.

⁵¹ Formerly regulated by the Collective Investment Schemes Act (CISA), Art. 28, now by the Financial Market Infrastructure Act (FinMIA), Art. 8, and the Ordinance on the FinIA, Art. 42.

⁵² See Collective Investment Schemes Act (CISA), Art. 98–118.

regulations mandate adherence to investment policies, which must conform contemporaneously to the defined investment character of the investment scheme. The law identifies FINMA as the supervisory authority of collective investment schemes. It also explains the duties of managers, sales agents, representatives of foreign investment schemes, custodians, auditors, valuation experts, and supervisory authorities.

In light of the *EU Directive on Alternative Investment Fund Managers (AIFM Directive or AIFMD)*, which came into force in the EU in 2011, the Swiss Federal Council decided to revise the *Federal Collective Investment Schemes Act (CISA)*. With the *Financial Services Act (FinSA)* and the *Financial Institutions Act (FinIA)* that came into force on January 1, 2020, the *CISA* was fundamentally revised. While the *FinIA* regulates the admission and conduct of financial intermediaries, the *FinSA* aims to protect clients and regulate documentation and the distribution of financial products. This last point includes significant changes regarding the distribution concept and the definition of qualified investors. Hence, the *CISA* now focuses mainly on products and investment schemes. The revised act is supposed to come into force in 2023. In addition, with the Limited Qualified Investor Fund (L-QIF), there will be a new and less regulated investment scheme for qualified investors which will also facilitate venture capital investments.⁵³ For Swiss fund managers, compatibility with the new regulations is a prerequisite to managing and distributing funds registered in the EU. The *AIFMD (Alternative Fund Managers Directive)* will allow the distribution of funds in the entire EU for fund managers benefitting from an EU Passport after obtaining permission from one member country.

The *Financial Market Infrastructure Act (FinMIA)* regulates financial market infrastructures and the conduct of financial market participants to guarantee transparent and functioning markets for securities and derivatives trading. Large parts of the *Stock Exchange Act* were integrated into *FinMIA*, such as regulations on public takeover offers, insider trading, and market manipulation.

⁵³ State Secretariat for International Finance SIF, Collective Investment Schemes Act (CISA), <https://www.sif.admin.ch/sif/en/home/finanzmarktpolitik/financial-market-regulation/regulatory-projects/collective-investments-scheme-act-cisa.html> (Accessed on July 25, 2022).

Conclusion

Since 2000, regulation changes have led to massive shifts in Switzerland's insurance and collective-investment sectors. Many adjustments were motivated mainly by alignments of Swiss and foreign rules, like those of the European Commission. Pension funds have become the most prominent players in the Swiss capital markets. Regulators of these financial institutions have concentrated on ensuring safety, up to the potential exclusion of national economic growth, which will be needed to generate incomes sufficient to meet future debt obligations.

Similarly, adequate funding of the government's old-age scheme will require economic growth to broaden the nation's tax base and release it from the zero-sum game of borrowing from Peter to pay Paul. As might be expected, government regulations' effect on economic growth has recently gotten political consideration.

The challenges facing Swiss institutional investors are manifold. Demographics, in general, and an aging population, in particular, will continue to pose serious financing problems for the nation's social security system. Private insurance companies will face challenges of their own, with ever-tightening regulation and an increasingly competitive and complex market environment. For Switzerland's fund industry to succeed, one of the critical factors will be its continued and unfettered access to liquid international markets. Considering recent regulatory changes in the EU, prospects for additional changes are highly likely and expected to be geared more towards safety and control rather than value creation.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.





7

Swiss National Bank and Swiss Franc's Role in Global Financial Markets

Introduction

For more than a century, Switzerland has enjoyed a relatively high level of political and fiscal stability, low government debt, and a well-functioning system of legal institutions, all of which have contributed to the strong demand for Swiss francs and Swiss-franc-denominated direct and financial investments. During crises, the Swiss franc has often served as a safe haven currency, causing heavy capital inflows and substantial currency appreciations. The attributes that have attracted foreign capital to Switzerland stem mainly from its relative lack of commercial and financial restrictions, political neutrality, direct democracy, low inflation rate, moderate taxes, and fiscally disciplined (federal, cantonal, and municipal) governments. Of prime importance, the Swiss franc's international appeal and relative strength have been due to a prohibition on the central bank's ability to lend directly to the Confederation. During periods of rapid currency appreciation, Swiss companies have struggled to maintain their international competitiveness, but the longer-term effects of the currency's strength have been generally beneficial. An appreciating franc has forced Swiss companies to remain flexible and innovative. It has dampened the rise in consumer prices by making imports more affordable, and net capital inflows have helped keep Switzerland's real interest rates among the lowest in the world.

Crucial to Switzerland's success has been its reliable, conservative, and independent central bank, which has played a vital role in supporting the nation's efficient money and capital markets. Keeping prices relatively stable and effectively allocating financial resources have supported Switzerland's

economic growth at sustainable rates. As the ultimate source of liquidity for the nation's banking system and lender of last resort during financial hardships and crises, Switzerland's central bank has mitigated possible systemic financial risks, provided the market with banking services that facilitate transactions, participated in multilateral global organizations, and compiled useful statistical data.

Overview of the Swiss National Bank

The Swiss National Bank ("SNB" or "Bank") is Switzerland's central bank. The Swiss Parliament (i.e., Federal Assembly) created the SNB in 1905 as a special-statute, quasi-public, joint-stock company.¹ In 1906, the *Federal Act on the Swiss National Bank* (*National Bank Act, NBA*) went into force, and a year later, the SNB started business, gaining specific responsibilities and powers related to the nation's financial stability and soundness.

The Bank is located in eight regions, with headquarters in Bern and Zurich and six representative offices in Basel, Geneva, Lausanne, Lucerne, Lugano, and St Gallen. Since 2012, the SNB has had a branch office in Singapore to keep the SNB's Governing Board informed of regional economic conditions and communicate SNB policies to areas around the country. In addition, 13 canton-operated agencies assist the SNB with banknote distribution.²

SNB shares are registered and listed on the Swiss stock exchange. Approximately 78% of them are owned by public shareholders, such as cantons, cantonal banks, and other public law institutions, such as municipalities. Private investors hold the remaining 22%.³ The Swiss Confederation cooperates with the SNB but holds none of its share capital, fixed at 25 million Swiss francs, with 100,000 registered shares, each carrying a nominal value of 250 Swiss francs.⁴

The *NBA* defines shareholder rights. To prevent excess power in the hands of one or a few, limitations are placed on the number of SNB shares any individual can hold. Furthermore, private shareholders' voting privileges are limited to 100 shares, and dividends cannot exceed 6% of the SNB's nominal

¹ Details for this section were obtained from the SNB's homepage. See <https://www.snb.ch/en/iabout/snb> (Accessed on August 20, 2022).

² They are solely active in the cash area but not in the cashless payments domain.

³ Swiss National Bank, Annual Report 2020, Annual Financial Statements, Breakdown of Share Ownership as of 31 December 2020, p. 200, https://www.snb.ch/en/mmr/reference/shares_structure/source/shares_structure.en.pdf (Accessed on August 20, 2022).

⁴ SNB, Independence, Accountability and Relationship with the Confederation, https://www.snb.ch/en/iabout/snb/org/id/snb_org_indep (Accessed on August 20, 2022).

share capital (i.e., $6\% \times \text{CHF } 250 \text{ per share} = \text{CHF } 15 \text{ per share}$). The remaining profits are paid to “the public,” which means distributing them to the Confederation and cantonal shareholders (i.e., cantons and cantonal banks). The rights of SNB shareholders are further diminished by empowering the Federal Council to appoint a majority of the SNB's 11-member Bank Council, including the President and Vice President. The Federal Council also appoints all three members (and three alternate members) of the Governing Board, including the chairman and vice chairman.

The SNB's late appearance relative to other European central banks was due to the nation's lack of uniform currency laws, inconsistent bank note regulations, and relatively moderate credit demands.⁵ *Article 36* of Switzerland's first Federal *Constitution* in 1848 transferred the right of coinage from cantons to the Federal Confederation, in effect giving the central government authority to administer the nation's currency. After that, the demand for Swiss franc funds increased rapidly. Nevertheless, it took more than a half-century to establish the SNB. A significant step along the way occurred in 1891 when the Swiss federal government gained the constitutional right (*Article 39*) to be the sole issuer of Swiss franc banknotes. In 1910, the Confederation transferred to the SNB its power to issue Swiss franc banknotes.

Until the 1960s, the SNB acted as a relatively passive monetary authority, increasing the money supply to accommodate an expanding economy and contracting it when the economic growth rate slowed. During the 1960s, this monetary stance changed as international developments prompted the Bank to take a more dynamic role in the economy.

In 1971, the *Bretton Woods (Currency) Agreement* was abandoned and replaced by the *Smithsonian (Currency) Agreement*, which lasted only until 1973. Both agreements restricted member countries' exchange rate movements to a relatively narrow range. With their demise, Switzerland revised, in 1978, its *NBA*, giving the SNB a full range of monetary tools. Before the revision, the SNB operated primarily based on special legislation.

As critical as the revised *NBA* was in 1978, the statutory basis for *today's* SNB comes from the *NBA of 2003*,⁶ which lays out the Bank's mandate, independence, accountability, obligation to set aside reserves, allocation of profits, monetary policy instruments and powers, and organizational structure. From this *Act*, which came into force on May 1, 2004, the Bank gained

⁵ A summary of the SNB's history is available at Swiss National Bank, Chronicle of Monetary Events, https://www.snb.ch/en/i/about/snb/hist/id/hist_wpc# (Accessed on August 20, 2022).

⁶ See Federal Act on the Swiss National Bank, <https://www.fedlex.admin.ch/eli/cc/2004/221/en> (Accessed on August 8, 2022).

the statutory powers needed to use its choice of monetary instruments to provide the Swiss financial markets with liquidity.

The SNB's Mandate, Goals, Responsibilities, and Strategies

Mandate

Switzerland's Federal *Constitution*⁷ and *NBA*⁸ mandate the SNB's independence and responsibility to conduct monetary policies transparently and for the nation's benefit as a whole. The NBA defines these responsibilities more concretely than the *Constitution* by specifying the SNB's duty to "ensure price stability" with due consideration for the economy's development (*Article 5*).

Independence

A central bank's "independence" can be inferred from its ability to control impactful monetary instruments and its freedom from outside influence, particularly when setting monetary policies and choosing and replacing personnel, such as the governor, board, and council members. Switzerland's Federal *Constitution* and the *NBA* established the Central Bank's right to operate independently, resulting in the SNB having considerable functional, political, financial, institutional, and personnel autonomy.

Functional and political independence stem from prohibitions on the Bank seeking or accepting instructions from the Federal Council, the Federal Assembly, or any other political body while fulfilling its monetary tasks.⁹ More autonomy comes from a prohibition on granting loans or overdraft facilities to the Confederation. The SNB's financial (i.e., budgetary) independence results from its power to self-finance operations by acquiring interest-earning and other assets with the monetary base it creates. Institutional autonomy is grounded in the SNB's independent organizational structure. Finally, its personnel independence springs from the six-year terms

⁷ Article 99 of the Federal Constitution of the Swiss Confederation provides the basis for Switzerland's currency and the SNB. See Article 99 of the Federal Constitution, https://www.snb.ch/en/mmt/refere/nc/Bundesverfassung_Art_99/source/Art_99_Geld_und_Waehrung_en.pdf (Accessed on August 22, 2022).

⁸ Federal Act on the Swiss National Bank Act, Article 5 and Article 6, Ibid.

⁹ The SNB gained full functional independence only in 2004 when the revised Swiss National Bank Act came into force.

of the SNB's Governing Board members, who may be removed from office only if they cannot exercise their duties or commit significant authority breaches of the law. The Confederation's Federal Council (Bundesrat) cannot appoint SNB Governing Board members unless the SNB's Bank Council first recommends them. Therefore, stacking the SNB with political favorites has been made intentionally difficult.

Additional support for the SNB has come from Switzerland's underlying belief that an independent central bank increases the chances of aligning monetary policies with the country's long-term interests. In short, Switzerland accepts the countless academic studies showing that, for developed countries, there is a high correlation between low inflation and central bank independence, so long as the central bank acts within the bounds of its mandate (i.e., independence is not freedom to do anything).¹⁰

Transparency

Even though the SNB's independence is constitutionally guaranteed, this freedom has some significant limitations because the Bank is accountable to Switzerland's Federal Council, Parliament, and the public.¹¹ The *NBA* mandates that the SNB's operations be conducted transparently and, to this end, places threefold accountability on the Bank. First, it must regularly discuss economic conditions and monetary policies with the Federal Council, particularly in the context of federal fiscal policies. Second, it must submit a written *Annual Report* to the Federal Assembly, including an *Accountability Report* and a *Financial Report*. The *Accountability Report* describes the SNB's monetary policies and their implementation, along with whether the SNB has met its responsibilities. The *Financial Report* explains the SNB's health as understood through its financial statements (i.e., balance sheet, income

¹⁰ Relatively recent studies have shown that the relationship between central bank independence and inflation depends on the sample selection. Many of the most cited empirical studies focused on developed nations, showing an inverse relationship, but the results become more nuanced when the sample is expanded to include developing countries. See Ana Carolina Garriga, Central Bank Independence in the World: A New Data Set, *International Interactions* 42:5 (2016), 849–868. Commonly cited studies showing the inverse relationship between the independence of developed nations' central banks and inflation are as follows: Jeroen Klomp and Jakob de Haan, Inflation and Central Bank Independence: A Meta-Regression Analysis, *Journal of Economic Surveys* 24:4 (2010), 593–621. Charles T. Carlstrom and Timothy S. Fuerst, Central Bank Independence and Inflation: A Note, *Economic Inquiry* 47:1 (2009), 182–186. Alberto Alesina and Lawrence H. Summers, Central Bank Independence and Macroeconomic Performance: Some Comparative Evidence, *Journal of Money Credit and Banking* 25:2 (1993), 151–162.

¹¹ See Article 99 para. 2 in the Federal Constitution and Articles 5 to 7 in the National Bank Act.

statement, and notes). The obligation to explain Switzerland's economic situation, monetary policies, and their intended effects also extends to responsible federal committees.

Finally, the Bank must inform the public of its actions and does so through its *Quarterly Bulletin*, *Annual Report*, and *Financial Stability Report*, which is an annual publication that addresses the health of Switzerland's banking sector. The SNB also uses popular channels, such as YouTube, Twitter, and its website (www.snb.ch) to communicate with the public through multilingual videos, news recordings, press releases, statistical reports, and posts.

Cooperation

The SNB cooperates with the Swiss Financial Market Supervisory Authority (FINMA), and the Federal Department of Finance (FDF) to:

- Exchange information on issues related to financial stability and financial market regulation, and
- Promote financial stability, particularly in times of financial crisis.

These responsibilities are enshrined in the trilateral Memorandum of Understanding (January 2011).¹²

The SNB concentrates on macroeconomic, systemic, and macroprudential regulation issues. FINMA's center of attention is on monitoring individual financial institutions. Among the FDF's responsibilities are:

- The Confederation's budget,
- Financial planning,
- Fiscal policies,
- Federal treasury management,
- Ensuring there is financial equality between the federal government and cantons,
- Taxes,
- Human resources,
- Providing IT services for the federal administration, and

¹² Swiss Confederation, FINMA, SNB, Memorandum of Understanding in the Area of Financial Stability and the Exchange of Information on Financial Market Regulation between the Federal Department of Finance, Financial Market Supervisory Authority, and the Swiss National Bank, <https://www.snb.ch/en/mmr/reference/tripartite/source/tripartite.en.pdf> (Accessed on August 20, 2022). This MoU does not affect these institutions' bilateral agreements, statutory responsibilities, and decision-making powers.

- Monitoring the nations' imports, exports, and transit goods. The FDF is also in charge of the federal mint.

Monetary Policy Goals and Responsibilities

The SNB's primary goal is to ensure price stability while taking due account of economic developments.¹³ As a practical matter, "price stability" has been defined by the SNB to mean keeping the nation's medium-term inflation rate between 0 and 2% per year.

Switzerland's Constitution and *NBA* prioritize price stability in the SNB's mandate, which helps to explain many of the tough decisions the Bank has needed to make. For example, the choice in January 2015 to abandon Switzerland's euro currency peg had a detrimental effect on the country's export sector¹⁴ and was criticized by many industry participants and observers.¹⁵ Nevertheless, by considering the SNB's mandate and priorities, this decision can be fully understood. In general, the Swiss economy has learned to get by with a strong Swiss franc and, so far, may have been strengthened by it because currency appreciation forced Swiss companies to operate efficiently and remain innovative.

The Bank contributes to systemic financial stability by facilitating and securing the functioning of Switzerland's cashless payment systems, counterparties, and security depositories.¹⁶ With these responsibilities and the tools to achieve them, the SNB has been well-equipped to protect Switzerland from technical problems or failures that might spread from one financial institution or sector to another. To ensure the SNB serves the "nation as a whole," it is not permitted to favor or disfavor any region, industry, group, or cause.¹⁷

In addition to the responsibilities mentioned above, the *NBA* holds the SNB accountable for:

¹³ Swiss National Bank, Goals, and Responsibilities of the SNB (Overview), https://www.snb.ch/en/iabout/snb/id/snb_tasks, (Accessed on August 8, 2022).

¹⁴ Simon Wey, Abolition of the Minimum Euro Exchange Rate Exacerbates Uncertainties, Schweizerischer Arbeitgeberverband, January 15, 2015, <https://www.arbeitgeber.ch/arbeitsmarkt/aufhebung-des-euro-mindestkurses-verschaerft-unsicherheiten-fuer-schweizer-arbeitgeber/> (Accessed on August 22, 2022).

¹⁵ Niklaus Vontobel, The SNB did not expect that, Aargauer Zeitung, <https://www.aargauerzeitung.ch/verschiedenes/damit-hat-die-snb-nicht-gerechnet-ld.1622243> (Accessed on August 8, 2022).

¹⁶ The attributes of systemically important financial institutions for the Swiss financial system are explained in the National Bank Ordinance. See Ordinance to the Federal Act on the Swiss National Bank, <https://www.fedlex.admin.ch/eli/cc/2004/233/en> (Accessed on August 8, 2022).

¹⁷ For example, its foreign share purchases replicate international stock markets according to their market capitalization.

- Ensuring the supply and distribution of cash—both notes and coins¹⁸;
- Holding sight deposit accounts for banks (e.g., for clearing and reserve requirement purposes) and other market participants, such as insurance companies and fund management firms;
- Managing currency reserves, which include foreign-currency-denominated investments, gold holdings,¹⁹ the SNB's reserve position in the International Monetary Fund (IMF), and its IMF Special Drawing Rights²⁰;
- Providing the Swiss Confederation with banking services (i.e., acting as the government's fiscal agent), such as issuing money market debt register claims and bonds, serving as the paying agent for coupons, bond repayments, and money market debt register claims, managing the Confederation's securities custody accounts, providing technical and advisory financial assistance, and conducting money market and foreign exchange transactions;
- Collecting and publishing statistical information on banks, real estate, and financial markets, and
- Participating with foreign central banks and cooperating with international organizations, such as the Bank for International Settlements (BIS), IMF, Financial Stability Board (FSB),²¹ and the Organization for Economic Cooperation and Development (OECD).

Environmental Sustainability

Since 1996, the SNB has chosen environmental sustainability as one of its goals by implementing eco-friendly management policies that reduce resource consumption. The SNB's annual *Sustainability Report* now contains a separate section on "Environment," which focuses on conserving natural resources, environmental performance, and climate protection. The SNB's operational sustainability pays particular attention to the Bank's interrelationships with employees, society, and the environment. When it comes

¹⁸ The SNB handles large-scale distributions of banknotes and coins. Commercial banks, Swiss Post, and cash processing operators manage retail allocations. Orell Füssli Security Printing Ltd. is responsible for printing Swiss banknotes, and Swissmint, the federal mint in Berne, produces coins.

¹⁹ Gold holdings include bars and coins.

²⁰ Foreign currency reserves are invested in interest-bearing securities of foreign governments, corporate bonds, and equities, most of which are denominated in euros and US dollars. The SNB abstains from investing in shares of systemically important global banks. For ethical reasons, it does not invest in shares or bonds of companies that grossly breach broadly accepted political and social norms, such as those violating human rights, causing environmental damage, and producing lethal weapons.

²¹ Created in 2009, the FSB is an international organization responsible for monitoring the global financial system and making recommendations for improving its efficiency and safety.

to implementing monetary policies and managing its balance sheet, the SNB tries to account for all relevant risks, including those linked to the climate. The central bank's position is that "it is not desirable for the SNB to pursue specific structural or societal policy objectives. To do so might hinder the implementation of independent and credible monetary policies."²² In short, unless environmental, political, and social changes impact the stability of Switzerland's financial system, they are better managed at the governmental level.

Profitability

Because the SNB has a constitutional obligation to pursue monetary policies that serve the nation's overall interests, its primary responsibilities are monetary policy and financial stability—not earning profits. SNB profits are tax-exempt. A portion of them is retained and allocated to *Provisions for Currency Reserves*, which is part of the Bank's equity. If net profits are positive after these provisions, the remainder is distributed to shareholders, the Confederation, and cantons.²³ Of the remaining *net profits*, the Bank is permitted to pay dividends to shareholders not exceeding 6.0% of its share capital. Finally, one-third of any remaining net profits is distributed to the Swiss Confederation and two-thirds to the Swiss cantons, in proportion to their respective populations. This distribution rule, which the *Constitution* and *NBA* set, severely limits shareholder dividend payments. During most years, the major portion (by far) of net profits (after provisions) go to cantons and the Confederation.

Annual allocations to the SNB's provisions for currency reserves are made regardless of whether yearly results are positive or negative. Losses or insufficient profits impact the Bank's distribution reserve, which could cause it to be negative, as was the case during 2013.²⁴

Under the Bretton Woods and Smithsonian Agreements, the SNB had little opportunity to earn profits. The collapse of these agreements in 1971 and 1973, respectively, allowed the Swiss franc to fluctuate against other currencies. Through the 1970s and 1980s, the SNB's foreign exchange

²² Swiss National Bank, *Climate Risks and Central Banks: an SNB Perspective*, November 11, 2019, https://www.snb.ch/en/mmr/speeches/id/ref_20191114_amrtmo (Accessed on August 10, 2022).

²³ 2013 was the first time in its 106-year history that the SNB paid no dividends. Jean Studer, President of the Bank Council, *A Year without Dividends and Profit Distribution—What Are the Reasons*, 106th Ordinary General Meeting of Shareholders of the Swiss National Bank, Berne, April 25, 2014, https://www.snb.ch/en/mmr/speeches/id/ref_20140425_stj (Accessed on August 10, 2022).

²⁴ SNB, *Questions and Answers on Equity Capital and Profit Appropriation*, https://www.snb.ch/en/ifor/public/qas/id/qas_eigenkapital#t12 (Accessed on August 20, 2022).

reserves rose relative to its gold holdings, and its portfolio of securities increased in tandem with its open market operations. As a result, movements in exchange rates and interest rates caused significant changes in the SNB's profits and problematic fluctuations in its distributions to the Confederation and cantons. The underlying reason for the SNB's profit volatility was (and is) its mismatched balance sheet, with large foreign currency-denominated assets paired with Swiss franc liabilities. Private institutions might hedge this foreign-currency risk, but the SNB does not. One reason is the act of hedging could appreciate the Swiss franc's value and undermine the reason intervention was taken in the first place.

Pressure built during the 1980s to smooth these annual distributions and bring greater stability to Confederation's and cantons' budget planning. Any suitable agreement rested on four central pillars.

1. Distributions could not put pressure on the SNB to earn profits at the expense of price stability;
2. Distributions could not influence the domestic monetary base;
3. The SNB's unhedged foreign exchange reserves should grow with the rate of nominal gross national product (GNP), and
4. Current distributions should be based on past profits.

In 1991, an agreement was reached to distribute a maximum of CHF 600 million per annum to the Confederation and cantons, with lower distributions possible if the SNB's profits waned. Any surpluses would be allocated to provisions. Distributions were lagged one year, which meant payments on January 1, 1993 were based on profits in 1991.²⁵

The 1991 agreement continued until 1997, when the *NBA* was revised and expanded the SNB's investment capabilities, which led to a considerable and controversial reduction in gold holdings and an increase in interest-earning financial assets. This revision, together with continuing pressure by the Confederation and cantons for greater stability, led to a series of refinements in subsequent years that changed the distribution smoothing process and payment amounts. These alterations were based on evolving conditions and included:

- Setting fixed periods for each agreement, such as two, five, and ten years,

²⁵ For a detailed history of these distribution changes, see: Peter Klauser, Profit Distribution, pp. 451–462 in *The Swiss National Bank: 1907–2007* by Werner Abegg, Ernst Baltensperger, et al., Swiss National Bank, 2007.

- Inserting clauses that allowed for increases and decreases in fixed annual distributions, plus the possibility of supplementary payments, when SNB profits warranted them²⁶;
- Raising payments to eliminate the SNB's large distributable surplus;
- Basing the growth of SNB provisions on gross domestic product (GDP) instead of GNP;
- Linking distributions to the SNB's gold sales, and
- Preserving the principle that fixed Confederation and canton distributions should be stabilized and maintained over the medium term.

The two most recent distribution agreements are illuminating. The first one, from 2016 to 2020, set the Confederation's and the cantons' fixed annual payments at CHF 1 billion but paid them only if (1) net profits were positive after making provisions for currency reserves and (2) the SNB's distribution reserves (i.e., retained earnings) were not negative.²⁷ For years when the Bank made no distributions, extra payments in subsequent years could compensate, so long as the SNB's "Provisions for Currency Reserves" permitted it. If the distribution reserve exceeded CHF 20 billion, the Confederation and cantons could receive a maximum of CHF 2 billion.²⁸ In February 2020, a supplementary agreement between the FDF and SNB provided an additional allocation of up to CHF 2 billion (i.e., up to a total of CHF 4 billion) for 2019 and 2020.

The newest FDF-SNB agreement (i.e., 2020 to 2025) provides net profit distributions on a sliding scale. Starting from a base distribution of CHF 2 billion, if net profits are at least CHF 2 billion, supplementary allocations of CHF 1 billion will be made if net profits reach CHF 10 billion, CHF 20 billion, CHF 30 billion, and CHF 40 billion. Therefore, the agreement allows a maximum of CHF 6 billion of net profit distributions to the Confederation and cantons.²⁹

Monetary policy has a powerful political nature, which is why the Swiss Parliament has frequently discussed the SNB's profits and how to allocate

²⁶ For example, under new FDF-SNB agreements, fixed annual distributions rose from CHF 1 billion in 1991 to CHF 1.5 billion to CHF 2.5 billion and CHF 2.9 billion, only to fall to CHF 1 billion in 2016. Abegg, Baltensberger, et al., *Ibid.*

²⁷ Net profit allocations to the Confederation and cantons can be made until the Distribution Reserve is reduced to zero.

²⁸ Swiss National Bank, FDF, and SNB Enter into New Profit Distribution Agreement, November 10, 2016, https://www.snb.ch/en/mmr/reference/pre_20161110/source/pre_20161110.en.pdf (Accessed on August 10, 2022).

²⁹ Swiss National Bank, FDF and SNB Enter into New Profit Distribution Agreement, January 29, 2021, https://www.snb.ch/en/mmr/reference/pre_20210129/source/pre_20210129.en.pdf (Accessed on August 10, 2022).

them. Numerous proposals have been made, with no objective solution in sight. If 2022 proved anything, it was that neither SNB profits nor distributions to the Confederation and cantons are guaranteed.

Organizational Structure

The SNB is divided into three departments, whose main organizational units are located at the Zurich and Berne head offices.³⁰ Each department has been assigned specific activities and responsibilities and is headed by a Governing Board member.³¹

Bank Council

The Bank Council oversees and controls the SNB's organization and conducts the nation's monetary policies. Its responsibilities include (among other things) overseeing the SNB's investment assets, risk management practices, the appointment of affiliate management members, and staff remuneration. It consists of 11 members, of which six are appointed by the Federal Council and five by an annual shareholders' meeting in April. Members are elected for four-year terms, and their entire duration of service cannot exceed 12 years. Eligibility criteria include "knowledge of the fields of banking and financial services, business administration, economic policy, or an academic field."³² As with the Governing Board (see next section), Bank Council members must be Swiss citizens and have impeccable reputations. A *Memorandum of Understanding* between the FDF and the SNB ensures that the Bank Council members are geographically, linguistically, and gender-balanced, with specialized expertise, abilities, and qualities essential to its proper functioning.³³

³⁰ Department I is responsible for economic affairs, international monetary cooperation, statistics, legal services, compliance, human resources, and premises and technical services. Department II is responsible for financial stability, cash, accounting, controlling, risk management, and operational risk and security. Finally, Department III is responsible for money market and foreign exchange, asset management, banking operations, information technology, financial market analysis, and Singapore.

³¹ SNB, Organizational Chart as of January 1, 2022, <https://www.snb.ch/en/mmr/reference/organigramm/source/organigramm.en.pdf> (Accessed on August 23, 2022).

³² National Bank Act, Art. 40, Ibid.

³³ Memorandum of Understanding between the Federal Department of Finance and the Swiss National Bank, March 22, 2011, https://www.snb.ch/en/mmr/reference/pre_20110322/source/pre_20110322.en.pdf (Accessed on August 10, 2022).

Governing Board

The Governing Board is the SNB's top management and executive body. It is composed of a chairperson, vice-chairperson, and third member. This Board has overall responsibility and accountability for monetary policy, investments, currency reserve composition, and cooperation with other central banks and international organizations, such as the IMF, BIS, FSB, OECD, and Network for Greening the Financial System (NGFS). In addition, the Governing Board represents the SNB in public. Upon recommendations from the Bank Council, the Federal Council elects Governing Board members for six-year terms.³⁴ The Enlarged Governing Board, composed of the Governing Board and Alternate (Deputy) Members, is responsible for the SNB's operational management. As a rule, the Governing Board holds two ordinary meetings per month, though extraordinary meetings can be called quickly and at any time.³⁵

Audit Board

The Audit Board is elected annually at the Shareholders' Meeting and consists of one or more natural persons or legal entities. It is responsible for ensuring that SNB accounting complies with statutory requirements.

The SNB's Monetary Policy Instruments

The arsenal of monetary instruments at the SNB's disposal is broadly defined in the NBA and the *National Bank Ordinance*.³⁶ Further details are spelled out in the *Guidelines of the Swiss National Bank on Monetary Policy Instruments*³⁷ and *Investment Policy Guidelines of the Swiss National Bank*.³⁸

³⁴ If a member prematurely leaves the Governing Board or is removed, a new member is elected for the remainder of the unexpired term. Members can be removed if they no longer fulfill the requirements for exercising the office or if they commit a grave offense. Re-election is possible.

³⁵ Swiss National Bank, Regulations on the Organisation of the Swiss National Bank, Art. 19, <https://www.snb.ch/en/mmr/reference/organisationsreglement/source/organisationsreglement.en.pdf> (Accessed on August 10, 2022).

³⁶ National Bank Act, Art. 9 to 13 and National Bank Ordinance, Ibid.

³⁷ Swiss National Bank, Guidelines of the Swiss National Bank on Monetary Policy Instruments: of March 25, 2004 (as of 1 July 2021), (https://www.snb.ch/en/mmr/reference/snb_legal_geldpol_instr/source/snb_legal_geldpol_instr.en.pdf) (Accessed on August 10, 2022).

³⁸ Swiss National Bank, Investment Policy Guidelines of the Swiss National Bank: of May 27, 2004 (as of 1 January 2022), (https://www.snb.ch/en/mmr/reference/snb_legal_richtlinien/source/snb_legal_richtlinien.en.pdf), (Accessed on August 10, 2022).

Guidelines of the Swiss National Bank on Monetary Policy Instruments describes the tools, terms, and procedures used by the SNB to implement monetary policies. *Investment Policy Guidelines of the Swiss National Bank* define the scope, policy principles, eligible asset categories, and risk control processes of the SNB's investment activities. The Bank's *Terms of Business* and *Instruction Sheets*³⁹ complement and enhance these *Guidelines*.

The *Terms of Business* document regulates the transactions in which the SNB may participate. Its five chapters explain:

- “General conditions,” which include authority to sign, communications, liability, charges, notice of termination, and data protection⁴⁰;
- “Payment transactions,” which include admission to the giro system, sight deposit account conditions, check transactions, collection, and cash transactions;
- “Repo transactions” concerning open market operations and standing facilities;
- “Foreign exchange and gold transactions,” and
- “Custody services.”

The *Instruction Sheets* are more detailed than the *Guidelines*, describing specific policies, conditions, and procedures for:

- Open market operations;
- The intraday (liquidity) facility;
- The liquidity-shortage financing facility;
- The custody cover account;
- Collateral eligible for SNB repos, and
- Sight deposit accounts.

The Bank's monetary tools are used to provide liquidity to the money market or absorb it and allow the SNB to act as a lender of last resort for individual Swiss banks and the banking system.⁴¹

³⁹ Swiss National Bank, *Terms of Business & Instruction Sheets*, https://www.snb.ch/en/iabout/snb/legal/id/snb_legal_terms (Accessed on August 14, 2022).

⁴⁰ The SNB may adopt “special conditions” for some business transactions, which would take precedence over the *Terms of Business*. Swiss National Bank, *Terms of Business 2019*, Ibid.

⁴¹ In the future, the SNB expects to implement monetary policy via the liability side of its balance sheet and hence absorb liquidity or remunerate it, in which case, the liquidity provision would not be the central bank's primary way to implement monetary policies.

The SNB's Main Monetary Tools⁴²

The SNB conducts monetary policies using foreign exchange and swap transactions, open market operations, standing facilities, and other financial tools.

Foreign Exchange Market Purchases, Sales, and Swaps

The SNB conducts its foreign exchange market interventions in the spot and forward markets. Spot-market interventions affect the Swiss franc's international value and the nation's monetary base. Purchases of foreign currencies (with Swiss francs) simultaneously tend to lower the Swiss franc's value, increase currency reserves, and enlarge the nation's monetary base. By contrast, Swiss franc purchases (with foreign currencies) raise the currency's value, reduce the Swiss monetary base, and deplete the SNB's foreign-currency assets.

Pressure on the Bank to actively manage exchange rates is understandable due to exports' critical role in the Swiss economy. Currency appreciation raises export prices relative to foreign markets and lowers import prices, forcing Swiss industries to improve productivity to compete. In the extreme, it could endanger the nation's international competitiveness and living standards. Therefore, the central bank needs to use this instrument wisely.

Economic logic tells us that no country can simultaneously control its money supply and nominal exchange rate while allowing free international trade and capital mobility. This tradeoff is referred to as the Impossible Trinity. Caution is necessary because, in times of strong short-term capital flight to the Swiss franc, intervention might increase the nation's monetary base and significantly raise inflation, inflationary expectations, and foreign currency risk.

The SNB also engages in foreign exchange swaps to change money market liquidity. Foreign exchange swaps are combinations of spot and forward transactions, where the buy and sell rates for a currency and the transactions' maturity are established in advance.⁴³

⁴² Swiss National Bank, Guidelines of the Swiss National Bank on Monetary Policy Instruments: 2. Monetary policy instruments, https://www.snb.ch/en/mmr/reference/snb_legal_geldpol_instr/source/snb_legal_geldpol_instr.en.pdf (Accessed on August 10, 2022).

⁴³ For example, on January 1, the SNB might transact with UBS in the spot market to acquire US\$100 million for CHF 100 million at an exchange rate equal to CHF 1/US\$ (i.e., US\$1/CHF) and simultaneously agree to sell back those dollars on June 30 at a fixed rate of CHF 1.01/US\$ (i.e., US\$0.9901/CHF). The CHF 0.01 per dollar differential is the effective interest on this swap transaction.

The SNB has found swaps especially valuable because of their flexible maturities and rates. The Bank typically selects maturities between one week and three months.⁴⁴ Until 1998, when repurchase agreements were introduced, swap transactions were among Switzerland's most important monetary policy instruments.

Open Market Operations

Open market transactions are among the SNB's most important monetary policy instruments, in large part because they require active, rather than passive, actions by the central bank. These monetary activities include the SNB's repurchase agreement (repo) transactions, primary issuance of SNB Bills, and secondary market purchases and sales of SNB Bills.

Repos

The Bank purchases and sells securities in the open market, thereby increasing or decreasing banks' reserve balances at the SNB, which are part of the nation's monetary base. Most of these open market transactions are done using repos and reverse repurchase agreements (i.e., reverse repos). Repos are secured transactions that manage liquidity and interest rate conditions on the money market, where maturities are less than or equal to one year. If the banking system is undersupplied (oversupplied) with liquidity, the SNB provides (absorbs) liquidity by engaging in repurchase and reverse-repurchase agreements. Under a repurchase agreement, a financial institution sells securities at one price (spot transaction) and simultaneously agrees to repurchase the same type and quantity of securities later and at a higher price (forward transaction). The interest paid is the difference between the securities' purchase and sales prices. In a reverse-repurchase agreement, the purchase and sale are opposite. This way of managing liquidity provides the SNB with a flexible means to implement monetary policies. Because of the strong linkages among money market interest rates of different maturities, the SNB tries to influence the yield curve via changes in short-term interest rates.

In the past, the SNB's daily money market operations offered or absorbed liquidity for specific counterparties and the market as a whole. The repo maturities varied from overnight to several months, but in general, the SNB

⁴⁴ Swiss National Bank, Questions and Answers on Foreign Exchange Swaps, https://www.snb.ch/en/ifer/public/qas/id/qas_swaps#t12 (Accessed on August 11, 2022).

used the one-week duration. Daily activity allowed the SNB to adjust money market liquidity and interest rates on a near-continuous basis.

SNB Bills

SNB Bills are tradable, interest-bearing debt certificates with maturities of up to one year. The SNB can issue them at auctions with its counterparties⁴⁵ or through private placements.⁴⁶ First issued in 2007, their purpose was to absorb Swiss franc liquidity. Afterward, the SNB purchased SNB Bills on the secondary market to increase liquidity.

Sizeable foreign currency purchases by the SNB led to excessive increases in banking sector liquidity during the summers of 2010 and 2011, but the Bank issued SNB Bills and absorbed the liquidity quickly. Because the SNB has taken strong measures to reduce the Swiss franc's value, it suspended new issues of SNB Bills in August 2011, except for test-case operations.⁴⁷

Standing Facilities

Standing facilities provide liquidity for very short-term funding problems, mainly connected to unexpected payments and receipts of financial institutions. In contrast to open market operations and foreign exchange market transactions, standing facilities are passive monetary policy tools because the SNB sets only the conditions under which eligible financial institutions, such as banks and insurance companies, can borrow from it. These facilities offer banks the ability to bridge unexpected liquidity gaps.

The *Intraday Facility* extends interest-free liquidity to counterparties under the condition that funds are repaid on the same working day. Because these loans are on a repo basis, they are secured with eligible collateral equal to at least 110% of the intraday funds extended. Swiss-franc settlement is handled via Swiss Interbank Clearing (SIC), and foreign exchange transactions are cleared through Continuous Linked Settlement (CLS).

⁴⁵ These auctions use either a volume tender or variable rate tender procedure. Each participant submits the amount of SNB bills it is willing to accept at a price defined by the issuer, in the volume tender procedure. In the variable rate tender procedure, each participant submits the amount of the SNB bills it is willing to accept and the price it is ready to pay.

⁴⁶ Swiss National Bank, Issuance of SNB Bills, https://www.snb.ch/en/ifor/finmkt/operat/id/finmkt_bills (Accessed on August 10, 2022).

⁴⁷ Swiss National Bank, Glossary, SNB Bills, https://www.snb.ch/en/srv/id/glossary#glossary_bills (Accessed on August 10, 2022).

The *Liquidity-Shortage Financing Facility* funds financial institutions needing liquidity until the next working day. The SNB limits borrowers who deposit collateral in a secure *Custody Cover Account* “SNB” with SIX SIS Ltd (SIS). This collateral must be maintained constantly at 110% of the limit, with compliance monitored by SIS and account management handled by the borrower. The interest rate charged influences the liquidity that financial institutions set aside. Using this channel as a financing source is relatively expensive because the special lending rate equals the SNB’s policy rate plus a special premium of 0.5%. Regardless, the special lending rate must always be at least 0.0%.⁴⁸ In 2021, the SNB’s “policy rate” was at minus 0.75%, and the interbank market rate, SARON (Swiss Average Rate Overnight), was near the policy rate. Due to the premium of 0.5%, liquidity from the *Liquidity-Shortage Financing Facility* was thus more expensive than the interbank market, thereby making the Bank a genuine “lender of last resort.”⁴⁹

The SNB’s Other Monetary Tools⁵⁰

The SNB has several other tools to influence monetary policy. The most noteworthy are:

- Changing the interest on bank sight deposits at the SNB,
- Derivative transactions, and
- Credit transactions.

Interest (Positive or Negative) on Banks’ Sight Deposits

The SNB is permitted to accept interest-bearing and non-interest-bearing deposits of banks under conditions it determines.⁵¹ To make Swiss franc investments less attractive and dampen capital inflows that appreciate the Swiss franc, the SNB introduced negative interest rates on banks’ sight deposits. Under normal conditions, it is zero or positive.

⁴⁸ On July 29, 2021, the special rate equaled 0.00%, while SARON equaled -0.73%. Swiss National Bank, Current Interest Rates and Exchange Rates, https://www.snb.ch/en/iabout/stat/statrep/id/current_interest_exchange_rates#t2 (Accessed on August 10, 2022).

⁴⁹ Swiss National Bank, Instruction Sheet on the Liquidity-Shortage Financing Facility (Special-Rate Repo Transactions), 4.2 Setting the Special Rate, https://www.snb.ch/en/mmr/reference/repo_mb25/source/repo_mb25.en.pdf (Accessed on August 10, 2022).

⁵⁰ Swiss National Bank, Guidelines of the Swiss National Bank on Monetary Policy Instruments, 2.3: Other Monetary Policy Instruments, Ibid.

⁵¹ Federal Act on the Swiss National Bank, Art. 9 para 1 (a), Ibid.

Traditionally, bank sight deposits at the SNB were non-interest-earning assets, but that changed in January 2015 when the Bank began charging a 0.75% interest (i.e., imposing an interest equal to—0.75%—negative 0.75%) on them to reduce the general level of Swiss franc interest rates, compared to other currencies. Lower interest rates made Swiss franc investments less attractive, thereby easing upward pressure on the currency. This charge was only on bank deposits that exceeded defined thresholds. In March 2022, the SNB raised its policy rate to + 0.25%.⁵²

Swiss Franc Security Sales and Purchases

The SNB is authorized to purchase and sell Swiss-franc-denominated securities to execute its monetary policies.⁵³ Security purchases increase the nation's monetary base and overall Swiss market liquidity, while sales have the opposite effect. The SNB is prohibited from acquiring newly issued Confederation, cantonal, or municipality debt securities but may purchase them on secondary markets.

Derivative Purchases and Sales

The SNB is authorized to create, purchase, and sell derivatives with underlying assets, such as receivables, securities, precious metals, or currency pairs. While these actions do not directly affect Swiss franc-spot market prices, arbitrage between the spot and forward markets can cause liquidity changes.⁵⁴

Credit Transactions

The SNB is authorized to lend to banks and other financial intermediaries so long as the borrower commits sufficient *eligible collateral*. Consequently, *collateral eligibility* and *counterparty eligibility* are critical factors in setting Swiss monetary policies (see the following sections).⁵⁵

⁵² Swiss National Bank, Chronicle of Monetary Events 1848–2022, https://www.snb.ch/en/iabout/snb/hist/id/hist_wpc#t16 (Accessed on August 16, 2022).

⁵³ Federal Act on the Swiss National Bank, Art. 9 para. 1 (c), *Ibid.*

⁵⁴ *Ibid.*, Art. 9 para. 1 (c) and (d).

⁵⁵ See Swiss National Bank, Instruction Sheets, *Ibid.*

Collateral Eligibility Policies

The SNB determines collateral eligibility using a wide variety of factors, such as the issuer's credit quality and domicile, and the collateral's currency-denomination, volume, liquidity, and ability to be delivered through the SIS. For instance, eligible repo securities must be issued by central banks, public sector entities, international or supranational institutions, multilateral development banks, or approved private sector parties. Typically, securities issued by financial institutions are not eligible, except those sold by mortgage-related financial entities, such as Swiss Pfandbrief institutions. Collateral not denominated in Swiss francs must be in Euro-area euros, US dollars, British pounds, Danish kroner, Swedish kronor, or Norwegian kroner. The credit rating of the securities and issuers' domicile country must be at least at the AA-/AA3 level. Eligible collateral's liquidity is determined by whether it is traded on a public exchange. The SNB's collateral framework for accepted currencies is one of the most liberal among central banks, but it sets very high rating standards.

The significance of these collateral policies was especially apparent during the financial crisis from 2007 to 2009, when the price discovery process for securities became problematic, leading to liquidity shortages and economic contraction. In the US dollar market, significant and sudden discounts on repo collateral led to failures in the money market, thereby impairing the ability of banks to lend. By contrast, the secured Swiss interbank market kept functioning during the crisis because the collateral backing repo transactions corresponded to that accepted by the SNB in its repo operations. This highly credible collateral policy resulted in SNB-eligible collateral remaining the standard for secured interbank transactions in the Swiss franc money market. Switzerland's strict collateral policy had substantial advantages because it reduced the need for discounts with standardized repo transactions—even during market turbulence when other money markets were malfunctioning.⁵⁶ Additionally, it set clear incentives for banks to hold high-quality, liquid assets.

Eligible Counterparties

Domestic and non-resident financial institutions are eligible to engage in SNB repo transactions as long as they hold sight deposits at the SNB and their transactions align with the SNB's monetary policies. Sight deposits at

⁵⁶ It was also the standard before the crisis and has remained so. Eligible collateral with central banks of other countries was of much lower quality than what interbank markets would accept.

the SNB are required because the SIS and SIC settle and clear repo transactions. In 1999, the SNB opened access to its monetary policy operations and standing facilities to banks domiciled outside Switzerland. The original intention of allowing non-resident financial institutions to access the SNB's monetary policy operations remotely was to reduce the dependence on the few large Swiss financial institutions and improve the general liquidity distribution. The SNB applies the same access policy to open market operations and standing facilities.

Settlement of Repo Transactions and SNB Bill Issues

The SIS settles repo and SNB Bill transactions on a *delivery-versus-payment (DvP)* basis, which means that, simultaneously, securities are delivered to the lender's SIS account, and funds are credited to the borrower's SIC account. Counterparty risk is further reduced by marking these securities to market twice daily and covering valuation discrepancies with cash or acceptable securities. Reversing these transactions involves debiting the borrower's account and crediting the lender's account, with the applicable interest rate included.

Emergency Liquidity Assistance

The SNB is authorized to extend emergency assistance to one or more domestic banks on an emergency basis. This liquidity assistance is extended only to financial institutions or a group of financial institutions essential to Switzerland's financial stability. Borrowers must be solvent and able to post sufficient collateral.

Communication

An important, though subtle monetary policy channel is how the SNB communicates its economic outlook to the public. The financial community has come to recognize that even small changes in short-term interest rates can significantly affect the entire yield curve, depending on a central bank's credibility. By publishing its opinions on current and expected future economic conditions, the SNB has tried to smooth the transition to new monetary policies by making them more transparent and, thereby, reducing volatile market swings due to misinformation and rumors. Suasion power should not be underestimated. It has peaked during times of substantial economic turmoil, volatile exchange rate fluctuations (e.g., 2010, 2011, and 2015),

appointments of Bank Council members, and when members of the SNB's Governing Board resigned (e.g., in 2012).

Minimum Reserves

Before 2004, the *NBA* allowed the SNB to set reserve requirements for Swiss banks' short-term deposits. By varying the minimum reserve requirements, the SNB could directly influence the banking system's ability to create money and credit without changing the level of interest rates via open market operations or foreign exchange market intervention. The reserve requirement tool proved to be rather heavy-handed because it influences all banks regardless of their liquidity positions. Furthermore, increasing minimum reserve requirements might force banks to meet them by refinancing during unfavorable market conditions. It might also lead to distortions due to reallocations of banks' balance sheet positions.

The *NBA's* reform in 2004 came with a new set of minimum reserve requirements and a stipulation that minimum reserves could not exceed 4% of banks' short-term Swiss-franc-denominated liabilities.⁵⁷ Bank assets that qualify as "eligible reserves" include coins, banknotes, and sight deposits held at the SNB. In 2021, the minimum reserve requirement was 2.5% of customer sight deposits with maturities up to 90 days and 20% of customer savings deposits and investments. It is calculated by dividing "eligible liquid assets" (i.e., cash in the vault and sight deposits at the SNB) by "relevant liabilities" at the end of the three months preceding the reporting period. "Relevant liabilities" include short-term liabilities in Swiss francs (up to 90 days) plus a portion of customer savings and investments during the three-month reporting period.⁵⁸ This requirement ensures that Swiss banks have enough funds available and to protect "privileged customer claims" (i.e., sight deposits up to CHF100,000). The liquid assets ratio is updated monthly.⁵⁹ Under the new rules, minimum reserves are no longer required on interbank

⁵⁷ Bank for International Settlements, Switzerland (CHF), https://www.bis.org/mc/currency_areas/ch.htm (Accessed on August 11, 2022). Also, see The Federal Council, Ordinance to the Federal Act on the Swiss National Bank (National Bank Ordinance, NBO), January 1, 2021, Ibid.

⁵⁸ Ibid. Relevant liabilities are "(a) those arising from money market instruments that cannot be attributed to banks or customers and mature within three months; (b) liabilities vis-à-vis banks payable on sight or maturing within three months; (c). 20% of liabilities arising from customer time deposits (excluding tied pension fund monies); (d) liabilities arising from customer deposits payable on sight or maturing within three months (including call money), and € liabilities arising from medium-term bank-issued notes maturing within three months.

⁵⁹ Bank for International Settlements, Switzerland (CHF), Ibid. Also, see The Federal Council, Ordinance to the Federal Act on the Swiss National Bank (National Bank Ordinance, NBO), January 1, 2021, Ibid.

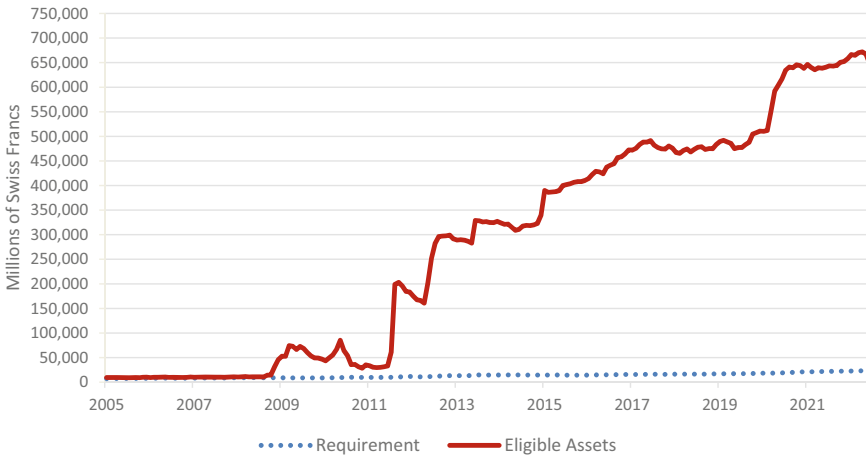


Fig. 7.1 Eligible reserve assets and minimum required reserves: January 2005 to June 2022 (Source SNB, SNB Data Portal, <https://data.snb.ch/en/topics/banken#!/cube/bamire> [Accessed on August 25, 2022])

liabilities if depositing banks are subject to minimum reserve requirements, independently.

Figure 7.1 shows the change in Swiss banks' *eligible assets* relative to the minimum required reserves required from 2005 to May 2022. The sharp increase after 2008—particularly after 2011—has been due to the expansion of sight deposits banks held at the SNB, while the volume of banknotes and coins in circulation has remained relatively stable. In 2021, Swiss banks held eligible assets approximately 30 times higher than the required minimum.

SNB Monetary Targets and Policies Since 1944

Three primary factors influence a central bank's ability to achieve its monetary goals:

1. The nation's exchange rate system;
2. Money supply targets, and
3. Interest elasticity of demand for credit.

These factors are so intricately intertwined that one cannot be discussed without the others. A central bank sacrifices considerable monetary independence by fixing the exchange rate and, by targeting the money supply, loses significant control over domestic interest rates and currency values.

Table 7.1 Summary of Swiss National Bank monetary targets since 1944

Date	SNB monetary targets
July 1944–August 1971	Bretton Woods Agreement parity exchange rates
December 1971–January 1973	Smithsonian Agreement parity exchange rates
January 1973–September 1978	Short-term money supply growth rate
October 1978–December 1979	Swiss franc—German mark exchange rate
January 1980–December 1990	Short-term adjusted monetary base and money supply growth rates
January 1991–December 1999	Medium-term seasonally adjusted monetary base and money supply growth rates
January 2000–September 2011	Three-month Libor
September 2011–January 2015	Swiss franc—euro exchange rate and three-month Libor
January 2015–June 2019	Three-month Libor and SNB sight deposit rate, with the exchange rate situation taken into account. De facto exchange rate targeting
June 2019–June 2022	The SNB's "policy target rate," while taking account of the exchange rate situation. De facto exchange rate targeting

Source Swiss National Bank, "Chronicle of monetary events 1848–2022," https://www.snb.ch/en/i/about/snb/hist/id/hist_wpc [Accessed on August 20, 2022]

Table 7.1 provides an overview of SNB's monetary policy targets since 1944. While the SNB considers all relevant factors when determining its monetary policies, tradeoffs have forced the Bank to put its operational emphasis on meeting targets tied to short-term interest rates, exchange rates, or monetary aggregates. Table 7.1 reflects the SNB's search for an effective monetary target.

Bretton Woods and Smithsonian Agreement Parity Rates: July 1944 to January 1973

From 1944 to 1973, Switzerland was part of the Bretton Woods System (July 1944 to August 1971) and the *Smithsonian Agreement* (December 1971 to January 1973). Both committed the SNB to restrict Swiss franc exchange rate movements to a narrow band around a parity rate tied to the US dollar.⁶⁰ By gearing its monetary policies to offset international currency market forces, the SNB relinquished virtually all control over the domestic money supply during this period. For more than two-and-a-half decades, until 1973,

⁶⁰ The Bretton Woods system established the band at $\pm 1\%$ relative to the US dollar, and the Smithsonian Agreement widened it to $\pm 2.25\%$.

Switzerland's inflation rate and nominal interest rates were influenced more by external economic events than by the discretionary policies of the SNB.

The gradual erosion of trust in the Bretton Woods and Smithsonian Agreements put upward pressure on the Swiss franc. Their abandonment in 1971 and 1973, respectively, and rising US inflation intensified appreciation pressures. To discourage foreign capital inflows and curtail significant increases in the nation's money supply, the SNB imposed, almost immediately after the collapse, a 100% minimum reserve requirement on increases in banks' net deposit liabilities to non-residents. This restriction was followed, in 1971, by a prohibition on interest payments to non-residents.

As upward pressure on the franc continued, the SNB imposed measures that were even more decisive.⁶¹ In 1972, it prohibited non-residents from purchasing Swiss-franc-denominated, interest-earning securities (i.e., bills, notes, and bonds) and Swiss real estate. Loans to Swiss non-banks located outside Switzerland required special permission, and a penalty charge of 2% per quarter was imposed on increases in non-residents' Swiss franc deposits.⁶²

Short-Term Money Supply Growth Rate: January 1973 to September 1978

With the dissolution of the *Smithsonian Agreement* in 1973, the Swiss franc was free to float against all major currencies, giving the SNB full control over its monetary base. The Bank used its powers to fight inflation by vigorously enacting restrictive monetary policies. As a result, the nation's inflation rate fell from 8.8%, 9.8%, and 6.7% in 1973, 1974, and 1975, respectively, to 1.7%, 1.3%, and 1.0% for the years 1976 to 1978, respectively, after which it began to increase (see Fig. 7.2).

In 1974, the SNB raised the penalty rate on non-resident deposits to 3% per quarter. Upward pressure on prices eased in mid-1975, allowing the Bank to relax some of its restrictions, but a wave of speculative capital inflows in mid-1977 prompted the imposition of new ones. In early 1978, the SNB put restrictions on inflows of foreign banknotes, increased the penalty rate on non-resident Swiss franc deposits from 3% per quarter to 10% per quarter, and prohibited interest payments to foreign monetary authorities on their Swiss franc deposits. Despite these measures, between January 1973 and December 1978, the Swiss franc's real effective exchange rate increased by

⁶¹ Benedicte Vibe Christensen, *Switzerland's Role as an International Financial Center*, International Monetary Fund, July 1986, p. 21.

⁶² *Ibid.*



Fig. 7.2 Swiss consumer price inflation: July 1944 to July 2022 (Source SNB, SNB Data Portal, <https://data.snb.ch/en/topics/uvo#!cube/plkopr> [Accessed on August 25, 2022])

34%.⁶³ From August 1971, when the Bretton Woods System collapsed, to December 1978, the increase was significantly above that rate (i.e., 41%).

For the first five years after the collapse of the Bretton Woods system, the SNB's operating policies targeted the money-stock growth rate. Still, it intervened occasionally in the spot US dollar/Swiss franc market to reduce or reverse exaggerated currency fluctuations. With dramatic increases in the nation's exchange rate, the SNB temporarily suspended, in October 1978, its policy of targeting monetary growth.⁶⁴

Swiss Franc—German Mark Exchange Rate: October 1978 to December 1979

An appreciating Swiss franc put the SNB on the horns of a dilemma. Reducing the value of the Swiss franc by intervening in the foreign exchange markets risked increasing the domestic money supply and fueling inflation. Still, refraining meant pricing many Swiss products out of international markets. Realizing the long-term futility of imposing penalties and other restrictions on foreign capital inflows, the SNB relaxed its restraints in 1979 and elevated exchange rate levels from their penultimate position as operating targets to a top position as policy goals. In particular, the Bank announced

⁶³ Bank for International Settlements, Real Narrow Effective Exchange Rate for Switzerland [RNCHBIS], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/RNCHBIS> (Accessed on August 14, 2022).

⁶⁴ Christensen, Switzerland's Role as an International Financial Center, p. 21.

its intention to keep the German mark's price significantly above 0.80 Swiss francs (i.e., keep the Swiss franc's value significantly below 1.25 German marks). Important to note is, at the time, the SNB did not perceive this policy shift as a permanent or long-term change in strategy but rather as a necessary (and hopefully temporary) adjustment during a time of excessive market turbulence.

Due to substantial foreign currency inflows, massive intervention was needed. The resultant increase in Switzerland's monetary base, combined with the second oil price shock, lifted Swiss inflation from 1.0% in 1978 to 3.6% in 1979 and to continuously higher levels in the early 1980s. A short break came in 1979 when the German mark traded significantly above the SNB's floor target of CHF 0.80. This buffer allowed the Bank to reduce liquidity and swiftly return to its policy of targeting monetary aggregates. Exchange rate targets were no longer prescribed, but the SNB's monetary policies paid close attention to their movements.

Short-Term Adjusted Monetary Base and Short-Term Money Supply Growth Rates: January 1980 to December 1990

With reduced pressure on the franc, the SNB felt justified in 1980 to re-establish a money supply target (after one had not been made for 1979) that would not endanger the exchange-rate target it had announced in October 1978. Controlling the money supply proved more complicated than expected. As a result, the SNB switched later in 1980 from its short-term money supply target to a monetary base target. Inflation rates, which averaged 5.4% from 1980 to 1982, moved progressively lower from 1983 to 1985 and fell below 1.0% in 1986 (see Fig. 7.2).

Switzerland's M1 money supply expanded by nearly 8% between the beginning of 1985 and October 1987 (see Fig. 7.3).⁶⁵ One reason for this increase was the SNB's accelerated foreign exchange market intervention, as it fought against the US dollar's depreciation, starting in 1985.

In 1987, several significant events caused the SNB to overstimulate the Swiss economy and fuel inflation. For one, the SNB underestimated the

⁶⁵ Swiss National Bank, Monetary Aggregates M1, M2, and M3, [https://data.snb.ch/en/topics/snb#!/cube/snbmonagg?fromDate=1985-01&toDate=1988-12&dimSel=D0\(B,VV\),D1\(B,S0,ET,GM1,S1,GM2,T,GM3\)](https://data.snb.ch/en/topics/snb#!/cube/snbmonagg?fromDate=1985-01&toDate=1988-12&dimSel=D0(B,VV),D1(B,S0,ET,GM1,S1,GM2,T,GM3)) (Accessed on August 14, 2022). The SNB defines M1 as the "sum of currency in circulation, sight deposits held at banks, and deposits in transaction accounts at banks" (i.e., accounts used mainly for payments). Only positions denominated in Swiss francs and held by residents are considered.

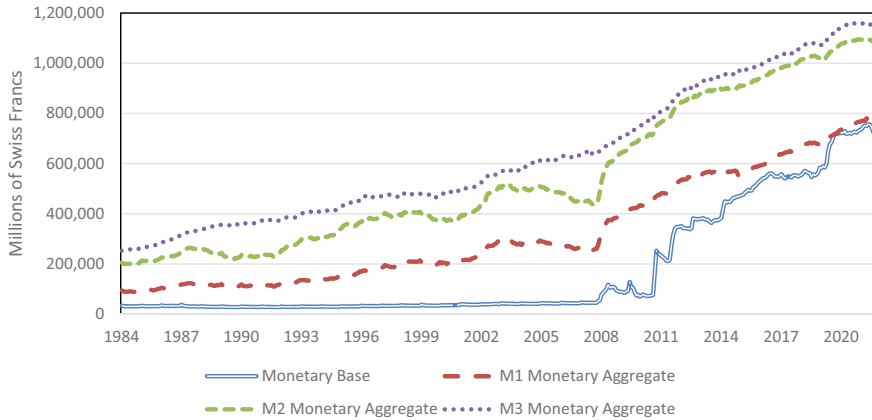


Fig. 7.3 Monetary aggregates: Monetary base (M0), M1, M2, and M3—1984 to July 2022 (Source SNB, SNB Data Portal, <https://data.snb.ch/en/topics/snb#!/cube/snbmonagg> [Accessed on August 25, 2022])

impact of the SIC's⁶⁶ introduction and changes in bank liquidity requirements on bank demand for central bank money (i.e., reserves). The result was an increase in Switzerland's money multiplier. A second cause of the SNB's looser-than-needed monetary policies was its overreaction to the US stock market crash in October 1987. Fearing recessionary contagion, as many central banks did, the SNB pursued monetary policies to support domestic growth and employment. Switzerland's monetary base's growth rate doubled from about 2% in 1986 to 4% in 1987. By mid-1988, recessionary fears had receded, and the liquidity effects of the SIC and new requirements were better understood, which left the SNB with the job of reigning back the inflationary potential of its 1987 policies.

In 1988, the SNB responded to a looming inflationary threat by curtailing the monetary base's growth rate, leading to a dramatic rise in interest rates and an appreciation of the Swiss franc. Switzerland's three-month interbank rate jumped from 3.2% in 1988 to 9.0% in 1990.⁶⁷ This sharp move precipitated a severe recession and led to a decline in real estate prices that lasted until 1997. The downturn was the longest in Switzerland's post-World War II experience. Inflation fell, albeit slowly, but unemployment rose to

⁶⁶ The SIC is an automated, real-time, interbank gross-settlement system for Swiss franc transactions. It enables banks to reduce their daily balances at the SNB. Introduced in 1987, the SIC led to a shift of liquidity demand, which broke the historical link between changes in Switzerland's monetary base and growth in its money supply aggregates, causing money supply changes to become less reliable monetary policy indicators.

⁶⁷ IMF, Swiss Franc, Three-Month Libor, <https://data.imf.org/?sk=388dfa60-1d26-4ade-b505-a05a558d9a42&csId=1479331931186> (Accessed on August 14, 2022).

disturbingly high levels. Interest-sensitive investment sectors were hit the hardest, such as construction, machinery, and equipment.

Medium-Term Adjusted Monetary Base: January 1991 to December 1999

Criticisms of the SNB's laxness combined with problems gauging banks' demand for money caused the Bank to change its operational goals in January 1991 to medium-term (i.e., three-to-five years) growth rate of the adjusted monetary base. Swiss interest rates trended downward from 1990 to 1994 (see Fig. 7.4) mainly due to reduced inflationary expectations and recession-induced decreases in spending and borrowing demand, but other factors also played significant roles. Sizable volumes of international capital flowed to Switzerland during 1992 due to turmoil surrounding England and Italy's exit from the European Exchange Rate Mechanism. These inflows were reinforced by fears following the terrorist attacks in New York City in 1993 and the Mexican Tequila Crisis in 1994. Furthermore, Switzerland's strong current account balance and reductions in German interest rates helped to stabilize Swiss interest rates at lower, more normal levels.

Switzerland's 1991 recession confronted the SNB with a quandary. Unemployment rates increased much above acceptable levels and averaged nearly 8% for the year, but the SNB was not convinced that inflationary fears had been fully extinguished. Bank officials worried that monetary stimulation would reduce Switzerland's real interest rates even further below their German counterparts, resulting in a shift of financial capital that would lower the Swiss franc's value and exacerbate domestic inflation.

When the Swiss recovery began during the second quarter of 1993, it was not strong enough to raise GDP for the entire year, and sluggish growth was expected to persist well into 1996. In general, there were problems on several levels. Spending lacked a broad base because consumption was weak due to a general lack of household confidence, and public expenditures were tepid due to budget deficit concerns. Only export orders were robust. Furthermore, monetary policy remained cautiously passive, and Switzerland lost momentum on structural changes in public policy, such as the consolidation of public finances and various social policy programs and the removal of domestic and international barriers to market access.

Because of the combined effects of Switzerland's lackluster economic growth, the Swiss franc's strength, and an unemployment rate that had increased from 5.8% in 1995 to 6.9% in 1996, businesses and unions put the SNB under considerable pressure to refuel money supply growth. They

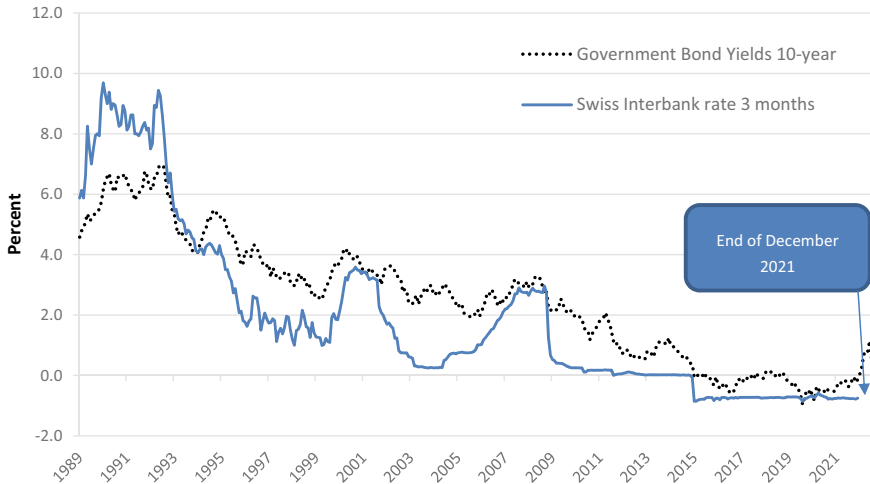


Fig. 7.4 Short-term and long-term Swiss interest rates: 1989 to June 2022 (Source Organization for Economic Co-operation and Development, Long-Term Government Bond Yields: 10-year: Main (Including Benchmark) for Switzerland [IRLTLT01CHM156N], retrieved from FRED, Federal Reserve Bank of St. Louis, <https://fred.stlouisfed.org/series/IRLTLT01CHM156N>, [Accessed on August 24, 2022]. Organization for Economic Co-operation and Development, 3-Month London Interbank Offered Rate [Libor], based on Swiss Franc [IR3TIB01CHM156N], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/IR3TIB01CHM156N>, [Accessed on August 24, 2022])

argued that the Swiss economy was fully able to handle more liquidity without a resurgence of inflation. The yield curve turned moderately positive, but the growth of Switzerland's monetary base remained below targeted levels, causing inflationary fears to recede. There was every reason to believe the SNB would continue its conservative monetary stance,⁶⁸ generating a premium on its caution. In short, the Bank did not want to repeat mistakes of the 1980s by raising domestic inflation and refueling the country's ever-more intransigent inflationary expectations.

Despite its success at keeping the average inflation rate at 2.8% from 1975 to 2000, the strategy of using monetary aggregates as intermediate policy indicators became problematic and was openly criticized during the second half of the 1990s. Success from using monetary indicators as operating targets depends on three factors. First, it requires a clear correlation between the nation's money supply and inflation, and this relationship depends on a stable

⁶⁸ A short-term spike in inflation during 1995 was anticipated due to the implementation of the value-added tax (VAT). The SNB permitted the money supply to rise slightly faster to accommodate the new tax, but this increase played no significant role in the central bank's overall strategy during the 1990s.

demand for the monetary aggregates used as intermediate monetary targets. Unfortunately, this relationship no longer held for Switzerland's monetary base, perhaps, due to the unstable money demand caused by innovations in the financial sector and payment systems.

Second, the central bank needs almost complete control over the targeted monetary aggregates to reach the inflation targets. Monetary aggregates, such as M1 or M2, are challenging to control due to influences beyond a central bank's monetary policy.

Finally, the monetary aggregate must be relatively insensitive to interest rate fluctuations. Ultra-high interest elasticity and an unstable demand for money impair the stabilizing effects of monetary policy on the real economy. If the correlation between inflation and money supply growth is low, monetary policies become error-prone, and communication with the public becomes difficult. As a result, monetary policies can have undesired effects on inflationary expectations.

The euro's introduction in 1999 caused (and is continuing to cause) uncertainty in Switzerland because significant fluctuations in its value could open and close trade and investment opportunities. Any perceived weaknesses and lost confidences in the euro's management were sure to drive short-term capital toward safe havens, like Switzerland. At the same time, the euro's introduction presented Switzerland with a counter-threat that the euro might marginalize the Swiss franc in international markets. With economic power comparable to the US dollar, the euro could have prompted massive capital outflows into the euro, causing the Swiss franc to plummet in value.

Initial concerns that the euro might cause an excessive appreciation or depreciation of the franc were justified but, in retrospect, overstated, as the franc held steady against the euro from the beginning of 1999 to early 2000. This stability led some to believe the SNB was intervening to maintain an informal exchange rate band around the euro, but they were soon disabused of this notion. Perceiving an atmosphere of more robust economic growth, in 1999, the SNB contracted monetary growth rates to keep inflation near its 2% goal. The SNB's changed focus meant the Swiss franc would be allowed to fluctuate (presumably) with less regard for any particular monetary target rate or range. The exchange rate was still considered an essential monetary tool but mainly for its effect on inflation.

Three-Month Libor: January 2000 to September 2011

Starting in 2000 and continuing to 2021, the SNB's strategy for executing monetary policies has focused on three factors:

1. Defining price stability,
2. Making conditional long-term inflation forecasts, and
3. Setting its “policy” interest rate.

The Bank’s “Conditional Inflation Forecasts,” reported in the *Quarterly Bulletin*, are used on an ongoing basis to adjust the SNB’s policy rate and money market liquidity. The SNB has used this publication to communicate its inflation rate expectations to the public. In addition, transparency has been accomplished through the weekly releases of monetary policy data.

The SNB defined its price stability target in terms of the Consumer Price Index (CPI), and its new goal was similar to the past, with the desired inflation range staying between 0.0 and 2.0%. Fig. 7.2 shows Switzerland’s CPI-based inflation rates from 2000 to June 2022. Under the SNB policy, continuous adherence to the inflation rate target was unnecessary so long as its medium-term target was not jeopardized. In doing so, the SNB acknowledged that short-term deviations could occur from time to time due to serendipitous demand- and supply-side fluctuations, such as unexpected exchange rate changes and oil price shocks.

The second monetary policy prong centered on quarterly conditional inflation forecasts, which served as the focal indicators for the SNB’s interest rate decisions. They were conditional because projections were based on assumptions that the short-term rate (i.e., three-month Libor) and world economic conditions would stay constant over three years and not trigger monetary policy reactions. Three-year forecasts were chosen because this extended period gave the Bank’s monetary policies the transmission time needed to take effect. The SNB never reacted mechanically to these inflation forecasts, so this method allowed it to evaluate whether current interest rates were compatible with medium-term price stability in the context of evolving domestic and international economic and monetary conditions. Based on these forecasts, the SNB reviewed and, if necessary, adjusted its monetary policies.

An inflation forecast was published every quarter and became an essential public communication tool for the SNB. For example, if the three-year inflation forecast exceeded the 2.0% limit, the likelihood of the SNB raising interest rates during the projection period increased. By contrast, the threat of deflation prompted the Bank to increase liquidity. Targeting medium-term inflation allowed the Bank to address short-term turmoil only when it posed a potential threat to longer-term price stability.

The final prong of the SNB’s new monetary concept was setting an operational goal for its short-term “policy rate,” which varied with current and projected economic conditions and whose range of fluctuation was usually

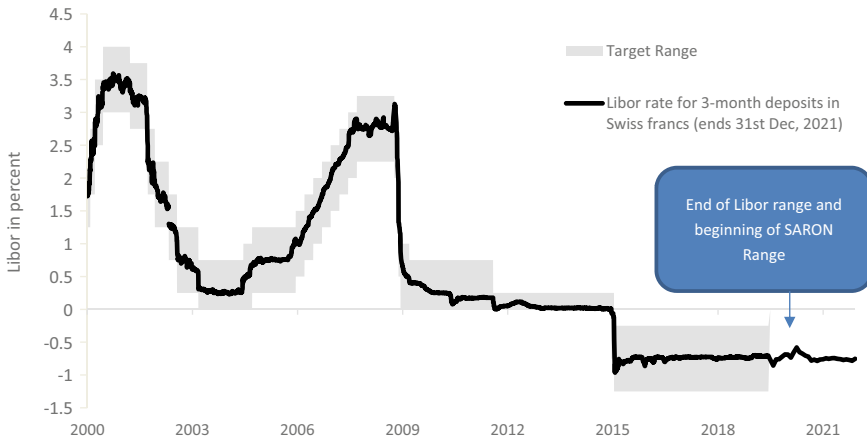


Fig. 7.5 The SNB's targeted three-month policy rate limits: January 2000 to December 2021 (Source SNB, SNB Data Portal, <https://data.snb.ch/en/topics/snb#!/cube/snbband> [Accessed on August 25, 2022]; Organization for Economic Co-operation and Development, 3-Month London Interbank Offered Rate [Libor], based on Swiss Franc [IR3TIB01CHM156N], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/IR3TIB01CHM156N>, [Accessed on August 25, 2022])

about 1.0 percentage point. The Bank announced whether it wished the rate to be at or near the low, medium, or high portion of the targeted range. Figure 7.5 shows the evolution of the SNB's targeted policy-rate range. Between January 2000 and June 2019, the Bank targeted the three-month Libor.⁶⁹

The SNB's new monetary concept allowed it to make monetary policy decisions more systematically and balanced, based on broader and deeper market information. Due to the target range's width and initial three-month target rate, the SNB gained greater flexibility in responding to financial market disruptions. Fortunately, the new strategy was successful. From 2000 to September 2011, the SNB managed to keep the average inflation at 0.90% (see Fig. 7.2).

The SNB's restrictive monetary policies relative to its European neighbors caused the franc to appreciate after 2000 and soon raised concerns about how long the Bank could deemphasize exchange rate movements. From EUR 0.62/CHF in early 2000 to a high of almost EUR 0.69/CHF in May 2002 (more than an 11% increase), the Swiss franc appreciated at a rate that caught many off guard. Part of the problem was likely due to the "unknown

⁶⁹ From September 2011 to January 2015, we will see that the SNB changed its policy focus from Libor to the Swiss franc-euro exchange rate.

unknowns” connected to the newly formed Euro Area and lack of familiar performance measures.

Contractionary Monetary Policy: 2000 to 2001

Due to growing inflationary fears, in 2000, the SNB progressively tightened monetary policy by raising its Swiss-franc Libor target. In this one year, it increased Libor from a range of 1.25–2.25% to 3.00–4.00%, while targeting the middle of this range.

Expansionary Monetary Policy: 2001 to 2004

Feeling that inflation was under control but fearing the short-term rate increases might spark an undesired appreciation of the Swiss franc, the SNB spent 2001 lowering the targeted Libor range. The rationale for pursuing looser monetary policies was consistent with the SNB’s reaction to a stock market decline in spring and summer 2001 and the unpredictable impact that the 9/11 terrorist attacks in the United States might have on the world economy. Expansionary monetary policies throughout 2001 brought the SNB’s target rate range to 1.25–2.25% by year’s end, which was a combined one-year decrease of 1.75%.

In 2002, the SNB continued reducing the three-month Libor. Slow domestic growth, an appreciating Swiss franc, and sluggish economic activity among Switzerland’s major trading partners prompted this defensive action. In May 2002, the Bank reduced its operating target by 0.5% to 0.75–1.75%, and in July, it lowered the rate again by 0.5 to 0.25–1.25%, which is where the target ended the year. Fears of recession intensified in 2003 with the outbreak of war in Iraq, causing the SNB to lower and narrow its target range to 0.0–0.75% and announce its intention to keep Libor at the lower end of this narrower range.

Contractionary Monetary Policy: 2004 to 2008

From 2004 to mid-2008, the SNB fine-tuned and tightened its monetary policies. In June 2004, the Bank re-established the broader 1.0% Libor range and set its sight on adjusting Libor to the middle of the target range of 0.0–1.0%. The range had already increased to 0.25–1.25% by year’s end. Throughout 2006 and 2007, the SNB aggressively increased its Libor target by a series of 0.25% adjustments so that, by September 2007, the target

range stood at 2.25–3.25%, which was a full 2.0% increase in just two years. Between 2004 and 2007, the Swiss franc fell against the euro, reaching a low of slightly less than EUR 0.60/CHF in October 2007. Still, from then until late 2011, its value appreciated substantially, in large part, due to the global economic and financial crisis and, after that, the European debt crisis.

Monetary Policy During the Financial Crisis: 2008 to 2009

During the summer of 2007, declining U.S. real estate prices caused banks (virtually worldwide) to suffer mounting losses on their purchases of U.S. mortgage-backed securities. Write-offs became unavoidable, and banks began hoarding liquidity due to the loss of confidence in the financial industry. In August 2007, liquidity in the U.S. interbank market dried up, causing a widespread loss of confidence among banks. Aggressive monetary measures were needed to rebuild financial trust, resist an economic downturn, and avoid deflation, but conditions worsened. December 2007 marked the official start of the U.S.'s "Great Recession," which spread rapidly to other countries.

During 2008, the global financial system was gradually engulfed by this downward economic and financial spiral. The U.S. government reacted by passing economic stimulus and stabilization bills, acquiring the shares of threatened financial institutions and companies, lending to endangered firms, providing subsidies and tax breaks to individuals and companies, and expanding social welfare programs and unemployment compensation. By September 2008, the world financial system seemed to be on the brink of collapse, signaling the need for many countries to pursue expansionary fiscal and monetary measures to rescue their nations from economic peril. These governments responded with many of the same fiscal measures used in the United States. Central banks reacted by purchasing illiquid assets to unburden bank balance sheets, increasing guarantees on savings accounts, and taking equity stakes in financial institutions considered crucial for the functioning of the entire financial system.

Switzerland's monetary reaction to the economic and financial crisis began in August 2007 and took on a strong international flavor in October 2008, when the SNB and five other major central banks made a joint statement announcing their intention to lower interest rates.⁷⁰ Figure 7.3 shows the sharp increase in Switzerland's monetary aggregates, as the Bank took active

⁷⁰ The joint statement was made by the Bank of Canada, Bank of England, European Central Bank, Federal Reserve Bank, and Sveriges Riksbank (Bank of Sweden), with support from the Bank of Japan.

measures to increase the monetary base and money supply. The SNB immediately reduced its policy rate range by 0.25%, followed by two decreases in November, amounting to 1.5%, and a 0.5% decrease in December 2008—so that its policy rate range dropped to 0.0–1.0%. The range narrowed to 0.0–0.75% in March 2009, with the SNB targeting the lower portion at about 0.25%.

Figure 7.4 shows the sharp 2.6% drop in the Swiss franc three-month Libor between October 2008 and April 2009, commensurate with an exceptionally steep increase in Switzerland's monetary aggregates (see Fig. 7.2). With prices now falling, the threat of inflation had receded, causing the SNB to feel justified by its assertive behavior.

Monetary Policy During the Sovereign Debt Crisis: 2008 to 2011

Europe's sovereign debt crisis began in 2008 when Iceland's banking system imploded, and it spread rapidly to Portugal, Italy, Ireland, Greece, Spain, and Cyprus during 2009. Greece was bailed out in May 2010, followed by Ireland (November 2010), Portugal (May 2011), Spain (June 2012), and Cyprus (June 2012). Two significant causes of the debt crises were the Great Recession and refinancing difficulties linked to sovereign nations' credit rating reductions. By late 2008, worldwide efforts by central banks to reduce interest rates and stimulate their economies caused nominal interest rates to plummet. Figure 7.4 shows the sharp increase in Switzerland's monetary aggregates, as the SNB provided liquidity to the market. Its actions were successful, derailing the threat of deflation and slowing economic growth.⁷¹ Because interest rates were already close to zero, the Bank used three unconventional measures to stabilize the financial system and stimulate the economy, namely to:

- Increase the maturity volume of repo transactions and foreign-exchange swaps;
- Purchase Swiss-franc-denominated bonds issued by private sector companies and SNB Bills, and

⁷¹ SNB, Speech at the General Meeting of Shareholders, Philipp Hildebrand, Chairman of the Governing Board, April 29, 2011 https://www.snb.ch/en/mmr/speeches/id/ref_20110429_pmh (Accessed on August 15, 2022).

- Buy foreign currency on the open market to prevent further appreciation of the Swiss franc.⁷²

Balanced monetary policies were necessary, so the SNB used a blend of tools that had both a permanent and temporary nature. Purchasing foreign exchange and Swiss franc bonds can be viewed as a one-way (i.e., permanent) increase in the monetary base. By contrast, the liquidity created by repos and currency swaps is a temporary, two-way flow because any expansion is reset at maturity. By the end of 2009, the SNB concluded that the nation's recovery was fragile and uncertain, but the threat of deflation had receded based on its conditional inflation forecasts. By mid-April 2010, escalation of the sovereign debt crises prompted widespread capital flight from tottering European nations' currencies to the Swiss franc, causing the Bank to make a renewed round of large-scale foreign exchange purchases to prevent a rapid appreciation of the Swiss franc. The resulting increase in Switzerland's monetary base might be viewed as Switzerland's version of "quantitative easing."

Volatility in the financial markets declined substantially by 2010 because of the newly introduced European Financial Stability Facility, established by the European Union (EU), European Central Bank (ECB), and the IMF. In June 2010, the SNB decided that a further appreciation of the Swiss franc no longer posed the same threat to price stability, so it terminated its foreign exchange interventions. This absence from the currency markets was short-lived.

Summer 2010 brought a bevy of financial problems for the SNB. The sovereign debt crisis in Greece and emerging debt problems of other EU member states, such as Ireland, Portugal, Spain, and Italy, combined with a politically induced U.S. debt crisis, intensified capital flight to the Swiss currency and led to a massive depreciation of the euro and the U.S. dollar against the Swiss franc. Continued appreciation of the Swiss franc posed potentially serious problems for the export-oriented sectors of the Swiss economy. Of particular interest to Switzerland was the franc's relationship to the euro because nations in the Euro Area were its largest trading partners. In 2010, total Swiss imports from Euro-Area nations were nearly 13

⁷² SNB, The SNB's Monetary Policy in Turbulent Times, Thomas Jordan, Member of the Governing Board, March 19, 2009, https://www.snb.ch/en/mmr/speeches/id/ref_20090319_tjn (Accessed on August 15, 2022).

times higher than from the United States, and exports to the Euro-Area were almost five times higher than to the United States.⁷³

In 2010, the SNB's official reserves rose by CHF 113 billion, to CHF 252 billion, mainly due to CHF 108 billion worth of foreign currency purchases, which were intended to reduce the Swiss franc's value.⁷⁴ The intervention resulted in considerable book losses for the SNB, amounting to CHF 26.5 billion (i.e., -10.1%) on its new and existing foreign exchange reserves.⁷⁵ In the face of strong public criticism for these losses, the SNB's distribution reserve turned negative, amounting to CHF -5 billion at the end of 2010 and causing a significant decline in the Bank's equity-to-asset ratio. Even though the SNB was one of the most highly capitalized central banks globally, losses of this dimension could quickly deplete the Bank's equity. Between October 2007 and August 2011, the Swiss franc appreciated nearly 50% against the euro to EUR 0.89/CHF. An appreciation of this scale threatened the Swiss economy with job losses and, equally important, deflation, which would have increased burdens on Swiss-franc debtors and forced unwelcomed internal adjustments.

Swiss Franc—Euro Exchange Rate: September 2011 to January 2015

In August 2011, the Bank lowered its Libor target range to 0.0–0.25%, where it remained until January 2015. To guard against disruptive appreciations of the Swiss franc, which might threaten its price stability goals, the SNB decided, in September 2011, to set a minimum exchange rate of 1.20 Swiss francs for one euro (i.e., a maximum price of 0.83 euros per Swiss franc).⁷⁶

By choosing to hitch the Swiss franc to the euro in 2011, the SNB relinquished considerable control over the nation's money supply growth but sent a clear signal to the markets that it would not throw Switzerland's export

⁷³ WITS: World Integrated Trade Solution, <https://wits.worldbank.org/CountryProfile/en/Country/CHE/Year/2010/TradeFlow/EXPIMP#> (Accessed on August 15, 2022).

⁷⁴ Swiss National Bank, Switzerland's Reserve Assets, [https://data.snb.ch/en/topics/snb#/cube/snbimfra?fromDate=2009-01&toDate=2010-12&dimSel=D0\(T0,T1,T2,T3,DAEHS,T4,ZBIZIWF,T5,DNA,T6,DNS,2RIWE,3SSZR,T7,GET8,DF0,DNN,U0,T9,W,G0,D,DF1,G1,U1\),D1\(T0,T1](https://data.snb.ch/en/topics/snb#/cube/snbimfra?fromDate=2009-01&toDate=2010-12&dimSel=D0(T0,T1,T2,T3,DAEHS,T4,ZBIZIWF,T5,DNA,T6,DNS,2RIWE,3SSZR,T7,GET8,DF0,DNN,U0,T9,W,G0,D,DF1,G1,U1),D1(T0,T1) (Accessed on August 15, 2022). The SNB's foreign currency balances can change for reasons other than foreign exchange intervention, such as currency swaps, transactions for the Confederation, and valuation adjustments.

⁷⁵ Swiss National Bank, 2010: 103rd Annual Report, https://www.snb.ch/en/mmr/reference/annrep_2010_komplett/source/annrep_2010_komplett.en.pdf (Accessed on August 15, 2022).

⁷⁶ SNB had also begun to use forward market intervention to influence the market. While these transactions were off-balance sheet, they provided yet another instrument in the SNB's monetary toolkit.

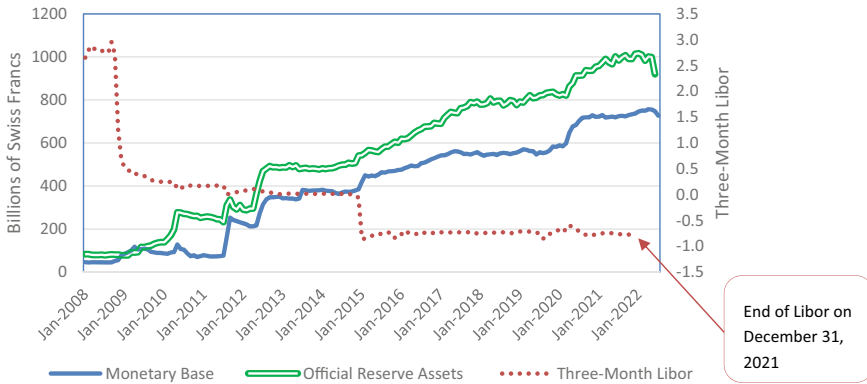


Fig. 7.6 SNB official reserves, Switzerland's monetary base, and Swiss three-month Libor: January 2008 to June 2022 (Source SNB, SNB Data Portal, <https://data.snb.ch/en> [Accessed on August 24, 2022])

sector under the tires of runaway international capital markets—regardless of how large they were. With more than US\$4 trillion in total daily global foreign exchange transactions,⁷⁷ there was serious concern that the SNB would be unable to enforce its new ceiling if the massive potential volume of international capital flows came into play. At least for the short term, the SNB's policy went hand-in-glove with its priority of preventing deflation. By imposing a ceiling on the Swiss franc's value in euros, the nation's monetary base skyrocketed, causing consternation among some market analysts that it portended inflationary pressures in the future.

One of the most worrying threats to the SNB's new policy of capping the Swiss franc's value relative to the euro was the rapid and significant increase in foreign currency exposures. If the Bank was correct and the Swiss franc was (indeed) overvalued, then the euros it purchased should appreciate, earning it significant currency gains in the future. Conversely, if the SNB's expectations proved inaccurate and the Swiss franc continued to appreciate, book losses amounting to billions of Swiss francs could result. The stakes associated with policy mistakes were prominent and visible, while the benefits associated with successful policy interventions were widely distributed and less evident.

Figure 7.6 provides a striking visual portrayal of the significant growth in Switzerland's monetary base and the SNB's official reserves after 2008, as well as the dramatic reduction in three-month Libor below zero.

⁷⁷ Bank for International Settlements, Triennial Central Bank Survey of Foreign Exchange, and Derivatives Market Activity in 2010—Final Results, December 2010, <https://www.bis.org/publ/tpfx10t.htm> (Accessed on August 16, 2022).

The SNB's policy of capping the Swiss franc at 0.83 euros and targeting three-month Libor at 0% survived 2011, but official reserves rose during the year by 22% (see Fig. 7.6). In the first quarter of 2012, the exchange rate limit was breached, causing the SNB to pursue an aggressive intervention strategy, which raised its official reserves by 67% for the year (see Fig. 7.6).

The SNB kept its options open about how long the policy would continue. Pressure came from exporters, who argued for an even weaker franc, moving it from EUR 0.83/CHF to EUR 0.80/CHF or, perhaps, EUR 0.77/CHF (i.e., from CHF 1.20/EUR to CHF 1.25/EUR or CHF 1.30/EUR), but the SNB judged the costs of doing so were problematic. A weaker Swiss franc was perceived as having only marginal benefits for exporters but imposing considerable burdens on the SNB—not only in terms of potential market attacks on the Swiss franc but also international accusations of currency manipulation. The Swiss franc's strength reflected a weak Eurocurrency Zone rather than a solid and vibrant Swiss economy.

Swiss GDP was vulnerable and projected to grow at tepid rates well into 2012 due to the Eurozone debt crisis, weak external demand, and lackluster business confidence. During the previous 12 years, the Swiss franc had shown considerable volatility against the euro, which was also why the Swiss currency was still highly demanded for diversification purposes.

The SNB's credibility and unconditional enforcement of the 1.20 floor showed signs of success in 2013 when appreciation pressures abated. Without the need to intervene, official reserves fell by 2% in 2013 and increased by only 1% during the first five months of 2014. Inflation seemed under control, and economic growth showed real signs of life.

Negative Interest Rates

During 2014, continued financial, economic, and sovereign-debt problems in Greece were exacerbated by the Ukraine conflict, growing concerns about Europe's economic weakness, political uncertainty, and sluggish growth prospects for China—all of which increased the demand for the Swiss franc. The SNB reacted by lowering its target Libor into the negative range, from 0.0–0.25 to –0.75–0.25%. Continued upward pressure on the Swiss franc was relentless, prompting the SNB, in December 2014, to impose a negative interest rate equal to –0.25% on bank sight deposits at the SNB.⁷⁸ In part, this change was in reaction to a similar policy by the European Central Bank.

⁷⁸ This penalty rate only applied to sight deposit balances that exceeded a certain exemption threshold level. Information on the exemption calculation can be found on the SNB's Instruction Sheets. SNB, SNB Instruction Sheets, *Ibid.*

In January 2015, the SNB reduced the sight deposit rate to -0.75% and changed the target range for three-month Libor to -1.25% – -0.25% .⁷⁹ The policy of negative interest rates led some economists to argue that the SNB had maneuvered itself into a liquidity trap,⁸⁰ while other economists warned of the long-term dangers that excessive monetary stimuli applied over long periods could cause. In the foreign exchange markets, the results were clear. From May to December 2014, the SNB's official reserves increased by 11%.

The Swiss Franc-Eurocurrency Peg is Abandoned, but Exchange Rate Targeting Continues

The battle to fix Switzerland's exchange rate at 0.83 euro per Swiss franc was fought until January 2015, when the SNB abandoned this target but stated its intention to remain active in the foreign exchange markets. Continued efforts to peg the Swiss franc to the euro were considered "no longer justified from a monetary policy point of view"⁸¹ by the SNB after the euro depreciated against the U.S. dollar, with the Swiss franc following in step. As a result, the Swiss franc's trade-weighted value eased somewhat, giving the SNB a bit of breathing space.

A second factor in the SNB's decision to abandon its euro peg may have been the Euro Area's sluggish growth rate compared to other developed nations, such as the United States. The SNB's decision to end the currency peg freed the franc from a struggling counterpart.

Another reason for abandoning the fixed-exchange-rate commitment was that the SNB had accumulated massive amounts of euros during slightly more than three years, significantly enlarging its balance sheet and currency risk exposures. As its euro-denominated assets depreciated, the SNB's reported profits and equity were affected negatively. The SNB's equity fell so low that questions were raised about whether it might become insolvent.

SNB Chairman Thomas Jordan tried to diffuse concerns by reminding the public that "Even though it is in a position of short-term negative equity, a

⁷⁹ This negative interest rate on sight deposits at the SNB remained until March 2022, when the SNB raised its policy rate by a half percentage point to $+0.25\%$. SNB, Chronicle of Monetary Events 1848–2022, Ibid. Swiss National Bank, Important Monetary Policy Data for the Week Ending, January 16, 2015, https://www.snb.ch/en/mmr/reference/gwd_20150119/source/gwd_20150119.en.pdf (Accessed on August 16, 2022).

⁸⁰ Yvan Lengwiler and Florian Schwab, Yvan Lengwiler und die 45-Milliarden-Franken-Frage, Weltwoche, https://edoc.unibas.ch/78757/1/20201003092837_5f78282571e59.pdf (Accessed on August 16, 2022).

⁸¹ SNB, After the Minimum Exchange Rate: New Monetary Policy Challenges, Fritz Zurbrügg, Member of the Governing Board, March 26, 2015, https://www.snb.ch/en/mmr/speeches/id/ref_20150326_zur/source/ref_20150326_zur.en.pdf (Accessed on August 16, 2022).

central bank retains full capacity to act because it cannot become illiquid. Even with a negative equity position, legal measures do not need to be taken, in contrast to the situation for a private company.” He went on to say, “However, in the long term, a sustained state of negative equity may undermine a central bank’s credibility and independence. It is therefore vital that the SNB rebuild its equity as soon as possible after losses have been sustained, and that it maintains a strong balance sheet in the long term.”⁸²

Three-Month Libor, SNB Sight Deposit Rate, and Exchange Rate Situation: January 2015 to June 2019

After abandoning the exchange-rate cap on the Swiss franc, the SNB’s monetary policy target became a combination of the three-month Libor, the interest rate charged on bank sight deposits at the central bank, and exchange rate conditions. Targeting these financial indicators became a bit easier as the European debt crisis subsided and economic conditions in Switzerland returned closer to normal.

Britain’s decision to exit the EU in June 2016 (i.e., Brexit) added uncertainty to the market until it was finalized on January 31, 2020. The unanswered question was, “If Britain left, would others follow?” The resulting “flight to safety” put temporary upward pressure on the Swiss franc, shocked global stock markets, and added pressure on countries like Italy, which were also struggling with sovereign debt issues. Similar pressure, albeit relatively lighter, emerged between 2018 and 2021, with Turkey’s and Argentina’s currency, debt, and political crises.

SNB “Policy Rate”: June 2019 to July 2022

In 2017, Switzerland’s Financial Conduct Authority announced its intention to drop Libor as a reference rate by 2021. Of the possible replacements, the SNB’s Working Group on CHF Reference Rates considered the Swiss Average Rate Overnight, more commonly known by its abbreviation “SARON,” to be the most representative short-term money market rate. In June 2019, the SNB introduced SARON as its official “Policy Rate” and shifted the Bank’s target toward a reference rate and away from the three-month Libor reference range. The SNB planned to keep the new policy rate and bank sight

⁸² SNB, Does the Swiss National Bank Need Equity?, Thomas Jordan, Vice Chairman of the Governing Board, September 28, 2011, http://www.snb.ch/en/mmr/speeches/id/ref_20110928_tjn (Accessed on August 16, 2022).

deposit rates at -0.75% .⁸³ FINMA and the SIX Swiss Exchange reacted by closely monitoring developments and informally encouraging and supporting banks' preparation for SARON, which is based on concluded short-term repo transactions and representative quotes. Because market participants typically engage in longer-term contracts (e.g., loans and mortgages), SARON Compound Rates and Indices have been provided by the SIX since March 2020.⁸⁴

With an eye on ensuring Switzerland did not fall into a recession, from June 2019 to March 2022, the SNB kept its sight deposit and SARON rates at -0.75% . At the same time, it expressed an open willingness to intervene in the foreign exchange markets to counteract foreign interest in Swiss financial assets that might induce an unwanted appreciation of the Swiss franc. In March 2020, the Bank increased its threshold factor from 25 to 30, providing relief to Swiss banks trying to remain profitable in a shallow interest rate environment.⁸⁵

In March 2020, the SNB, Bank of Canada, Bank of England, Bank of Japan, European Central Bank, and Federal Reserve announced a joint action to enhance the availability of U.S. dollar liquidity via their standing swap line arrangements.⁸⁶ The policies were effective, and due to the sustained improvements in U.S. dollar funding conditions, on July 1, 2021, the non-U.S. banks, in consultation with the US Federal Reserve, decided to discontinue offering dollar liquidity with an 84-day maturity and returned to the normal seven-day maturity.

The SNB and COVID-19 Pandemic (2020–2022)

In February 2020, the coronavirus disease (COVID-19) spread rapidly worldwide and plunged Switzerland into a recession. The virus upped the stakes for the SNB's monetary policies. While keeping both the interest rate on bank sight deposits and the SNB policy rate at -0.75% , the Bank tried to ease the

⁸³ This policy rate remained at -0.75% until March 2022.

⁸⁴ SIX, SARON Compound Rates, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/indices/swiss-reference-rates/saron-compound-indices.html> (Accessed on August 16, 2022).

⁸⁵ The threshold factor determines the amount of banks' sight deposits at the SNB that are exempt from negative interest penalty.

⁸⁶ They agreed to lower the interest rate on these arrangements by 25 basis points, so the swap arrangements' price equaled the U.S. dollar overnight index swap (OIS) rate plus 25 basis points. To enhance the swap lines' effectiveness, the SNB and other non-U.S. central banks agreed to offer weekly U.S. dollar loans with an 84-day maturity, in addition to the 1-week maturity operations currently offered.

burden on domestic banks by increasing the threshold on sight deposits not subject to the negative interest rate from CHF 25 million to CHF 30 million, starting April 1, 2020, and reducing the countercyclical capital buffer to 0%, effective immediately.⁸⁷

To cushion the effects of the COVID-19 pandemic, in March 2020, a consortium composed of the Swiss Confederation, SNB, FINMA, and domestic Swiss banks launched a package of new liquidity measures. Part of this initiative was a temporary standing facility, called the SNB *COVID-19 Refinancing Facility (CRF)*. Intentionally, it was created as a liberal source of funds for banks, without upper loan limits, free of access and maturity restrictions, and carrying an interest cost equal to the SNB policy rate. The SNB retained the daily right to increase or decrease these loans and terminate them after a three-month notice. The loans were collateralized and available to banks domiciled in Switzerland and the Principality of Liechtenstein, and some qualified Swiss branches of foreign banks, so long as these banks were connected to the SIC system. The associated claims were assigned to the SNB.

Figure 7.7 shows that Switzerland's monetary and fiscal reactions to COVID-19 were generally successful. From the recession's depths in the second quarter of 2020, Switzerland grew strongly in the year's third quarter but fell to relatively tepid rates after that. Switzerland's performance mirrored other developed countries, such as the United States and Euro Area.

At first, eligible collateral for this facility included corporate loans connected to the COVID-19 pandemic that the Swiss Confederation guaranteed. In May 2020, about two months later, eligible collateral was expanded to include canton-guaranteed loans and credit default swaps, as well as collateral having joint federal-cantonal guarantees.⁸⁸

The COVID-19 pandemic adversely affected UBS and Credit Suisse, Switzerland's two internationally competitive, big banks, but these financial intermediaries were subject to Switzerland's "Too Big to Fail" capital requirements (explained below), which kept their equity at relatively healthy levels. As for domestically focused Swiss banks, the pandemic did not materially affect their profitability in 2020 and 2021. Credit losses remained relatively low due to public support measures. Moreover, the mortgage and real

⁸⁷ Swiss National Bank, 113th Annual Report: Swiss National Bank: 2020, https://www.snb.ch/en/iabout/pub/annrep/id/pub_annrep_2020 (Accessed on August 16, 2022).

⁸⁸ More information on the CRF can be found at SNB, Instruction Sheet on SNB COVID-19 Refinancing Facility (CRF), July 17, 2020, https://www.snb.ch/en/mmr/reference/repo_mb29/source/repo_mb29.en.pdf (Accessed on August 16, 2022).

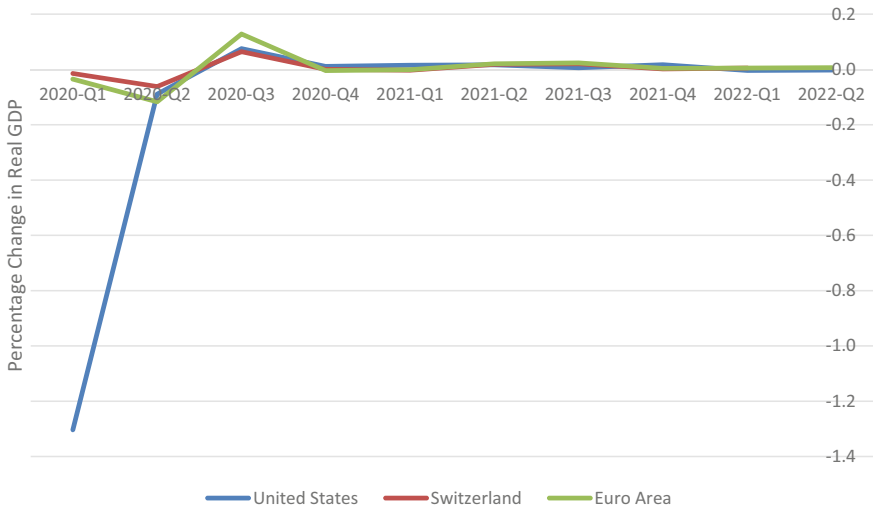


Fig. 7.7 Quarterly growth of real GDP for Switzerland, the United States, and Euro Area: Q1 2020 to Q2 2022 (Source FRED, Federal Reserve Bank of St. Louis; Switzerland, <https://fred.stlouisfed.org/series/CLVMNACSAB1GQCH> [was available only until Q1 2022]; Euro Area, , United States, [Accessed on August 22, 2022])

estate markets were vibrant, and the decline in interest-rate margins slowed, allowing domestic banks to maintain or increase their capital bases.⁸⁹

SNB Policies Tighten: March 2022–June 2022

Russia's invasion of Ukraine in February 2022 increased volatility for global supply chains and financial markets. The resulting disruptions convinced the SNB to continue supporting the Swiss economy via monetary expansion and exchange rate protection. In the following months, the nation was hit by two inflationary forces. Supply chain disruptions caused cost-push inflation, and expansionary fiscal and monetary policies worldwide (not just in Switzerland) caused demand-pull inflation. The combination convinced the SNB to dampen demand.⁹⁰ With the increase in Swiss and global inflation, it was

⁸⁹ SNB, Introductory Remarks by Fritz Zurbrügg, Vice Chairman of the SNB Governing Board, June 17, 2021, https://www.snb.ch/en/mmr/speeches/id/ref_20210617_zur/source/ref_20210617_zur.en.pdf (Accessed on August 16, 2022).

⁹⁰ At its March 2022 meeting, SNB tightened liquidity by raising its policy rate 0.25% from –0.75% to +0.25%. A few months later, on July 1, 2022, the SNB reinforced its policy change by lowering from 30 to 28 the threshold factor used to calculate the level of banks' sight deposits at the SNB that were exempt from the negative interest.

clear that future efforts to combat inflation could be problematic unless prices were harnessed at an early stage.

Switzerland's Inflation and Money Supply Growth Rates: 2008 to 2022

One of the singularly most interesting economic developments from 2008 to the first quarter of 2022 was the absence of accelerated Swiss inflation in the face of dramatic increases in the nation's money supply. From January 2008 to January 2021, Switzerland's M1, M2, and M3 money supplies increased by 176, 139, and 79%, respectively, while real GDP increased by only 18%.⁹¹ From beginning to end, the nation's consumer price index was virtually unchanged. The SNB's foreign exchange purchases caused a significant expansion of Switzerland's money supply, but the excess liquidity appears to have remained in the financial sector with no meaningful short-term effect on Switzerland's real economy.

Too Big to Fail and the Swiss Finish

The 2009 Basel III Accord raised global minimum capital and liquidity guidelines on the quantity and quality of bank capital, but it did not go far enough. For example, unaddressed was the *too-big-to-fail* problem, which was (and has been) particularly pronounced in Switzerland because of the two big banks' (i.e., UBS and Credit Suisse) enormous size relative to the Swiss economy (e.g., gross domestic product). A failure of one (or both) could pose an existential threat to the Swiss financial system and its economy. The Federal Council responded to this potential threat by appointing a commission of experts to examine the "too-big-to-fail" problem. In October 2010, the Commission presented its final report with recommendations.⁹²

The proposals went beyond minimum international standards, particularly for capital and liquidity requirements, by imposing stricter capital requirements on the big banks relative to small- and medium-sized Swiss banks.

⁹¹ SNB, SNB Data Portal, <https://data.snb.ch/en> (Accessed on August 16, 2022).

⁹² Schweizerische Eidgenossenschaft, Schlussbericht der Expertenkommission zur Limitierung von volkswirtschaftlichen Risiken durch Grossunternehmen, September 30, 2010, <http://anlagekunst.ch/SchlussberichtTooBigToFail.pdf> (Accessed on August 16, 2022). Also, see Bank for International Settlements, Thomas J. Jordan: Approaching the Finish Line: The Too Big to Fail Project in Switzerland, Thomas Jordan, Vice Chairman of the Governing Board of the SNB, International Center for Monetary and Banking Studies in Geneva, May 17, 2011, <https://www.bis.org/review/r110518b.pdf> (Accessed on August 16, 2022).

The heightened level of supervision and restriction is often called the *Swiss finish* and earned Switzerland the distinction of being a world leader in capital requirements.

Banks deemed “too-big-to-fail” were required to hold at least 10% of their risk-weighted assets in the form of common equity—the strictest form of capital. In addition, they needed to maintain an additional 9.0% buffer, which could be in the form of contingent convertible bonds.⁹³ These bonds could be converted into equity when their core capital ratio fell below a certain level, increasing potential capital requirements to 19% of risk-weighted assets.

The new capital standards had three tiers. Like Basel III, the first was an initial minimum requirement for common equity of 4.5%. The second was a mandatory buffer of 8.5%, of which a minimum of 5.5% had to be held in the form of common equity. Finally, a progressive capital component in contingent convertible bonds (i.e., cocos) was initially set at 6%, with a common-equity trigger of 5%,⁹⁴ which rose or fell depending on a bank's size, market position, and interconnectedness.⁹⁵ Furthermore, the Commission recommended that organizational measures be taken to ensure the continuation of systemically relevant functions (e.g., lending business and executing payment systems) during a crisis while simultaneously liquidating the bank in an orderly manner.⁹⁶

The StabFund for UBS Assets

Due to severe market turbulence during fall 2008, UBS lost considerable amounts on its U.S. and European mortgage and leveraged-finance positions. Unable to increase its equity in the private markets, a government or central bank bailout was considered the only solution. Fearing the worst, a plan to rescue UBS and the Swiss financial system was adopted by the Federal Council, the Swiss Federal Banking Commission (now FINMA),

⁹³ Schweizerische Eidgenossenschaft, Schlussbericht der Expertenkommission zur Limitierung von volkswirtschaftlichen Risiken durch Grossunternehmen, *Ibid.*, p. 4.

⁹⁴ If a big bank's equity ratio fell below a predefined level, it triggered the conversion of contingent convertible bonds into equity.

⁹⁵ Schweizerische Eidgenossenschaft, Schlussbericht der Expertenkommission zur Limitierung von volkswirtschaftlichen Risiken durch Grossunternehmen, *Ibid.*, p. 31.

⁹⁶ It is worth mentioning that all expert commission's propositions were subsequently enacted by the Swiss Parliament.

and the SNB. Its design was based on two measures.⁹⁷ First, to restructure and improve the health of UBS's balance sheet, the Swiss government purchased CHF 6 billion of UBS's newly issued mandatory convertible securities (MCS), thereby strengthening the bank's capital base.⁹⁸ Second, UBS transferred a portfolio of illiquid securities to a newly established special purpose vehicle, called the *SNB StabFund Limited Partnership for Collective Investment* (aka, the "StabFund"), which was responsible for the orderly liquidation of UBS's "bad" assets.⁹⁹

The StabFund was created in October 2008 as a limited partnership. Of the US\$60 billion allotted for the bailout, only US\$38.7 billion was effectively transferred to the "bad bank" portfolio.¹⁰⁰ By April 2009, the bad assets had been completely transferred. Because US\$8.8 billion of the fund's value was in derivatives (i.e., contingent liabilities) and \$3.9 billion was covered by UBS, the SNB needed to finance only about \$25.8 billion for the assets and contingent liabilities.¹⁰¹

A prominent feature of the bailout was UBS's call option to repurchase its assets at a strike price of US\$1 billion plus 50% of the portfolio's net asset value over US\$1 billion.¹⁰² This option was contingent on the SNB loan being fully amortized at the time of repurchase. The agreement also stipulated that, if the loan were not fully repaid, the SNB had the option to acquire 100 million UBS shares at the par value of CHF 0.10 per share.

Looking back, the Swiss government made a financially attractive deal by engaging in this transaction because it was able to sell its UBS-issued MCS tranche, in August 2009, for CHF 5.48 billion and earned interest payments of CHF 1.8 billion for the period of its participation. In total, the government made a profit of roughly CHF 1.2 billion.

The SNB's efforts were also a financial success, with UBS returning to profitability in the fourth quarter of 2009 and Switzerland's economic activity

⁹⁷ SNB, 102nd Annual Report: 2009, pp. 163–172, https://www.snb.ch/en/mmr/reference/annrep_2009_komplett/source/annrep_2009_komplett.en.pdf (Accessed on August 16, 2022). Also, see Marcel Zimmermann and Zoltan Szelyes, 'The StabFund: A Look at the Inner Workings of a 'Bad Bank,' *Central Banking* 21:2(2010), 47–53, <https://www.centralbanking.com/central-banking-journal/feature/2042698/stabfund-look-inner-workings-bad-bank> (Accessed on August 16, 2022).

⁹⁸ All government transactions with the StabFund are in Swiss francs, while the SNB transactions are in U.S. dollars.

⁹⁹ SNB, Annual Report 2009, Ibid.

¹⁰⁰ Ibid.

¹⁰¹ Ibid. Also, see Swiss National Bank, UBS Purchases StabFund from the SNB: Profit of USD 3,762 Billion for the SNB, November 8, 2013, https://www.snb.ch/en/mmr/reference/pre_20131108/source/pre_20131108.en.pdf (Accessed on August 16, 2022).

¹⁰² Swiss National Bank, 101st Annual Report, pp. 78–79, https://www.snb.ch/en/mmr/reference/annrep_2008_komplett/source/annrep_2008_komplett.en.pdf (Accessed on August 16, 2022). Also, see Marcel Zimmermann and Zoltan Szelyes, Ibid.

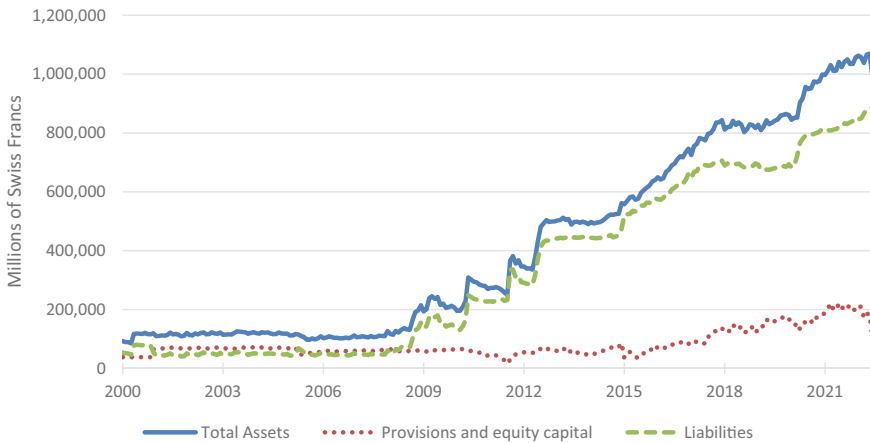


Fig. 7.8 Growth in SNB assets, liabilities, and provisions & equity: January 1, 2000–June 30, 2022 (Source SNB, SNB Data Portal, <https://data.snb.ch/en/topics/snb#!/cube/snbbipo> [Accessed on August 25, 2022])

rising. In November 2013, UBS paid the SNB US\$ 3.8 billion (CHF 3.44 billion) for its portion of the StabFund's equity, and in August 2013, the loan was fully repaid. Together with an additional US\$1.6 billion in interest payments, the SNB earned a total return of US\$ 5.4 billion from the bailout.¹⁰³

Structure of the SNB's Assets: 2000 to 2022

Like many developing nations' central banks, the SNB's balance sheet snowballed between 2007 and 2022 to offset the contractionary impacts of the U.S. Great Recession, European debt crises, and global Covid-19 pandemic. These asset purchases infused liquidity into struggling domestic markets. Figure 7.8 shows that from the beginning of January 2008 to June 2022, the SNB's assets rose by more than 747%, from CHF 117 billion to around CHF 1 trillion.¹⁰⁴

As Fig. 7.9 shows, these expansionary monetary policies dramatically transformed the asset composition of the SNB's balance sheet. From January

¹⁰³ SNB, 106th Annual Report: 2013, p. 89, https://www.snb.ch/en/mmr/reference/annrep_2013_komplett/source/annrep_2013_komplett.en.pdf, (Accessed on August 16, 2022).

¹⁰⁴ SNB, Balance Sheet Items of the SNB, <https://data.snb.ch/en/topics/snb#!/cube/snbbipo> (Accessed on August 16, 2022).

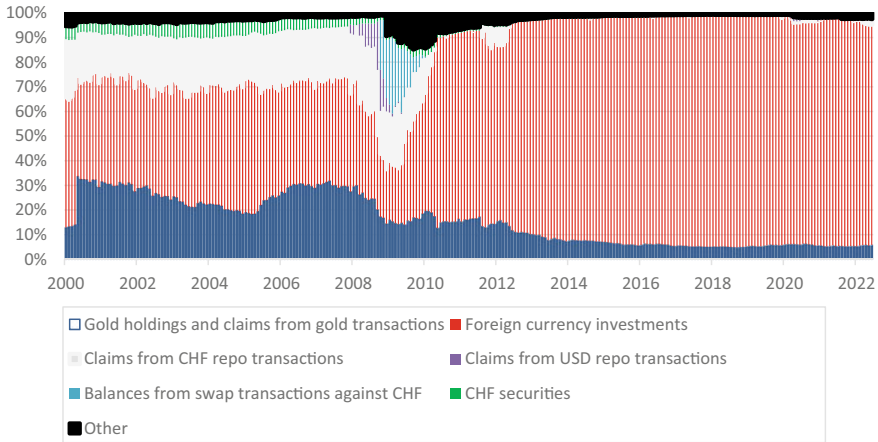


Fig. 7.9 Annual growth rate of SNB assets: January 2000 to June 2022 (Source SNB, SNB Data Portal, <https://data.snb.ch/en/topics/snb#!/cube/snbbipo> [Accessed on August 25, 2022])

2000 to June 2022, foreign currency investments grew by nearly 1,770% and averaged more than 90% from the end of 2013 to 2022.

Figure 7.9 also shows how Switzerland's gold reserves, Swiss franc securities, Swiss franc repo transactions, and U.S. dollar repo transactions were marginalized as a percent of total assets. Because the SNB's policy has been to leave its foreign currency reserves unhedged, the Bank's vulnerability to exchange rate fluctuations is substantial.

Provisions for Currency Reserves

The SNB does not hedge its foreign exchange risks but relies on currency diversification to manage them. A significant downside risk is the possibility of currency fluctuations causing significant fluctuations in its reported profits and valuation changes in the balance sheet because these provisions are stated at market value. For this reason, the Bank makes annual allocations from net profits to "Provisions for Currency Reserves." The SNB has chosen this strategy because hedging the currency risk would lead to an appreciation of the Swiss franc and counter the SNB's measures on the foreign exchange market, thereby causing unwanted changes in monetary policy, which might sacrifice financial stability for profit-taking. Annual currency provisions have a mandated minimum, which means they are allocated regardless of whether yearly profits are positive or sufficient. Therefore, provisions above net profits reduce retained earnings (i.e., the Distribution Reserve). The mandated

currency provisions help ensure that adequate funds will be available if the SNB needs to defend an unwelcome Swiss franc depreciation.

Before 2009, *Provisions for Currency Reserves* were based on Switzerland's average annual growth rate for nominal GDP during the previous five years. Due to the financial and economic turmoil in the early 2000s, this allocation was changed, between 2009 and 2016, to two times the previous five-year annual growth rate in nominal GDP. Since 2016, the minimum yearly distribution has been changed to 8% of the currency provisions balance at the end of the previous year.

As Fig. 7.10 shows, the SNB's stunning increase in assets was accompanied by an equally dramatic reduction in its equity-to-assets ratio. The *NBA* fixes the Bank's share capital at CHF 25 million, so the overwhelming majority of its equity is composed of provisions for currency reserves and retained earnings (called "Distribution Reserve"). As noted above, every year, a portion of the Bank's net profits are allocated to currency provisions, which act as a reservoir of liquidity to support foreign exchange market intervention and cushion against financial risks. Because annual allocations to currency provisions are mandated, dividend distributions may be withheld, and retained earnings may be negative, as they were in 2013.

From January 2000 to August 2008, the SNB's asset-to-equity ratio averaged 54% but trended dramatically downward after that. From 45% in



Fig. 7.10 SNB equity as a percent of assets: January 2000 to June 2022 (Source SNB, SNB Data Portal, <https://data.snb.ch/en/topics/snb#!/cube/snbbipo> [Accessed on August 25, 2022])

August 2008, the SNB's equity ratio fell to 12% in September 2011, when the SNB began to peg the Swiss franc to the euro. The peg seemed to help temporarily, but in January 2015, when the peg ended, the SNB's equity-to-asset ratio had fallen to a paltry 6%.

Could the SNB Become Insolvent?

From 2011 to 2016, the SNB's equity-to-asset ratio fell so low that concerns were raised as to whether the Bank might become insolvent—and, if so, then what?¹⁰⁵ A central bank can become insolvent if the values of its assets are less than liabilities and equity is negative. Solvency is different from liquidity, and to remain sustainable, the SNB needs liquidity to pay its bills. This ability would not be threatened by insolvency because the Bank has the constitutional power to create monetary base to pay for assets and meet its financial obligations. At the same time, the Bank's long-term credibility and political independence could be threatened if it could not remain solvent.

The SNB's Gold Holdings

From the 1920s to 1997, Swiss franc banknotes had 40% gold backing. In 1997, this requirement was reduced to 25%, and in 2000, it was abandoned. As one of a few currencies in the world with gold backing, the cost of keeping the Swiss franc tied to this precious metal became increasingly evident. The SNB's official price of gold was considerably below the market price, so selling its gold stock earned the SNB substantial gains that could be put to good use for the Swiss population. At year-end 2000, the SNB owned 2,419 tons of gold. On a per-capita basis, this was approximately six times higher than its closest competitor (the Netherlands), seven times higher than France, eight times higher than Germany, and 12 times higher than the United States.¹⁰⁶

Abandoning its gold backing was not as simple as having the government pass a new law or the SNB declare its end. Decoupling required a:

¹⁰⁵ SNB, Does the Swiss National Bank Need Equity? Thomas Jordan, Vice Chairman of the Governing Board of the SNB, at the University of Basel on September 28, 2011, https://www.snb.ch/en/mmr/speeches/id/ref_20110928_tjn (Accessed on August 19, 2022). Also, see John Marthinsen, *Demystifying Global Macroeconomics*, Chapter 9: Central Banks, Third edition. (DE G Publishers, Walter de Gruyter, Inc., 2020).

¹⁰⁶ World Gold Council, Central Bank Holdings, https://www.gold.org/goldhub/data/monthly-central-bank-statistics?gclid=Cj0KCQjw0emHBhC1ARIsALIQGNcgIqLiU3DZGwgiE_k0tbrtwfYyaanXr6FL_3jAPIBTdY4-JpDWPWwaAuBIEALw_wcB (Accessed on August 19, 2022). Population figures from The World Bank Data, <https://data.worldbank.org/country> (Accessed on August 19, 2022).

- Parliamentary proposal to change the nation's *Constitution*¹⁰⁷;
- Ratification of the *Constitutional* proposal by a public referendum, and
- Parliamentary repeal of Switzerland's *Coinage Act* and its replacement with a new federal currency and payments law.

In February 1997, the Committee for Economic Affairs and Taxation of the National Council proposed dropping the Swiss franc's link to gold. This proposal was followed in April 1997 by the appointment of a special commission to study the SNB's gold holdings relative to its overall level of reserves. Among the concerns and suggestions for change was a belief that the SNB's reserves had grown too large due to its pint-sized profit distributions to the cantons and federal government. In October 1997, the Commission's report recommended a change in the *Constitution* to allow the SNB to sell 1,300 tons of its gold reserves. In a national referendum held in April 1999, the Swiss people and cantons approved the recommended change, and the Swiss federal parliament put the new Federal *Constitution* into force starting on January 1, 2000.¹⁰⁸

During the five years from 2000 to March 2005, the SNB sold 1,300 tons of gold, and, during a subsequent 27-month period, from June 2007 to September 2009, it sold yet another 250 tons of gold. As a result, the SNB's gold holdings shrank to 1,040 tons, which (at the time) carried a market value of CHF 36,687 per kilogram.¹⁰⁹ One-third of the SNB's 1,300-ton gold sale proceeds went to the Confederation and was subsequently channeled into the national Old Age and Survivors' Insurance Fund. The remaining two-thirds were distributed to the cantons. Proceeds from the SNB's 250-ton sale increased its foreign exchange reserves. In 2009, Switzerland's total gold reserves (gold holdings and claims from gold transactions) amounted to CHF

¹⁰⁷ Switzerland's original Constitution was silent on gold (or silver) backing for banknotes because it was regulated by the cantons. The Coinage Act of 1850 defined the Swiss Franc in terms of silver and, in 1860, revised the backing in terms of silver and gold. The Banknote Act of 1881 (based on the revised Constitution of 1874) first introduced a 40% coverage of Swiss notes in gold or silver at the federal level. At the constitutional level, revision of Article 39 in 1891 made banknotes convertible into currency metal (gold or silver). Silver lost its status as a currency metal in 1929, when full gold convertibility was established. The Great Depressions put an end to the gold standard as a global monetary system by the end of 1932.

¹⁰⁸ Swiss National Bank, 92nd Annual Report: 1999, p. 105. https://www.snb.ch/en/mmr/refere/annrep_1999_komplett/source/annrep_1999_komplett.en.pdf (Accessed on August 19, 2022). According to Article 99 of the Swiss Federal Constitution, the "Swiss National Bank shall create sufficient monetary reserves from its profits; a part of these reserves shall be held in gold".

¹⁰⁹ SNB, SNB Gold Sales: Lessons and Experiences, Philipp M Hildebrand, Member of the Governing Board of the SNB, at the Institute for International Economics on May 5, 2005, <https://www.bis.org/review/r050509b.pdf> (Accessed on August 19, 2022).

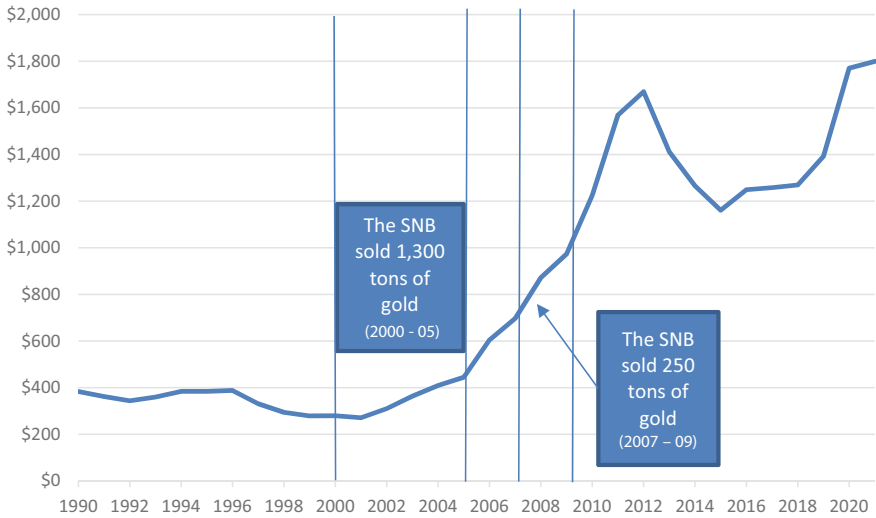


Fig. 7.11 Average monthly price of gold per ounce: January 1990 to December 2021 (Source ICE Benchmark Administration Limited (IBA), Gold Fixing Price 3:00 P.M. [London time] in London Bullion Market, based in U.S. Dollars [GOLDPMGBD228NLBM], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/GOLDPMGBD228NLBM>, July 23, 2021)

38.2 billion, representing 91.6% gold coverage of Swiss currency in circulation (CHF 41.7 billion) and 10.1% of the M1 money supply (CHF 377.2 billion).¹¹⁰

Controversy

The timing of the SNB's gold sales was unfortunate because they were synchronous with a period of declining precious metal prices. Between 1996 and 1999, worldwide supply and demand conditions had reduced gold prices, and, contemporaneously, a growing number of central banks had begun to sell or announced intentions to sell their gold reserves (see Fig. 7.11).¹¹¹

The IMF also expressed an interest in selling its gold holdings, giving rise to the grim possibility of a potential crash in gold prices. To bring rhyme and reason to the potentially conflicting intentions, the IMF held meetings

¹¹⁰ M1 includes currency in circulation, sight deposits, and deposits in transaction accounts. Swiss National Bank, Monetary Aggregates M1, M2 and M3, Monthly Statistical Bulletin September 2011, p. 26, https://www.snb.ch/en/mmr/reference/stat_monatsheft_2011_09/source/stat_monatsheft_2011_09.en.pdf (Accessed on August 19, 2022).

¹¹¹ Argentina, Austria, Australia, Belgium, Canada, Luxembourg, the Czech Republic, and India had already begun to sell gold reserves, and England announced its intention in May 1999.

to decide what should be done. On September 26, 1999, the *Washington Agreement* was negotiated, under which 15 central banks agreed to conduct orderly gold sales amounting to 2,000 tons during the period from 2000 to 2005.¹¹² Sales were not to exceed 400 tons per year. Hedging currency risk was permitted, but hedging gold price risk was allowed only one year in advance. Switzerland's gold sales quota of 1,170 tons was the clear majority (almost 59%) of the allocated sales during these five years. Under a second agreement, the SNB could sell the remaining 130 tons of gold, thereby reaching its 1,300-ton goal. Ostensibly, these gold sales were a success, with the SNB earning attractive prices relative to the average for these years.

On average, the SNB managed to sell its gold for CHF 16,241 per kilogram (US\$351.40 per ounce), a price that was more than 350% above its book value. Total earnings amounted to CHF 21.1 billion, but this raised a problem. Between 1999 and 2011, the price of gold appreciated rapidly and significantly. From an average price of US\$279 per ounce in 1999, gold rose to US\$1,572 per ounce by 2011 and nearly \$2,000 in 2020. For this reason, critics severely criticized the SNB's decision to sell a total of 1,550 tons of gold at prices that, in retrospect, seem absurdly low. In the eyes of critics, the SNB's gold-sale decision ranked among the most egregious financial mistakes in recent memory.¹¹³ Had the SNB kept its gold reserves and sold the 1,550 tons in 2011, it would have earned US\$78 billion.¹¹⁴ Of course, the good to which these sales was put must also be considered.

In 2013, the conservative Swiss People's Party reflected part of the nation's dissatisfaction with the SNB's gold policies when it introduced to the Federal Chancellery the "Save Our Swiss Gold" motion, which centered on three issues:

1. Whether the SNB could store its gold outside Switzerland;
2. The Bank's right to sell its gold, and
3. The percent of required gold backing for the Swiss franc.

A referendum was held on November 30, 2014, which would have required the SNB to keep 20% of its assets in gold, repatriate Swiss gold held abroad, and prohibit future sales of the SNB's official gold holdings. With strong opposition from the SNB, the referendum failed, but it opened

¹¹² The U.S. Federal Reserve and Bank of Japan did not participate in the Agreement, but they agreed not to change their existing (passive) gold policies. By contrast, the ECB was an Agreement member.

¹¹³ See, for example, Gary Dorsch, Gold in Swiss Francs, Bullion Vault: Gold News, https://www.bullionvault.com/gold-news/swiss_gold_franc_112420093 (Accessed on August 19, 2022).

¹¹⁴ $32,000 \text{ ounces per ton} \times 1,550 \text{ tons} \times \$1,572 \text{ per ounce} \cong \78 billion .

the eyes of many to the need for greater SNB transparency and deep-rooted public concerns about the possible debasement of the Swiss franc due to a lack of gold backing.

Since 2000, when Switzerland removed gold backing from its currency, the SNB's 1,040 tons of gold holdings have been valued at market prices. An estimated 70% of these assets are stored in Switzerland, 20% at the Bank of England, and 10% at the Bank of Canada.¹¹⁵ The Bank also holds gold for global financial institutions, such as the BIS, Bank of Italy, Bank of Sweden (Sveriges Riksbank), and Bank of Finland. Before 2012, it also participated in gold lending transactions. From May 2000 to the end of June 2022, the market value of the SNB's gold assets increased from CHF 39.3 billion to CHF 58.7 billion. This increase paled in comparison to the change in the SNB's international currency reserves, which rose from CHF 47.9 billion to CHF 848.9 billion over the same period, resulting in this precious metal being only a tiny fraction of the SNB's total foreign currency reserves (see Fig. 7.12). The main reason for gold's diminishing place in the SNB's balance sheet has been massive SNB foreign exchange interventions to reduce upward pressure on the Swiss franc's exchange rate value, which increased significantly its foreign currency reserves.

Digitalization

The SNB is actively trying to understand and promote digitalization and FinTech efforts by the Swiss financial system. Digitalization offers new opportunities for financial institutions of all sizes to reduce costs, improve quality, and become more efficient. Still, it also threatens these same intermediaries with profit compression and prospects of new domestic and international sources of competition.

Payment Systems

Digitalization, communication improvements, and the increasing use of mobile payment applications have spawned a demand for instant payments available 24 hours a day. SIC5 is the SNB's and SIX Group's answer to the question, "Where is Switzerland's payment system going?"¹¹⁶ The new SIC5

¹¹⁵ Bullionstar, Swiss National Bank, <https://www.bullionstar.com/gold-university/central-bank-gold-policies-swiss-national-bank> (Accessed on August 19, 2022).

¹¹⁶ "SIC5" is an abbreviation for "Swiss Interbank Clearing—fifth generation." Sending instant customer payments will be voluntary.

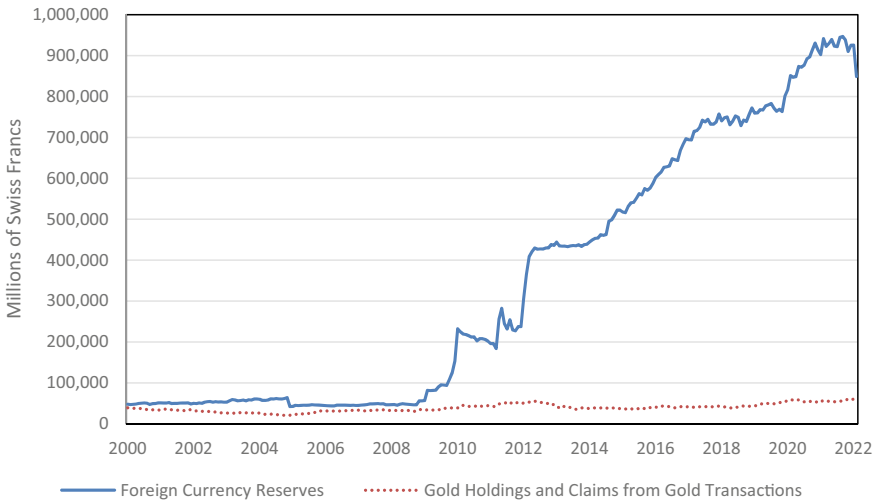


Fig. 7.12 SNB gold and foreign currency assets: May 2000 to June 2022 (Source SNB, SNB Data Portal, [https://data.snb.ch/en/topics/snb#!/cube/snbimfra?fromDate=2000-05&toDate=2005-05&dimSel=D0\(T0,T1,T2,T3,DAEHS,T4,ZBIZIWF,T5,DNA,T6,DNS,2RIWF,3SSZR,T7,GF,T8,DF0,DNN,U0,T9,W,G0,D,DF1,G1,U1\),D1\(T0,T1\)](https://data.snb.ch/en/topics/snb#!/cube/snbimfra?fromDate=2000-05&toDate=2005-05&dimSel=D0(T0,T1,T2,T3,DAEHS,T4,ZBIZIWF,T5,DNA,T6,DNS,2RIWF,3SSZR,T7,GF,T8,DF0,DNN,U0,T9,W,G0,D,DF1,G1,U1),D1(T0,T1)) [Accessed on August 19, 2022])

service is expected to start operations in 2024. By 2026, all Swiss participants on the SIC system should be able to process incoming customer payments instantly.¹¹⁷ Instant payments (i.e., in milliseconds) will be available 24 hours daily, seven days a week for each week of the year.

Cryptocurrencies and the SNB

With the introduction of bitcoin in 2009 and particularly publication of the original *Libra White Paper* in 2019,¹¹⁸ cryptocurrencies have captured the attention and imagination of individuals, businesses, governments, central banks, and international organizations. The scope of possible cryptocurrency varieties is broad. For example, it could be an asset created by a stateless computer algorithm (e.g., bitcoin), introduced by a private company (e.g., Meta Platforms Inc.'s Diem, formerly called Facebook Inc.'s Libra), or created by a central bank (i.e., a central bank digital currency). This section

¹¹⁷ SIX, Swiss Instant Payments Take Off Soon, <https://www.six-group.com/en/blog/2021/swiss-instant-payments.html> (Accessed on August 20, 2022).

¹¹⁸ The original Libra White Paper was released in June of 2019. It proposed the creation of a stablecoin (i.e., a global digital currency backed by a basket of sovereign currencies, such as the U.S. dollar, euro, British pound, and Japanese yen).

focuses exclusively on digital currencies issued by central banks, in general, and the SNB's digital investigations, in particular. If a central bank digital currency (CBDC) is formally adopted, there must be ways to protect it from cyberattacks, and quickly and accurately process massive transactions, ensure payment confidentiality, and make the digital currency interoperable with existing and forthcoming payment systems.

A Central Bank Digital Currency for Switzerland?

Should the SNB introduce a CBDC or not? If so, should it be a retail or wholesale CBDC, account-based or value-based, interest-earning or not? The SNB is responsible for Switzerland's cashless payment system. Therefore, it must be aware of financial innovations that could improve monetary policy effectiveness or facilitate an efficient and safe payment system that is not threatened with obsolescence.¹¹⁹ For this reason, the Bank has been actively studying novel cashless payment systems' potential costs and benefits. After all, what could be more important to a country's financial health than a safe, efficient, smoothly functioning, and low-cost payment system that connects buyers to sellers and borrowers to lenders?

CBDCs are issued and regulated by central banks or monetary authorities. Their values are tied one-for-one to the domestic fiat currency, with free convertibility in both directions. Depending on their intended use, CBDCs can be designed to earn interest or not and cleared using traditional, account-based platforms or distributed ledger technology (DLT) platforms.¹²⁰ In general, CBDCs hold the potential to:

- Make nations' payment and security-settlement systems more efficient and safer, by eliminating liquidity risks and counterparty default risks;
- Create immutable and transparent shared ledgers of asset information, transactions, and ownership;
- Enable operations 24 hours a day, seven days a week;

¹¹⁹ Bordo, Michael D. and Andrew T. Levin, Central Bank Digital Currency and the Future of Monetary Policy, NBER Working Paper No. 23711, 2017, <https://www.nber.org/papers/w23711> (Accessed on August 19, 2022).

¹²⁰ A DLT platform spreads access, validation, and recordkeeping broadly, resulting in an immutable register of transactions. Transfers do not rely on a financial intermediary. Blockchain is the most well-known DLT, but noteworthy competitors are the Directed Acyclic Graph, Distributed Hash Table, and Hashgraph.

- Provide platforms for smart (i.e., self-executing) financial contracts¹²¹;
- Broaden and deepen system interoperability;
- Develop payment systems that are more stable and resistant to outages than current systems, and
- Encourage wider participation by serving more distant domestic and international markets and tapping into more diverse participants.

Another potential benefit of CBDCs is their use by central banks to improve the effectiveness of monetary policies. Central banks' buying and selling of tokenized assets could be as effective as or more effective than other monetary tools. Because central banks issue CBDCs, they would be legal tender, and because central banks would be the ultimate counterparties, CBDC transactions would be free of default and liquidity risks.

Potential benefits are considerable, but the creation of CBDCs would also introduce particular risks, the severity of which are largely unknown. For example, they could increase market and settlement complexity for financial institutions and central banks. They could also introduce legal, governance, and control obstacles by trying to link different payment systems.

Retail and Wholesale CBDCs

There are two broad types of CBDCs: retail and wholesale. A retail CBDC (rCBDC) allows universal access to the general public and complements existing central bank money (i.e., currency in circulation and commercial bank deposits at the central bank). As described below, an rCBDC can be account-based or value-based.

The SNB's position (to date) on a Swiss franc-denominated rCBDC is that it "would bring no additional benefits for Switzerland at present. Instead, it would give rise to new risks, especially concerning financial stability."¹²² In contrast to proponents' beliefs, the SNB's position is that an rCBDC would not bring risk-adjusted benefits to the efficiency of Switzerland's payment systems, the effectiveness of its monetary policies, the stability of its financial system, or the ability to deter financial crimes, such as money laundering.

¹²¹ A "smart contract" is also called a "self-executing contract" because agreement terms are computer coded and carried out automatically (i.e., without the need for third-party enforcement or confirmation). The agreement terms and code reside on a decentralized ledger, which includes rules to which the smart-contract parties agree. Once the rules are met, the contract is automatically executed.

¹²² Federal Council, Federal Council Publishes Report on Central Bank Digital Currency, December 13, 2019, Federal Council publishes report on central bank digital currency (admin.ch) (Accessed on August 20, 2022).

A wholesale CBDC (wCBDC) restricts access to approved participants, such as financial institutions that transact large interbank transactions and firms that conduct security trading, settlement, and management.¹²³ As described below, the SNB's position on a Swiss franc-denominated wCBDC is that it holds the potential to make Switzerland's financial system more efficient, particularly in trading, settling, and managing securities, by eliminating the need for third-party intermediaries and having transactions conducted directly between and among counterparties.

Account-Based and Value-Based Retail CBDCs

An rCBDC can be account-based or value-based. An account-based rCBDC allows the public (i.e., individuals, businesses, and financial institutions) to hold deposit accounts directly at the central bank or indirectly there via digital central bank accounts at commercial banks. With an account-based system, settlement is only as good as the liquidity and honesty of the payer. Therefore, an account-based CBDC relies on an ability to identify participants, which means they are not anonymous, although special privacy protections could be designed for them. For example, an account-based rCBDC might allow limited amounts of anonymous cash deposits.¹²⁴

A value-based CBDC gives users Write- and Read-access to the database. Therefore, users enter transactions directly, without the need for the central bank as an intermediary. Rather than debiting and crediting users' accounts, digital tokens¹²⁵ are transferred directly, using devices, such as smartphones, computers, and tablets, to access e-wallets on a DLT platform (e.g., blockchain). A value-based rCBDC could be efficiently designed to provide depositor anonymity or pseudonymity, but the SNB's likelihood of doing so is small due to the shared desire among central banks to reduce financial crimes, such as money laundering, tax evasion, and terrorist financing.

¹²³ Federal Council, Central Bank Digital Currency: Federal Council Report in Response to the Postulate 18.3159, Wermuth, of 14.06.2018, December 13, 2019, <https://www.admin.ch/gov/en/start/documentation/media-releases.msg-id-77527.html> (Accessed on August 20, 2022). David Andolfatto, Assessing the Impact of Central Bank Digital Currency on Private Banks, Federal Reserve Bank of St. Louis, October 7, 2018, https://www.snb.ch/n/mmr/reference/sem_2019_05_31_andolfatto/source/sem_2019_05_31_andolfatto.n.pdf (Accessed on August 20, 2022).

¹²⁴ "Limited amounts" would be necessary to avoid Anti-Money Laundering Act violations.

¹²⁵ A digital token uses a cryptographic algorithm to convert recognizable information, such as an asset's value and its owner's identity, into random strings of numbers and letters. Doing so eliminates (or severely complicates) the ability to trace a holder's identity and account balance simply by looking at the encryption (e.g., think of your ability to identify someone by looking only at their telephone number).

Value-based rCBDC systems are only as good as the quality and integrity of the assets being transferred. In contrast to account-based rCBDCs, wCBDC transactions do not rely on the payer's liquidity and honesty. By analogy, think of the difference between payment by check, where the payer's identity is essential (i.e., account-based), versus payment in cash or gold, where the asset's value is of primary importance (i.e., value-based). Nevertheless, the SNB's absence as a third-party ledger-keeper implies the need for verification of wCBDC transactions to prevent double-spending (e.g., much like miners verify bitcoin transactions to prevent double-spending).¹²⁶

Wholesale CBDCs (wCBDC)

A wCBDC is a tokenized asset that is issued and controlled by the central bank, and its use is restricted to approved depositors, who transfer CBDC tokens directly among themselves.¹²⁷ Because central banks monitor and control the access, issuance, settlement, and redemption of CBDCs, they are neither anonymous nor pseudonymous.

Issuance of wCBDCs and settlement of wCBDC transactions are conducted on DLT platforms. Depending on their intended use, they could replace or complement existing central banks' wholesale systems. If they complement existing systems, then the challenges are:

1. Ensuring interoperability between the old, account-based systems and the new DLT-based ones;
2. Appropriately changing booking and reconciliation procedures, and
3. Determining messaging standards and new interfaces.

Rather than having the central bank act as an intermediary by debiting and crediting approved depositors' accounts, tokenized transfers are made directly between payers and payees. In contrast to the existing central bank systems, where reserves represent a bank's claim on a central bank liability, wCBDC transactions are actual transfers of market-valued assets. Their issuance and redemption in exchange for bank reserves do not affect a nation's monetary base because they change only the composition of the central bank's liabilities.

¹²⁶ In SNB experiments with wCBDCs, this notary function (signing and time-stamping) was performed by the SNB's notary mode together with the Swiss Digital Exchange (SDX), which is explained in footnote 114.

¹²⁷ An account-based wCBDC is identical to the current central system in which financial institutions deposit funds in the central bank accounts and transfer funds using the central bank as their intermediary.

SNB Experiments with and Research on wCBDC and rCBDC Systems

The SNB has combined forces with international organizations, central banks, and financial institutions to experiment with wholesale and retail CBDCs. To date, the Bank's major wCBDC experiments have been *Project Helvetia* and *Project Jura*. *Project Helvetia* is a multi-phase investigation of possible ways tokenized wCBDCs might be used to settle transactions. Until now, only Phases I and II have been completed. *Project Jura's* goal was to understand if using wCBDCs for cross-currency and cross-border settlements could increase transaction speed, efficiency, and transparency, as well as lower transaction costs and risks.¹²⁸ The SNB's major rCBDC experiment was conducted in conjunction with five central banks and the BIS Innovation Hub.

wCBDC Experiment: Project Helvetia—Phase I

In 2019, the SNB, SIX Exchange, and BIS Innovation Hub (Swiss Center) joined forces in *Project Helvetia*, which studied the functional feasibility and legality of integrating an SNB-issued digital currency into a DLT-based financial-payment and settlement infrastructure.¹²⁹ The Phase I report was published in December 2020,¹³⁰ describing two wCBDC trials (i.e., proof of concepts). The first one tested to see if cash settlement of tokenized-asset transactions among financial institutions could be done safely and efficiently with wCBDCs issued directly by the SNB on the Swiss Digital Exchange (SDX).¹³¹ The second trial sought to achieve interoperability between the DLT infrastructure of the SDX and Switzerland's real-time-gross settlement (RTGS) system, which was transacted on the SIC using cash settlement.

The takeaways from these two trials were:

¹²⁸ Bank for International Settlements, Bank for International Settlements Innovation Hub, Swiss National Bank and Banque de France collaborate for experiment in cross-border wCBDC, June 10, 2021, <https://www.bis.org/press/p210610a.htm> (Accessed on August 20, 2022).

¹²⁹ Bank for International Settlements, Project Helvetia, Undated, <https://www.bis.org/about/bisih/topics/cbdc/helvetia.htm>, (Accessed on August 20, 2022).

¹³⁰ Bank for International Settlements, Project Helvetia: Settling Tokenised Assets in Central Bank Money, December 2020, <https://www.bis.org/publ/othp35.pdf> (Accessed on August 20, 2022).

¹³¹ The SDX began operations in 2021 and is a licensed financial market infrastructure. It is a regulated digital asset exchange built on DLT, with a central securities depository. The SDX also trades and settles tokenized transactions among commercial banks.

1. A wCBDC could offer safe and efficient settlement on a tokenized asset platform;
2. A tokenized exchange, such as the SDX, could instruct cash settlement on Switzerland's RTGS system;
3. Cash-side settlement of transactions involving digital assets can be successfully executed both ways (proof-of-concept I or II);
4. A wCBDC system is more innovative and encompassing than traditional payment systems because it facilitates the execution of smart contracts, and
5. A direct link to the SIC is close to the status quo and would, therefore, be relatively easy to implement and raise fewer policy questions, such as who has access to the system and the central bank's role as the payment system operator.

*wCBDC Experiment: Project Helvetia—Phase II*¹³²

Phase II of *Project Helvetia* extended the work of Phase I by:

- Including five commercial banks (i.e., Citibank, Credit Suisse, Goldman Sachs, Hypothekbank Lenzburg, and UBS),
- Showing how the SNB's DLT-based wCBDC could “integrate and inter-operate”¹³³ with tokenized asset markets and the existing (core) banking infrastructures, and
- Running transactions end to end, which means having commercial banks or the SNB enter settlement instructions that are matched and settled with the wCBDC on the SDX Test Platform and booked and settled on core banking system platforms.

Having interoperability between DLT-based and account-based systems was an essential dimension of this experiment, but equally imperative was ensuring the SNB had complete operative control and monitoring abilities over its wCBDCs, despite issuing them on a DLT platform that was owned by a third party (i.e., the SDX) and delegating operational responsibilities to this third-party operator. The study determined that Swiss law allows a central bank to issue wCBDCs on a third-party platform, as long as it can control and monitor their issuance, settlement, and redemption.

¹³² Swiss National Bank, BIS Innovation Hub, and SIX, *Project Helvetia Phase II: Settling Tokenized Assets in Wholesale CBDC*, <https://www.bis.org/publ/othp45.htm> (Accessed on August 24, 2022).

¹³³ *Ibid.* P. 4.

The experiment successfully tested the feasibility of using wCBDCs for tokenized cross-currency transactions, settlement between resident and non-resident commercial banks, and settlement between commercial banks and the SNB. Overnight wCBDCs were issued on a tokenized asset platform and integrated into Switzerland's core banking system (i.e., the central bank and commercial banks).

For purposes of monetary policy, results showed that buying and selling tokenized assets could add a new and positive dimension to the SNB's monetary policy toolkit (e.g., open market operations and standing facilities), as a means of changing the nation's monetary base and interbank liquidity, but further investigations into possible problems and opportunities were necessary. Particular concerns were raised regarding the impact a wCBDC might have on trading and settlement integration, the ability of financial institutions to manage liquidity, and challenges to operational reliability and security caused by ongoing changes in technologies and systems.

Phase II tested six cases over a three value-day period. In the beginning, participant banks received reserve balances, wCBDCs, and both short-term and long-term tokenized bonds. The short-term security had a one-day maturity with redemption paid to the banks in wCBDCs.

wCBDC Experiment: Project Jura

In June 2021, the SNB's wCBDC experiment expanded internationally with *Project Jura*, which was initiated by the Banque de France (BdF) in conjunction with the SNB, BIS Innovation Hub, a private consortium of banks, law firms, and technology company (Accenture and R3). Accenture led the private consortium of Credit Suisse, Natixis, and UBS. The report was published in December 2021, and the SNB's wCBDC engagement with the BdF has continued under *Project Helvetia*.

Project Jura was a three-day wCBDC experiment conducted in November 2021. It tested the creation and redemption of euro-denominated wCBDCs issued by the BdF and Swiss franc-denominated wCBDCs issued by the SNB, as well as the transfer of these tokens between French and Swiss banks on a third-party, permissioned DLT platform (i.e., SDX), to which each of the three banks had access.¹³⁴ The experiment linked the SDX with France's Digital Asset Registry (DAR), a newly developed issuance platform

¹³⁴ The SDX Test Platform had three subnetworks. The first was for the EUR wCBDC, the second for the CHF wCBDC, and the final network for the tokenized commercial paper. The beauty of this arrangement was, rather than connecting three separate platforms, Project Jura circulated CBDC on the SDX's single Test Platform.

for unlisted, tokenized commercial paper.¹³⁵ The two central banks used notary nodes on the SDX Test Platform to control their respective rCBDCs, and the SDX used its notary node to control the tokenized commercial paper. For these transactions to be immediate and atomic,¹³⁶ the notary nodes needed to interact by signing and time-stamping transactions in their respective rCBDCs.

Business was conducted using the existing legal and regulatory frameworks in France and Switzerland, but the euro wCBDC, Swiss franc wCBDC, and tokenized commercial paper had no legal force because the wCBDCs were not direct central bank liabilities and the tokenized commercial paper was issued on SDX's Test Platform. The three days played out as follows:

Day One: Tokenized Commercial Paper Issuance and Cross-Border Exchange of CBDCs

- Natixis, a French-based corporate and investment bank, issued tokenized commercial paper worth EUR200,000 on the DAR, which was mirrored on the SDX Test Platform.
- Natixis sold the tokenized commercial paper on the intraday market to UBS for euro-denominated wCBDCs (EUR wCBDCs).¹³⁷ UBS obtained these EUR wCBDCs by using Target2¹³⁸ to exchange EUR200,000 with the BdF for an equivalent amount of EUR wCBDCs,¹³⁹ which the BdF created on the SDX Test Platform.
- Credit Suisse used the SIC to exchange Swiss franc deposits at the SNB for Swiss franc-denominated wCBDCs (CHF wCBDCs), which were created on the SDX Test Platform.¹⁴⁰ The transfers were executed automatically, instantaneously, and atomically.
- The day ended with Credit Suisse using the SDX Test Platform to trade its CHF wCBDCs for Natixis's EUR wCBDCs.¹⁴¹

¹³⁵ Banque de France, BIS Innovation Hub, and Swiss National Bank, Project Jura: Cross-Border Settlement Using Wholesale CBDC, December 2021, https://www.banque-france.fr/sites/default/files/media/2021/12/08/rapport_jura_v11_0.pdf (Accessed on August 20, 2022).

¹³⁶ "Atomic" means that both notaries needed to verify (i.e., sign and time-stamp) the transactions for the trades to be processed.

¹³⁷ This transaction was done on a delivery-versus-payment (DvP) basis. Natixis is the administrator, operator, and registrar of the DAR. It is also a connection to the SDX platform.

¹³⁸ TARGET2 is an RTGS payment system owned and operated by the Eurosystem. Central banks and commercial banks use it for euro-denominated payment orders, which are processed and settled by debits and credits to banks' reserve deposits at the central bank.

¹³⁹ The exchange was on a real time gross settlement (RTGS) basis.

¹⁴⁰ This exchange was on an RTGS basis.

¹⁴¹ This exchange was on a payment-versus-payment (PvP) basis.

Day Two: Sale of Tokenized Commercial Paper for EUR CBDCs

- UBS exchanged its newly acquired tokenized euro-denominated commercial paper for Credit Suisse’s EUR wCBDCs.¹⁴²

Day Three: Commercial Paper Redemption and Settlement in CBDCs

- Natixis’s commercial paper matured, and Credit Suisse redeemed it for EUR wCBDCs.¹⁴³
- Natixis and Credit Suisse used the SDX Test Platform to trade Credit Suisse’s EUR wCBDCs for Natixis’s CHF wCBDCs.¹⁴⁴
- The day concluded with UBS and Credit Suisse redeeming their wCBDCs and the two central banks destroying them. As a result, UBS increased its reserve deposits with the BdF, and Credit Suisse raised its reserve deposits with the SNB.

The study demonstrated how a well-designed, DLT-enabled wCBDC could be used “to settle tokenized financial instruments and foreign exchange transactions across borders.” On the positive side, it could reduce risks by:

1. Increasing the use of DvP and payment-versus-payment (PvP) settlement;
2. Broadening the utilization of central bank money;
3. Enhancing competition by employing a tokenized ecosystem to diversity settlement and provide operational back-up, and
4. Simplifying liquidity management and lowering costs for non-resident banks by granting them access to wCBDCs.¹⁴⁵

Two key features of the EUR wCBDC and CHF wCBDCs were their intraday settlement, which allowed immediate availability of funds to non-resident banks. Efficiency gains came from making trade execution, payment, and settlement a single transaction. The study illustrated the power of central bank and private market cooperation to foster cross-border innovation, reduce liquidity fragmentation in global correspondent bank relationships,

¹⁴² This exchange was a DvP, secondary market, offshore transaction.

¹⁴³ This exchange was on a DvP basis.

¹⁴⁴ This exchange was on a PvP basis.

¹⁴⁵ Banque de France, BIS Innovation Hub, and Swiss National Bank, Project Jura: Cross-Border Settlement Using Wholesale CBDC, *Ibid*.

and further the use of central bank money.¹⁴⁶ Moreover, this new settlement system could be conducive to financial stability and enhance the operational efficiency of primary and secondary security transactions.

Future study will be necessary. Particular concerns focus on:

1. How the results of this experiment might change if settlement instructions on the SDX Test Platform were fully automated;
2. The impact wCBDCs might have on the integration of tokenized securities;
3. Accounting, statistical, and regulatory reporting modifications that will need to be made;
4. Effects on technical performance and error correction, and
5. Privacy and cyber security.

SNB's rCBDC Experiments and Studies

Most of the SNB's discussions on rCBDCs have focused on those that have legal-tender status and lack anonymity (i.e., account-based rCBDCs). This virtual currency would serve as the nation's "official" money, implying a successful rCBDC would need to function as a unit of account, medium of exchange, and store of value.

As mentioned in Chapter 3, the Wermuth Postulate was submitted to Switzerland's National Council in March 2018, requesting a detailed report on the feasibility of a Swiss-franc-denominated rCBDC.¹⁴⁷ In January 2020, the SNB, Bank of Canada, Bank of England, Bank of Japan, ECB, Sveriges Riksbank (Bank of Sweden), and BIS Innovation Hub used this report to study an rCBDCs' potential risks, advantages, and prospects.¹⁴⁸ Members agreed to coordinate and share their findings with other international organizations, such as the Financial Stability Board (FSB). The group's mission was to assess rCBDCs' uses in terms of "economic, functional and technical design choices, including cross-border interoperability; and the sharing of knowledge on emerging technologies."¹⁴⁹ Its foundational principles were to "(1) 'do no harm' to monetary and financial stability; (2) coexist with cash

¹⁴⁶ Ibid.

¹⁴⁷ Federal Council, Central Bank Digital Currency—Federal Council Report in Response to the Postulate 18.3159, Wermuth, of 14.06.2018, <https://www.news.admin.ch/news/message/attachments/59639.pdf> (Accessed on August 21, 2022).

¹⁴⁸ Swiss National Bank. Central Bank Group to Assess Potential Cases for Central Bank Digital Currencies," January 21, 2020, https://www.snb.ch/en/mmr/reference/pre_20200121/source/pre_20200121.en.pdf (Accessed on August 21, 2022).

¹⁴⁹ Ibid.

and other types of money in a flexible and innovative payment ecosystem; and (3) promote broader innovation and efficiency.”¹⁵⁰

From these studies and other investigations, the SNB’s position (to date) is that rCBDCs would not, at present, serve the overall interests of Switzerland. In general, it does not see the net advantage of a rCBDC over the forthcoming SIC5 payment system. The Bank based its position on the risk-adjusted costs and benefits in eight focal areas:

1. Broadening financial inclusion;
2. Reducing default risk;
3. Lowering transaction costs;
4. Improving monetary policy effectiveness;
5. Enhancing global financial interoperability;
6. Improving overall financial stability;
7. Reducing financial crime, and
8. Potentially challenging legal implications.

Broadening Financial Inclusion

- An rCBDC holds the potential to reach unbanked or underbanked segments of a country, especially in light of the global increase in cashless payment alternatives, declining fiat currency usage, and significant increases in online shopping. The SNB believes Switzerland’s financial system already has a healthy number of financial institutions for its population and found no signs of significant reductions in Switzerland’s cash acceptance. In fact, a 2017 study learned that cash was responsible for 70% of Switzerland’s non-recurring household payment transactions and 45% of total transaction volume if measured by value. Therefore, the Bank concluded that the marginal benefits (if any), in terms of inclusion, were likely to be small.

Reducing Default-Risk

- An account-based rCBDC would be risk-free, providing the Swiss population with greater security than commercial bank deposits, which are subject to default risk and lack “legal tender” status. The SNB believes that the marginal benefits from this type of safety are relatively small because

¹⁵⁰ Central Bank Digital Currencies: Foundational Principles and Core Features, Executive Paper, p. 2, https://www.bis.org/publ/othp33_summary.pdf (Accessed on August 21, 2022).

Swiss bank deposits are already insured and cantons, except Bern, Geneva, and Vaud, guarantee the deposits of cantonal banks. Customers concerned about the safety of a Swiss financial institution can switch to ones with cantonal guarantees. Furthermore, the chances of massive defaults triggered by systemic illiquidity are negligible due to the SNB's ability to create monetary base at will.

Lowering Transaction Costs

- rCBDCs enable direct transfers, thereby eliminating third-party intermediation. Therefore, they hold the potential to reduce transaction costs. The SNB believes these marginal gains, if any, are likely to be small in light of the nation's already-advanced financial system. Switzerland continues to improve its domestic and international interoperability, and significant challenges in this area would arise if Switzerland were to adopt an rCBDC. Furthermore, the Bank questions the source of these gains, considering it has the same access to technology as the private sector.¹⁵¹

Improving Monetary Policy Effectiveness

- An rCBDC could give the central bank exclusive control over its domestic money supply by eliminating fractional banking, but the SNB questions the net benefits relative to other efforts, such as improving its current financial infrastructure. The Bank recognizes that an rCBDC that eliminated cash could enhance its ability to set negative interest rates because depositors could not avoid penalty rates by retreating to cash. However, the SNB has already reduced nominal interest rates below zero, so enhancing these abilities might provide greater control but also more significant risks.

Enhancing International Interoperability

- A successful rCBDC would require interoperability with foreign systems, which might force countries to increase the pace of advancement. At the same time, the transition period would raise new risks because Switzerland's

¹⁵¹ Raphael Auer and Rainer Böhme, The Technology of Retail Central Bank Digital Currency, BIS Quarterly Review, March 2020, Bank for International Settlements, https://www.bis.org/publ/qtrpdf/r_qt2003j.pdf (Accessed on August 21, 2022).

rCBDC would need to be coordinated with other countries that have and have not adopted them.

Improving Overall Financial Stability

- The SNB is doubtful that a Swiss rCBDC would improve financial stability. One potential benefit is that an rCBDC could make banks more risk-averse to avoid possible runs and ensure their abilities to refinance assets. At the same time, rCBDCs have the power to activate runs if depositors transfer funds to the central bank. These runs could be on a massive scale, ignited with just a few clicks of depositors' keyboards. The SNB believes that Switzerland's financial regulations, particularly due to changes since 2008, have significantly reduced the risk-taking activities of domestic banks, making the risk-adjusted marginal benefits of an rCBDC low or negative.

Reducing Financial Crime

- If rCBDCs were designed without anonymity, they could reduce financial crimes, such as money laundering, drug trade, tax evasion, tax fraud, and terrorist financing, by tracking the illegal steps of individuals, businesses, international institutions, and governments. At the same time, an rCBDC would become a prime target for cyberattacks, and if successful, the results could be consequential due to the potential magnitude and speed of the monetary disruption. The SNB believes that continued efforts by OECD and G20¹⁵² members to increase bank transparency and lower cash payment thresholds for due diligence are more likely to succeed than introducing an rCBDC.

Potentially Challenging Legal Implications

- The legal adjustments that might be needed are highly uncertain because they depend on the type of rCBDC created. Regardless of the specifics, the CHF rCBDC would need to be controlled and regulated by the SNB, Confederation, or both. Among the important questions in the public law area are: What are the limits of power and responsibility between the

¹⁵² The G20 has identified 19 building blocks for enacting cross-border payments. Project Jura contributes to the blocks focusing on PvP, multilateral platforms, and CBDCs.

SNB and Confederation? Would the rCBDCs be legal tender? What are the limits (if any) on third-party delegation? What would be the role of financial intermediaries? How would AML regulations be enforced? What degree of privacy should be granted?

Among the important questions in the civil law area are: What are the liability implications when the technical infrastructure's operations fail, allowing theft, fraud, or privacy violations. Does liability change if responsibilities are outsourced? For international transactions, how are issues of jurisdiction settled?

Swiss Sovereign Money (Vollgeld) Initiative

In June 2018, Switzerland held a popular referendum that would have given the central bank exclusive power to create money.¹⁵³ If successful, fractional banking in Switzerland would have vanished, with banks required to hold 100% reserve assets against their deposit liabilities.¹⁵⁴ In short, the initiative would have taken the creation of money out of the hands of private banking institutions and placed it fully with the SNB.

The SNB opposed the Swiss Sovereign Money Initiative (aka, Vollgeld Initiative), believing that it would impede the Bank's ability to control the money supply.¹⁵⁵ Banks, the Swiss Parliament, and the government also opposed the initiative, causing its sound defeat, with 76% of Swiss voters in opposition. "Don't fix something if it's not broken" seemed to be the prevailing sentiment. Because Switzerland already has one of the healthiest financial systems in the world, many concluded there were too many important uncertainties. The risks were too high for the expected rewards.

¹⁵³ Schweizerische Eidgenossenschaft, Federal Popular Initiative 'For Crisis-Proof Money: Money creation by the National Bank alone! (Sovereign money initiative)', <https://www.bk.admin.ch/ch/d/pore/vi/vis453.html> (Accessed on August 21, 2022).

¹⁵⁴ Control over the issuance of coins and banknotes was not part of the Vollgeld Initiative because the Swiss Confederation has constitutionally held those powers since 1891.

¹⁵⁵ Thomas J. Jordan, Sovereign Money Scheme Would Hurt Swiss Economy—SNB Chairman, January 16, 2018, <https://www.reuters.com/article/uk-swiss-snb-jordan/sovereign-money-scheme-would-hurt-swiss-economy-snb-chairman-idUKKBN1F525I?edition-redirect=uk> (Accessed on August 21, 2022).

The SNB and Non-CBDC Cryptocurrencies¹⁵⁶

While the SNB has been testing the efficacy of its wCBDC, there remain open questions about how it intends to treat the proliferation of new cryptocurrencies and the maturation of existing ones. Currently, the SNB does not perceive unbacked cryptocurrencies, such as bitcoin and ether, as significant threats to its mandate because they are not used widely as units of account or mediums of exchange, and their price volatility makes them unreliable stores of value.

FINMA classifies cryptocurrencies by the functions they perform. Among the reasons for different treatments are concerns about individual and data privacy, the need for bank licensure, and know-your-customer (KYC), anti-money laundering (AML), and anti-terrorist funding rules. In general, cryptocurrencies are regarded by Swiss authorities less as “money” and more as investment assets, which can be used to diversify investors’ portfolios.

While the SNB does not (currently) consider unbacked cryptocurrencies significant threats to its mandate, there are concerns about stablecoins, which have been pegged to official currencies, such as the U.S. dollar and, therefore, to the monetary policies of the respective central banks. Despite being backed by official currencies, stablecoins are claims against particular issuers and not against central banks. Therefore, their credibility is linked directly to the trustworthiness of the issuers.¹⁵⁷ The SNB’s uneasiness is focused mainly on stablecoins tied to one-or-more foreign currencies because large currency inflows and outflows could affect the Swiss franc’s international value and pressure the Bank into undesired foreign-exchange-market interventions. Stablecoins linked to the Swiss franc are perceived as less threatening because the SNB has significant control over domestic monetary policies, which can be used to influence unwanted changes in interest, wage, and inflation rates.

¹⁵⁶ Views in this section are drawn mainly from a speech given by Thomas J. Jordan, Chairman of the Governing Board of the SNB, entitled “Currencies, money, and digital tokens,” at the 30th anniversary of the WWZ and VBÖ, University of Basel, on September 5, 2019, available at https://www.snb.ch/en/mmr/speeches/id/ref_20190905_tjn/source/ref_20190905_tjn.en.pdf (Accessed on August 21, 2022).

¹⁵⁷ The stablecoin’s credibility would depend on having transparent asset backing and a very high liquidity level, which implies a reliable, instantaneous, and unconditional conversion commitment.

Principality of Liechtenstein

In 1980, the Principality of Liechtenstein (population 38,235) signed a currency agreement with Switzerland (population 8.7 million), making the Swiss franc Liechtenstein's national currency and designating the SNB as its central bank, legalizing what had been the practice for almost 100 years.

Conclusion

The SNB conducts monetary policy to serve the country's interests as a whole. To maintain public confidence in financial stability, the Bank operates independently, based on a firm belief by the Swiss government and population-at-large that an independent central bank is the best way to keep inflation low and economic growth steady. More than 100 years of experience have proven this policy correct. Since 2000, the Bank has followed multifaceted monetary strategies, with a primary goal of keeping inflation in the range of 0.0 to 2.0%. Due to the financial crisis (2007 to 2009), sovereign debt crises, and COVID-19 pandemic, the SNB (like many other central banks) has introduced several unconventional monetary measures to derail the threat of deflation, mainly caused by a dangerous appreciation of the Swiss franc.

Because exports are essential to the Swiss economy, exchange rates and price stability will continue to be important in formulating and executing the SNB's monetary policies. Switzerland is a relatively small, open economy, causing the SNB to walk a razor's edge between controlling exchange rates and the money supply. Any attempt to significantly influence the Swiss franc's value can result in sizeable changes in the nation's monetary base and money supply due to the foreign exchange market's disproportionate size relative to the Swiss domestic markets.

Because of its persistent expansionary monetary policies (especially since 2007), the SNB's balance sheet has expanded massively, with much of this increase tied to the accumulation of foreign exchange reserves. Future SNB policies will be influenced by those of the past and the positions they have created. Because its balance sheet is significantly larger, more leveraged, and currency imbalances between assets and liabilities have grown, the SNB's earnings have varied considerably. Unless these factors are controlled, this volatility will be more significant in the future.

Due to the size of the SNB's foreign currency reserves, active discussions have been held regarding the creation of a for-profit Swiss Sovereign Wealth

Fund (S-SWF).¹⁵⁸ Such a fund would free the SNB from political pressures regarding foreign currency management and allow the Bank to focus on stabilizing the Swiss economy. Issues abound, such as:

- How should the S-SWF's profits be distributed?
- What happens when the S-SWF's activities interfere with the SNB's monetary or exchange rate policies? and
- To whom would the S-SWF be accountable?

Switzerland entered the third decade of the twenty-first century determined to strengthen the domestic financial system and Switzerland's global financial role. Progress has been made by introducing new capital and liquidity requirements for banks, addressing the "too-big-to-fail" problem, and confronting the challenges of central bank digital currencies, cryptocurrencies, environmental sustainability, digitization, speculative international capital inflows, and the evolution of Fintech competition and innovation. Because the SNB's future will be tied to basic principles, such as independence, transparency, cooperation, inclusiveness, and acting on behalf of the nation as a *whole*, reforms are likely to be evolutionary rather than revolutionary.

The SNB recognizes CBDCs as potentially paradigm-changing instruments for the future. Among their *potential* benefits are enhanced financial stability, security, and privacy. They also enable more fluent employment of new technologies that can improve the efficiency of cross-border payments, lower costs to consumers, broaden accessibility, increase diversity, and strengthen monetary policy effectiveness.

A key to CBDCs' success will be interoperability at the domestic and international levels so funds can flow seamlessly from one payment system to another. To be effective, a CBDC system would need to involve both the public and private sectors to guarantee interoperability on as wide a scale as possible. Despite the potential benefits, the SNB and Swiss Federal Council share the belief that a wCBDC holds prospective promise, but at present, an rCBDC would not provide Switzerland with net risk-adjusted benefits. The nation already has a highly efficient and productive financial system, and the risks to its stability are too high.

¹⁵⁸ Stefan Gerlach, Yvan Lengwiler, & Charles Wyplosz, A Swiss Sovereign Wealth Fund: Opportunities and Risks: Report 4, December 15, 2021, <https://snb-observatory.ch/wp-content/uploads/2021/12/SNB-Observatory-Report-4-SWF.pdf> (Accessed on August 20, 2022).

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.





8

Swiss Debt Markets

Introduction

Switzerland offers investors and capital-raising firms important structural benefits, such as efficient price discovery and a favorable regulatory environment. Its debt markets feature a variety of advantages to investors and borrowers.

Debt instruments denominated in Swiss francs are attractive to investors due to the portfolio diversification opportunities they offer to global portfolios seeking a safe and stable currency (and as an alternative to the euro). In addition, borrowers benefit from Switzerland's relatively liquid markets, especially for long-term debt instruments, as well as the nation's political stability, high domestic saving rate, substantial placing power, low inflation, open capital markets, lack of exchange controls, reasonably priced legal system, and reputation as a safe haven. Switzerland's position as a leading international financial center is therefore well-founded.

The Swiss debt market has long been a safe retreat for domestic and international investors—especially during times of turmoil. Its impressive resilience during the 2007–2009 financial crisis is just one example of this market's built-to-last quality. The same resilience was observed during the COVID-19 pandemic.¹ Even though the growth rate of Switzerland's debt market has been slow compared to international competitors, it distinguishes

¹ See Swiss Banking, "Corporate banking contributes significantly to productivity of the Swiss economy," October 1, 2020, <https://www.swissbanking.ch/en/news-and-positions/news/corporate-banking-contributes-significantly-to-productivity-of-the-swiss-economy> (Accessed on July 10, 2022).

Table 8.1 Overview of the Swiss franc Debt Markets

	Short-term	Medium- & long-term
Domestic Market		
Public issues	Shallow market	Very active market
Private issues	Shallow market	Fairly active market
Foreign Market		
Public issues	Shallow market	Active market
Private issues	Shallow market	Active market
Euromarket		
Swiss franc deposits/ liabilities	Very active market (Mainly inter-bank & fiduciary accounts)	Shallow market
Private issues	Shallow market	Swiss National Bank has not authorized EuroSwiss franc notes ^a
Public issues	Shallow market	Swiss National Bank has not authorized Public EuroSwiss franc bonds ^a

^aExcept in the context of medium-term note programs
Source Authors' representation

itself by having a non-public borrowers' market that is larger than the public borrowers' segment and a vibrant foreign-issuer market.

Switzerland's Unbalanced Debt Market

Despite its obvious strengths, the Swiss franc's position in the international debt markets is not evenly balanced. In general, the Swiss franc has depth and breadth only in medium- to long-term maturities of the domestic, foreign, and Euromarket segments (see Table 8.1). Participation in the short-term market is relatively weak. Except for the Euromarkets and Swiss franc foreign debt markets, which have been exempt from the Swiss stamp duty since 1993, short-term Swiss franc debt instruments are not competitive internationally.

At year-end 2021, short-term debt securities in Switzerland made up only 2.4 percent of the aggregate volume of outstanding debt securities.² With 7.2 percent, this share is slightly higher in Switzerland's international debt securities segment. Yet, relative to other major international financial centers, it is still a tiny portion of its outstanding debt compared to a global average of 14.4 percent. Figure 8.1 shows the shares of domestic and international

² See Bank for International Settlements, <https://stats.bis.org/statx/srs/table/c3?c=CH&p=20214> (Accessed on August 20, 2022).



Fig. 8.1 Shares of domestic and Short-Term Debt securities, by country: December 2021 (Source Bank for International Settlements (BIS), *Statistics Explorer*, <https://stats.bis.org/statx/srs/table/c1> [Accessed on August 20, 2022]. Full publications are available on the BIS website free of charge: <https://www.bis.org>)

debt securities by country and the percentage of short-term debt securities in each country's international debt securities markets. Hence, Switzerland's short-term securities markets, both in the domestic and foreign segment, are relatively shallow.

Switzerland's Shallow Market for Short-Term Debt

Relative to other international centers, Switzerland's short-term markets are undeveloped. An optimistic explanation is the nation has an exceptionally well-developed, long-term debt market that has reduced the need for short-term financing. Other explanations are the nation's low level of government debt (federal, cantonal, and municipal) relative to many other developed nations, the nation's tax disincentives, the Swiss National Bank's (SNB's) relative absence from this market, modest short-term borrowing by the country's two major banks, moderate demand by Swiss corporations, and the long-term oriented financing by the private sector. Also, currency risks might impact foreign borrowers of Swiss francs.

Low Level of Government Debt

The diminutive size and lopsided maturity composition of Switzerland's state debt are among the reasons for the nation's relatively anemic money market development. Its federalist direct-democracy government structure has kept national deficits lower than in nations with more centralist systems. This structural advantage was enhanced in 2003 when the Swiss government instituted its so-called debt brake to ensure the Confederation's liabilities remain balanced over business cycles, with boom-time surpluses offsetting recessionary deficits.³

Switzerland's debt brake was designed to promote a structurally balanced budget at the Confederation (i.e., federal) level. In concept and practice, it works in unison with a constitutionally mandated upper limit on significant tax rates by controlling government expenditures during a business cycle. The idea behind the debt brake is to maintain fiscal automatic stabilizers, which cushion the country's economy from short-term shocks and focus on balancing the budget from peak-to-peak or trough-to-trough over the more extended business cycle period.

Figure 8.2 illustrates a symmetric business cycle intertwined around mildly expanding government expenditures. During the expansionary stage of the cycle, budget surpluses rise stimulated by passive increases in government tax revenues. Switzerland's debt brake restricts the use of these surplus funds so they can finance passive deficits (that are sure to occur) during recessionary periods. Of course, no nation can count on its business cycles being as uniform as the one depicted. As a result, there are no guarantees that a debt brake rule will create a balanced budget at the end of the business cycle. Nevertheless, this conservative fiscal policy has enormous support in Switzerland and has successfully curbed the nation's deficits and the government's role in the economy.

Switzerland's debt brake combines the benefits of a balanced budget rule and an expenditure rule to contain the government's demand for credit. It also restrains government creep—the tendency for government expenditures to grow as a percent of GDP, with time. Switzerland's debt brake keeps the government's basic expenditures independent of cyclical variations. To protect the nation's social welfare network from political or economic interference, expenditures that fund unemployment compensation and other social welfare

³ See Daniel Müller-Jentsch, "Another Swiss Export: The Debt Brake," *avenir suisse*, December 31, 2012, <https://www.avenir-suisse.ch/en/another-swiss-export-the-debt-brake/> (Accessed on July 5, 2022).

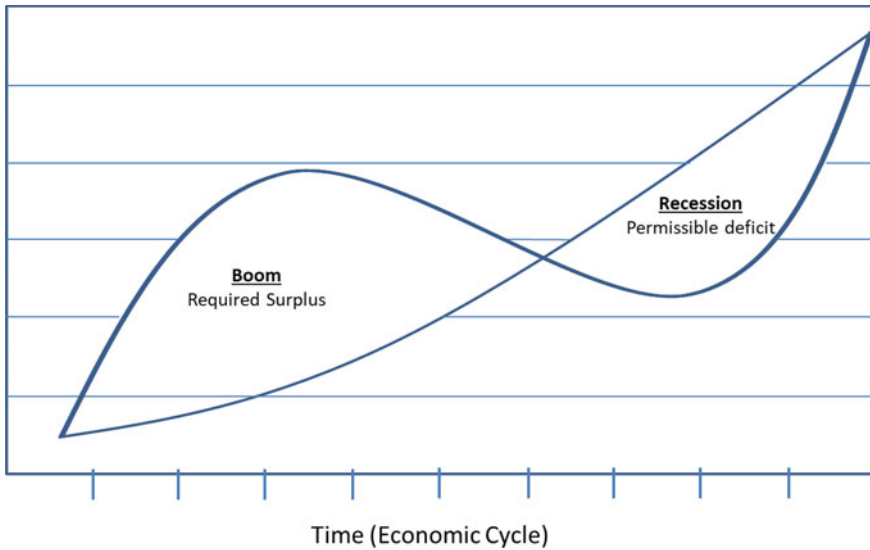


Fig. 8.2 Passive surpluses and deficits around a Short-Term Business Cycle (Source Authors' representation based on Swiss Federal Department of Finance, *The Debt Brake*, <https://www.efd.admin.ch/efd/en/home/fiscal-policy/the-debt-brake.html> [Accessed on July 10, 2022])

programs (i.e., critical expenditure-side automatic stabilizers) are managed in separate accounts. They are not subject to the debt brake.

Under normal conditions, budgeted expenditures must be linked to expected revenues, and they may be increased only if they are financed by additional anticipated receipts or offsetting spending cuts (similarly, tax cuts require offsetting spending cuts). An exemption clause is included in the rule to ensure the debt brake remains sufficiently flexible to handle extenuating circumstances (e.g., natural disasters and severe recessions). This clause allows the Confederation to make extraordinary expenditures that deviate from the rule. To prevent over-reliance on this exception, a legislative provision (the so-called extension) was instituted in 2010, which requires excessive expenditures to be funded in the future years.

The COVID-19 pandemic, for example, triggered such additional expenditures. The resulting extraordinary annual deficits from 2020, 2021, and 2022 were booked to the amortization account each year.⁴ By the end of 2022, the amortization account was expected to show a deficit of CHF 25–30 billion. So far, the supplementary profit distribution by the SNB

⁴ Information in this paragraph is obtained from Swiss Federal Finance Administration, *Debt brake—The federal budget from a debt brake viewpoint*, March 25, 2022, https://www.efv.admin.ch/efv/en/home/finanzberichterstattung/bundeshaushalt_ueb/schuldenbremse.html (Accessed on July 26, 2022).

was used to reduce the amortization account. In March 2022, the Federal Council dispatched a temporary amendment of the *Financial Budget Act* to allow the usage of the SNB’s budget surpluses for reducing the amortization account’s deficit. It has to be kept in mind, though, that these distributions are contingent on SNB’s ability to generate profits in the future.

In economic terms, a secularly rising GDP combined with a cyclically based debt brake is a good recipe for medium-term reductions in the nation’s debt-to-GDP ratio. In Switzerland, this result may be impeded somewhat because the debt-brake rule applies only to the Confederation and not the cantons or municipalities. In smaller entities, budgets are more directly controlled by citizens. In fact, the Confederation’s debt slightly decreased in absolute terms between 2010 and 2020, but cantonal and municipal debt levels grew during the same period (Fig. 8.3).

However, as Fig. 8.4 shows, overall public debt levels as a percentage of GDP decreased substantially between 2005 and 2019. Although the debt brake was passed in 2003, it was not fully operational until 2007. But the

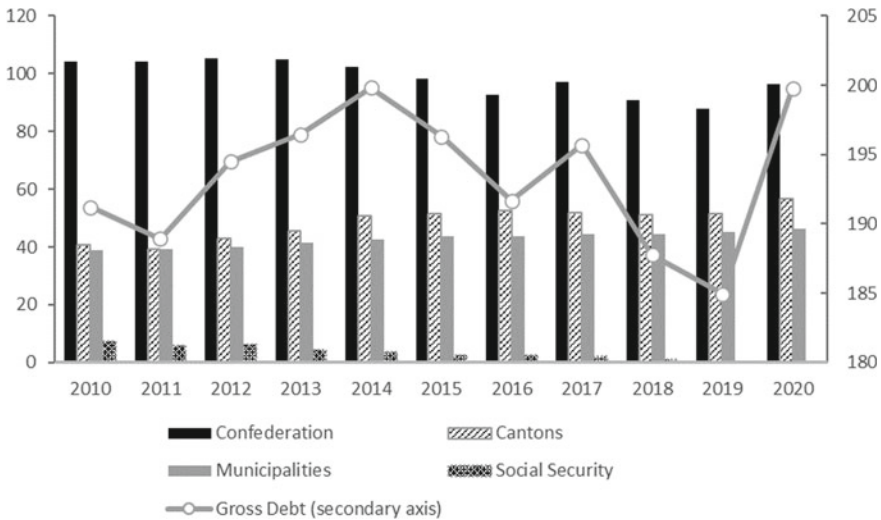


Fig. 8.3 Development of government Debt 2010–2020 (CHF billions) (Source Authors’ calculations based on data available from the Federal Statistical Office, *Expenditure and debt*, <https://www.bfs.admin.ch/bfs/en/home/statistics/general-government-finance/expenditure-debt.html>, *Swiss public finances 2019–2022*, <https://www.bfs.admin.ch/bfs/en/home/statistics/general-government-finance/expenditure-debt.html>, *Switzerland’s financial statistics for 2017*, <https://www.bfs.admin.ch/bfs/en/home/statistics/catalogues-databases/publications.assetdetail.10287487.html>, *Switzerland’s financial statistics for 2013*, <https://www.bfs.admin.ch/bfs/en/home/statistics/catalogues-databases/publications.assetdetail.350884.html> [Accessed on July 12, 2022])

strict implementation has yielded a sharp reduction in both the absolute level of government debt and its size relative to GDP. In 2020, the COVID-19 induced expenditures led to an increase in federal and cantonal debt, which can be seen in Figs. 8.3 and 8.4.

As the COVID-19 pandemic and other exceptional circumstances illustrate, Switzerland's debt brake is still ambitious, and its powers, in the long run, will be tested over time. One reason for skepticism is that Switzerland faces the same demographic profile as many other countries with aging baby boomers, who will need increasing care as time progresses. These increased demands will likely strain Switzerland's public finances and seriously challenge the debt brake. Some cantons led the way by implementing their debt brakes before the Swiss federal government's decisive move. Since the debt

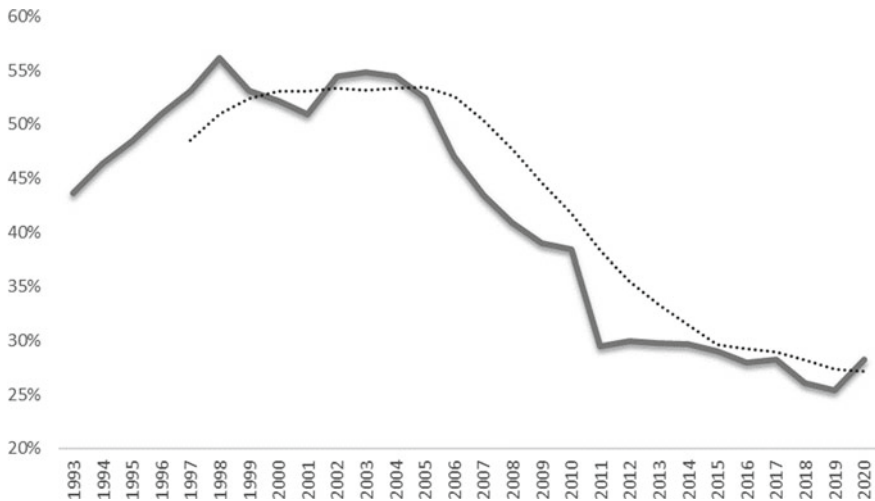


Fig. 8.4 Public Debt as % of GDP 1993–2020 and its moving 5-year average (dotted line) (Source Authors' representation and calculations based on data obtained from: Swiss Federal Department of Finance, <https://www.efv.admin.ch/efv/de/home/themen/finanzstatistik/daten.html#118810996> [Accessed on July 12, 2022]; Federal Statistical Office, *Bruttoinlandprodukt, lange Serie*, <https://www.bfs.admin.ch/bfs/en/home/statistics/national-economy/national-accounts/gross-domestic-product.assetdetail.18584979.html>; *Expenditure and debt*, <https://www.bfs.admin.ch/bfs/en/home/statistics/general-government-finance/expenditure-debt.html>; *Switzerland's financial statistics for 2017*, <https://www.bfs.admin.ch/bfs/en/home/statistics/catalogues-databases/publications.assetdetail.10287487.html>; *Switzerland's financial statistics for 2013*, <https://www.bfs.admin.ch/bfs/en/home/statistics/catalogues-databases/publications.assetdetail.350884.html> [Accessed on July 12, 2022])

brake's introduction at the national level, other cantons have also followed this fiscally conservative path.⁵

Swiss tax revenues are distributed approximately equally among the federal, cantonal, and municipal governments. Yet, the federal government has been responsible for the lion's share of borrowing. Between 2010 and 2020, federal (including social security), cantonal, and municipal shares of total government borrowing averaged 53 percent, 25 percent, and 22 percent, respectively (see Table 8.2). However, the percentage of federal borrowing (including social security) has come down in this period from 58 percent (2010) to 48 percent (2020), while the share of cantonal borrowing rose from 21 percent (2010) to 28 percent (2020).

Tax Disincentives: Federal Stamp Duty

Switzerland's Federal Stamp Duty and the laws that regulate them have long been cited as key reasons for the pallid development of Switzerland's money markets. By raising the tax burden above competitive international levels, they have been blamed for sizeable losses of Switzerland's mutual fund business to Luxembourg and the loss of substantial equity and Eurobond businesses to London during the 1980s after the law was introduced.

The rules governing Switzerland's federal stamp taxes are based on the 1973 *Stamp Duties Act*. For years, this *Act* imposed duties a) on primary issues, b) secondary market trades, and c) some insurance premiums. Until 1993, a flat tax was imposed on all (long- and short-term) security issues and transfers in Switzerland. For long-term Swiss franc instruments, the tax burden had only a minor impact because it could be amortized over many years of the instrument's lifecycle. By contrast, short-term instruments bore the entire tax burden, pricing the Swiss franc instruments out of the broader international markets. Furthermore, the stamp duty encouraged investors to hold their instruments to maturity rather than bear repeated trading-tax charges. As a result, actual and potential liquidity in the secondary markets was relatively weak.

Reform came in September 1992, when the Swiss electorate voted to abolish the stamp duty on money market transactions (e.g., mutual funds

⁵ Lars Feld, Gebhard Kirchgässner, and Christoph Schaltegger, "Municipal Debt in Switzerland: New Empirical Results," *Public Choice*, October 2011, Vol. 149, No. 2, 49–64, https://www.jstor.org/stable/41483722#metadata_info_tab_contents (Accessed on July 26, 2022).

Table 8.2 Swiss Government Borrowing Activity by Level of Government: 2013 to 2021

Government Sector of Issuer	First Settlement Year	Number of Issues	Nominal Value (CHF millions)
Confederation	2013	1	3,551
	2014	2	6,886
	2015	1	3,182
	2016	2	5,840
	2017	2	4,263
	2018	1	2,764
	2019	2	4,270
	2020	0	0
	2021	1	1,410
	Confederation Subtotal	12	32,164
Cantons	2013	24	4,905
	2014	12	2,315
	2015	17	3,375
	2016	11	2,530
	2017	11	2,095
	2018	8	1,471
	2019	13	2,280
	2020	11	2,495
	2021	7	1,325
	Cantons Subtotal	114	22,791
Communities & Cities	2013	11	1,495
	2014	7	885
	2015	7	695
	2016	3	510
	2017	7	820
	2018	4	420
	2019	7	870
	2020	10	1,240
	2021	3	400
	Communities & Cities Subtotal	59	7,335
Grand Total		185	62,290

Source Authors' calculations based on data obtained from Swiss National Bank, https://www.snb.ch/en/ifor/finmkt/chmarket/id/finmkt_chmarket_fedbonds (Accessed on July 13, 2022); SIX Group, *Bond Explorer*, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/bonds/bond-explorer.html> (Accessed on July 13, 2022)

certificates, investment certificates, and dealer trading positions).⁶ In its place, a stamp tax was implemented that varied with a security's maturity. Reaction to these reforms was very positive, as liquidity in Swiss equity markets increased quickly and sizably, whereas issues in the short-term debt market remained relatively costly.

Chapter 12, Swiss Taxes on Investment and Financing, discusses the specifics of Switzerland's stamp tax in greater detail. For now, it is crucial to understand that Swiss politicians have begun to react encouragingly to persistent calls for reform. In December 2011, the Swiss Federal Council abolished (effective March 1, 2012) stamp duties on the issuance of long-term and medium-term bonds, money market instruments, and shares issued in connection with convertible bonds (i.e., so-called *coco* bonds). However, in the public referendum on February 13, 2022, the Swiss population rejected the abolishment of the stamp tax on equity issues. Therefore, the necessity for further reforms persists, with many hoping that Switzerland might, one day, abolish all stamp duties.

SNB's Relative Absence from the Short-Term Market

Another possible explanation for Switzerland's relatively shallow market for short-term certificates is the SNB's relative absence from the market as a regular buyer or seller of federal debt instruments, partly due to its legislative framework. In particular, the SNB cannot purchase newly issued debt securities from the Confederation, the cantons, and the municipalities. However, the SNB can acquire such instruments on the secondary market. Although the SNB has tried to take a more active role in the domestic debt markets since 1979, government debt has been a distant second compared to the broad and deep foreign exchange markets, where changes in the nation's monetary base can be accomplished with less impact on the financial markets. At the year-end of 2021, the SNB held a position of CHF 906 million in Confederation bonds, equaling about 1.5 percent of outstanding Confederation bonds and less than 0.1 percent of SNB's foreign currency investments.⁷

⁶ The Stamp Tax was revised to exempt foreign issues and bank trading. Also, domestic money market instruments and Euromarket securities were exempted from the transfer tax. All domestic issues are still (as of 2022) subject to the stamp tax.

⁷ See Swiss National Bank, *Questions and answers on the SNB's independence and its relationship with the Confederation*, https://www.snb.ch/en/ifor/public/qas/id/qas_unabhaengigkeit#t10; Annual Report 2021, https://www.snb.ch/en/iabout/pub/annrep/id/pub_annrep_2021 (Accessed on August 20, 2022).

Modest Short-Term Borrowing by the Major Banks and Swiss Corporations

The structure of the domestic banking system is another reason for Switzerland's relatively undeveloped money market. Though an active interbank market exists, it is small relative to other nations, largely reflecting the dominance of Switzerland's two major banks and their penchant for financing a large portion of their needs via the interbranch (rather than interbank) market. Similarly, Raiffeisen banks and regional banks have organized their own internal funding systems and rely less heavily on external markets for liquidity.

Moderate Demand by Swiss Corporations

Swiss corporate demand for short-term credit (and, therefore, the supply of tradable, short-term credit instruments) is also tiny compared to many competitor nations due to the tendency of Swiss companies to finance their needs with internal cash flows. When short-term funds are desired, they are usually secured through bank loans and lines of credit rather than the issuance of tradable commercial paper. If debt financing is needed or considered beneficial (e.g., for tax reasons), Swiss corporations, on average, prefer long-term debt to short-term debt. It gives higher planning certainty, even though in times of a normal term structure of interest rates, financing with long-term debt involves a higher cost of capital.

Currency Risk

Also, currency risk has restricted foreign demand growth for short-term Swiss franc debt. Significant risks are associated with unhedged positions in a currency that can appreciate as strongly as the Swiss franc. Even though changes in the spot and forward Swiss franc exchange rates should adjust to offset international interest rate differentials, this cause-and-effect relationship is far from perfect. As a result, borrowers, lenders, and traders often need to moderate exchange-rate risk. To be sure, financial tools are available to hedge these risks, but the added cost reduces demand for Swiss franc money market financing.

Distinguishing Features of Switzerland's Debt Market

Every capital market has its particular characteristics, and Switzerland is no different. One way to characterize Swiss debt markets is by the prominent features of its borrowers. High-quality companies with well-known names and impressive industrial and geographic diversity tap the Swiss debt markets. Switzerland's debt markets also rely on particular accounting standards.

Quality of Swiss Franc Borrowers

Despite the wide range of national and international borrowers (e.g., corporations, governments, central banks, and supranational organizations) that tap the Swiss capital markets each year, the nation has developed a reputation for catering to borrowers with relatively high international credit ratings. While this may be true, ratings alone are insufficient to explain Swiss financing terms and conditions, and borrowing frequency and name recognition are also important.

During the early 1990s, Switzerland was home to a thriving market for privately placed, equity-linked notes of low-capitalized, and high-growth foreign companies (mainly from Asia). Several significant factors contributed to the reversal of this trend, primary among which were the liberalization of Swiss capital exports,⁸ increased importance of liquidity due to Swiss Exchange innovations,⁹ easing of the Swiss (transfer) stamp duty,¹⁰ and the Asian Financial Crisis of 1997.¹¹ All of these developments ultimately made financing conditions less attractive for foreign companies, due to more capital being invested abroad and in different products or shifts in exchange rates like in 1997. We will return to these developments later in this chapter.

⁸ Jean-Pierre Roth, "Geldpolitik ohne Grenzen: Vom Kampf gegen die Internationalisierung des Frankens zur Internationalisierung der Geldpolitik," May 6, 2009, Swiss National Bank, https://www.snb.ch/de/mmr/speeches/id/ref_20090506_jpr/source/ref_20090506_jpr.de.pdf (Accessed on July 27, 2022).

⁹ SIX Group, *Products & Services*, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange.html> (Accessed on July 27, 2022).

¹⁰ Swiss Federal Tax Administration, *Eidgenössische Stempelabgaben*, <https://www.estv.admin.ch/estv/de/home/bundesabgaben/stempelabgaben.html> (Accessed on July 27, 2022).

¹¹ Batten Jonathan A., Warren P. Hogan, and Peter G. Szilagyi, "Foreign Bond Markets and Financial Market Development: International Perspectives," ABDI Working Paper Series, No 173, December 2009, http://asianbondsonline.adb.org/publications/adb/2009/foreign_bond_markets_financial_dev.pdf (Accessed on July 27, 2022).

Name Recognition and Rarity Value

Name recognition and rarity value are essential factors in the Swiss franc debt markets. Unsurprisingly, top-rated foreign companies and countries have been active borrowers on favorable terms in the Swiss market. Yet, lower-rated borrowers have also achieved very competitive borrowing terms—especially when Swiss investors are familiar with their names. Corporations like General Electric (through its finance subsidiary GE Capital) and sovereigns, such as Austria, Germany, Italy, and Belgium, are just a few well-recognized borrowers that tap the Swiss franc debt markets on a fairly regular basis.¹² It is true that the anticipation of more frequent borrowing appearances or the perception of irresponsible fiscal management can make Swiss franc financing more expensive. At the same time, stable and well-respected companies from all corners of the world have found Switzerland to be an active market that offers consistently attractive rates.

Exposure to the Swiss markets is a clear benefit, but over-saturation can lead to wider interest spreads. Casual empiricism bears witness to this relationship by comparing the yield-to-maturity (YTM) of debt issued by two seemingly identical companies (i.e., concerning country, industry, and credit risks) with ostensibly equal debt terms (i.e., similar issue dates, nominal value, and durations). Compagnie de Financement Foncier (CFF) and Valiant Bank's Covered Bond issue allow for an interesting comparison because they are in similar businesses and share the same credit rating. Yet, CFF paid a slightly lower rate for debt with a shorter time to maturity than Valiant Bank (see Table 8.3). In part, the difference might be explained by the size of the company and the borrowing track record. With 18 debt issues between 2017 and 2022, CFF was borrowing an aggregate volume of EUR 21.1 billion. By contrast, Valiant Bank had nine Covered Bond issues for only CHF 2.6 billion in total during the same period.

Industrial and Geographic Diversity of Borrowers

Table 8.4 shows the top 15 foreign corporate public debt issuers in Switzerland ranked by the aggregate amount borrowed in Swiss franc between 2006 and July 2022. Except for SNCF Réseau, all issues took place after 2013. These companies, which represent a diverse set of industries, have all leveraged their reputations as top-rated, US—or European-based borrowers to

¹² SIX Group, *Bond Explorer*, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/bonds/bond-explorer.html> (Accessed on July 10, 2022).

Table 8.3 Comparison of Borrowing Rates on SIX Exchange (Compagnie de Financement Foncier versus Valiant) as of October 28, 2022

Issuer	Rating	Yield to Maturity (%)	Remaining life (years)	Starting Date	Maturity Date	Nominal Amount (SFr)
Compagnie de Financement Foncier	AAA	1.27%	1.38	19.02.2014	19.02.2024	125,000,000
Compagnie de Financement Foncier	AAA	1.90%	6.57	27.04.2022	27.04.2029	260,000,000
Valiant Bank	AAA	1.50%	1.56	23.04.2018	23.04.2024	500,000,000
Valiant Bank	AAA	2.18%	6.83	31.07.2019	31.07.2029	400,000,000

Source SIX Group, *Product Search*, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/news-tools/product-search.html> (Accessed on October 30, 2022)

tap the Swiss franc debt markets regularly. During the first 21 years of the twenty-first century, they accounted for 15.2 percent of the CHF 141 billion borrowed by foreign companies, despite representing only 6.4 percent of the issuers.¹³ In addition to the Swiss franc debt presented in Table 8.4, some of these companies have additional debt tranches issued in other currencies. For example, Deutsche Bahn Finance GmbH has total debt of CHF 3.275 billion, EUR 2.9 billion, and AUD 180 million outstanding on the Swiss bond market.

The regional distribution of international borrowers that tap Swiss capital markets is relatively narrow. As Figs. 8.5 and 8.6 show, on average, 67.4 percent of total foreign public issuance originated in the European Union, United States, and Canada during the 2011 to 2021 period and 55.3 percent in 2021. The main driver of this decline was a reduced demand for Swiss franc debt by European borrowers given the Swiss franc's appreciation relative to the euro. The European Union's share of public borrowing in Switzerland reached an all-time high of 79 percent in 2011. This shift was due, in part, to the United States and Canada slashing their share of borrowing from 18 percent in 2009 to just 6 percent in 2010 as a result of the de-levering efforts

¹³ SIX Group, *Bond Explorer*, Ibid. (Accessed on July 15, 2022).

Table 8.4 Top 15 Foreign Corporate Issuers of Swiss franc Debt, 2006 to July 2022 (CHF million)

Issuer	Country	Cumulative Nominal Value
Deutsche Bahn Finance GmbH	Germany	3,275
Open JS Company Gazprom	Russia	1,750
Verizon	United States	1,700
Russian Railways	Russia	1,650
Metropolitan Life Global Fund	United States	1,530
Total Capital International	France	1,400
Hyundai Capital Services	South Korea	1,350
Shell Int. Finance BV	Netherlands	1,325
Apple Inc	United States	1,250
Korea National Oil Corp	South Korea	1,200
Coca-Cola	United States	1,125
SNCF Reseau	France	1,055
Eli Lilly and Company	United States	1,000
Akademiska Hus AB	Sweden	920
Digital Intrepid Holding B.V.	Netherlands	795

Source SIX Group, *Bond Explorer*, Ibid (Accessed on July 15, 2022)

after the financial crisis. Their share increased again in the following years due to the low-interest rates and reached a maximum of 35 percent in 2015. But the once prevailing majority of the European Union has shrunk considerably compared to other foreign borrowers.

Swiss borrowing is dominated by banks, government entities (i.e., the Confederation, cantons, and municipalities), and, increasingly, the two Pfandbrief institutes. To reduce the chances of Switzerland experiencing a mortgage-led financial meltdown, such as the United States, Spain, and other countries experienced during the 2006 to 2012 period, FINMA approved, in June 2012, a set of mortgage financing standards proposed by the Swiss Bankers Association. Most important among them for borrowers were a minimum down payment percentage and the compulsory amortization of principal. For lenders, the new rules modified the nation's *Capital Adequacy Ordinance* which requires banks to keep sufficient capital to back credit, market, operational, and further risks. These new rules took effect in July 2012. From 2013 on, the Basel III standards were gradually implemented into Swiss law, and capital requirements based on credit risks, market risks, and operational risks have been amended. The cornerstones concerning the capital requirements are increased risk sensitivity and less reliance on internal

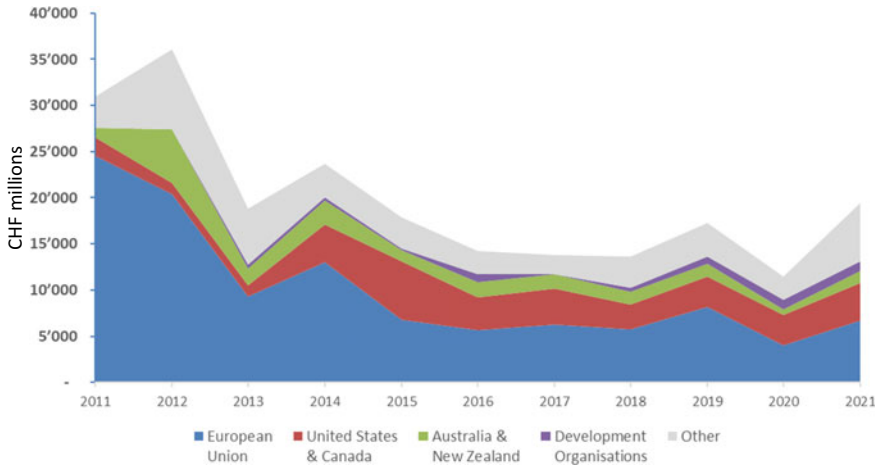


Fig. 8.5 Publicly floated bonds of foreign borrowers (in CHF millions): By country group (2011 to 2021) (Source Authors' calculations based on data obtained from Swiss National Bank, *Capital market borrowing of Swiss franc bond issues*, [https://data.snb.ch/en/topics/finma/cube/capmabond?fromDate=2011-Q1&toDate=2022-Q1&dimSel=D1\(EU,UE,VSK,KZ,L,MOA,AN,E,T1\),D0\(E,R,NM\)](https://data.snb.ch/en/topics/finma/cube/capmabond?fromDate=2011-Q1&toDate=2022-Q1&dimSel=D1(EU,UE,VSK,KZ,L,MOA,AN,E,T1),D0(E,R,NM)) [Accessed on July 16, 2022])

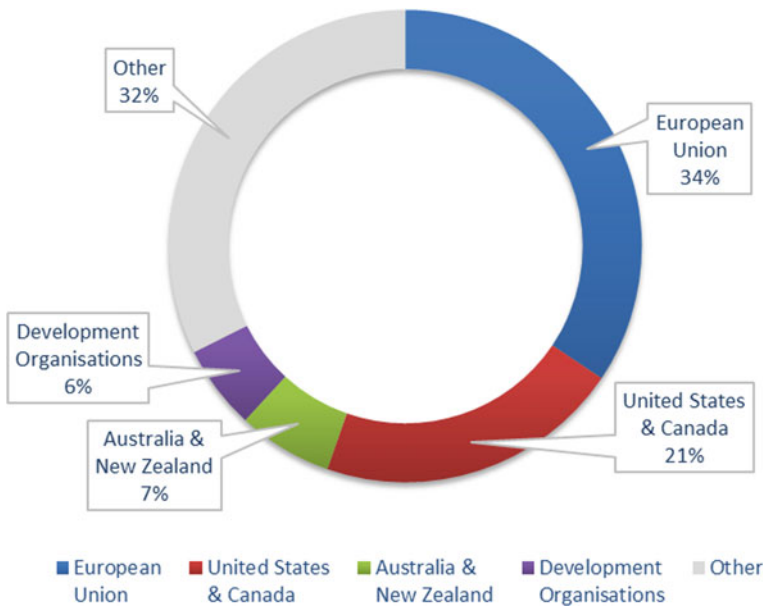


Fig. 8.6 Publicly Floated Swiss franc bonds of foreign borrowers: By country group, 2021 (Source Authors' calculations based on data obtained from Swiss National Bank, *Capital market borrowing of Swiss franc bond issues*, [https://data.snb.ch/en/topics/finma/cube/capmabond?fromDate=2011-Q1&toDate=2022-Q1&dimSel=D1\(EU,UE,VSK,KZ,L,MOA,AN,E,T1\),D0\(E,R,NM\)](https://data.snb.ch/en/topics/finma/cube/capmabond?fromDate=2011-Q1&toDate=2022-Q1&dimSel=D1(EU,UE,VSK,KZ,L,MOA,AN,E,T1),D0(E,R,NM)) [Accessed on July 16, 2022])

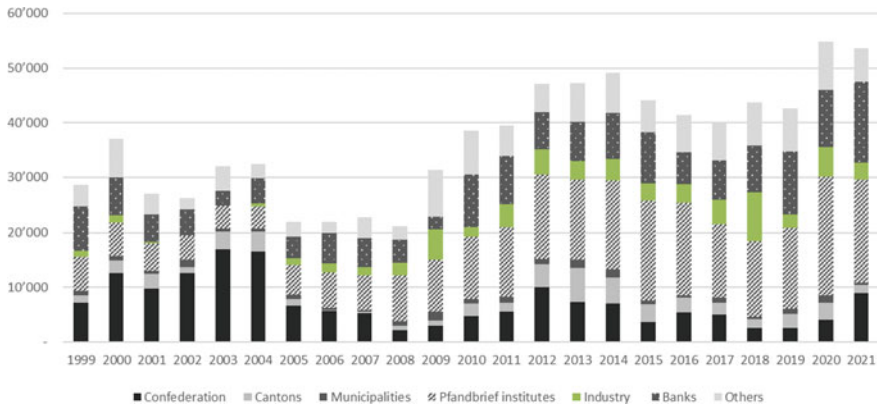


Fig. 8.7 Publicly Floated Swiss franc Bonds of Swiss Borrowers, by Issuer Group: 1999 to 2021 (CHF millions) (Source Swiss National Bank, *Capital market borrowing of Swiss franc bond issues*, [https://data.snb.ch/en/topics/finma/cube/capmabond?fromDate=2021-Q1&toDate=2022-Q1&dimSel=D1\(B0,K,G,P,VEGW,I,B1,V,UD,U,T0\),D0\(E,R,NM\)](https://data.snb.ch/en/topics/finma/cube/capmabond?fromDate=2021-Q1&toDate=2022-Q1&dimSel=D1(B0,K,G,P,VEGW,I,B1,V,UD,U,T0),D0(E,R,NM)) [Accessed on July 19, 2022])

models. The next consultation for amending the *Capital Adequacy Ordinance* is scheduled for October 2022.¹⁴

Figure 8.7 shows domestic borrowers' composition of publicly floated Swiss franc debt issues between 1999 and 2021. Confederation borrowing fell dramatically as a percent of total issues due largely to the 2003 introduction of Switzerland's debt brake. From a peak of 53 percent of domestic Swiss franc public issues in 2003, it fell to just 10 percent in 2008 and 2009 and then increased to 21 percent in 2012, before reaching an all-time low of 6 percent in 2018. This small share resulted from a low refinancing need during this period and a total volume growth that was driven by the Pfandbrief institutes and banks in a booming real estate market. In 2021, the share jumped again to 17% due to higher debt refinancing. Confederation borrowing in the five years from 2017 to 2021 was only about 59 percent of its proportionate level in the years 1999–2016.

In 2021, the top three borrower groups accounted for 79 percent of the domestic market's outstanding public Swiss franc debt. In particular, the federal government accounted for 16.8 percent, the Pfandbrief institutes for 35 percent, and banks for 27.6 percent (see Fig. 8.8). Bank debt issues dropped to 8 percent of domestic public borrowing in 2009 during the global financial crisis. The collapse of asset prices forced many banks to

¹⁴ FINMA, *FINMA revises capital requirements for banks*, July 4, 2022, <https://www.finma.ch/en/news/2022/07/20220704-mm-anhoerung-basel/> (Accessed on July 22, 2022).

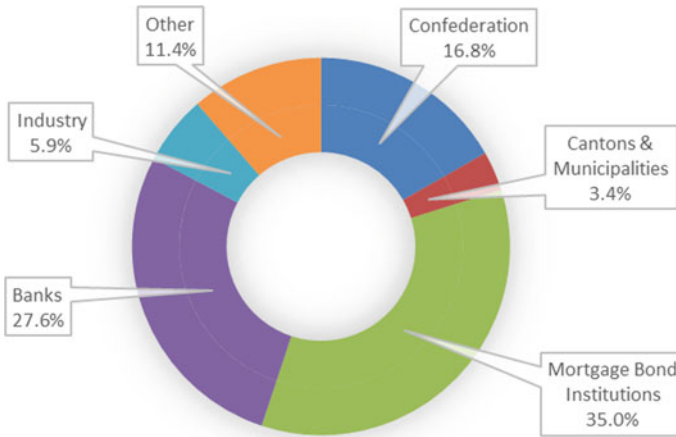


Fig. 8.8 Publicly Floated Swiss franc Bonds of Swiss Borrowers, by Issuer Group: 2021 (Source Swiss National Bank, *Capital market borrowing of Swiss franc bond issues*, [https://data.snb.ch/en/topics/finma/cube/capmabond?fromDate=2021-Q1&toDate=2022-Q1&dimSel=D1\(B0,K,G,P,VEGW,I,B1,V,UD,U,T0\),D0\(E,R,NM\)](https://data.snb.ch/en/topics/finma/cube/capmabond?fromDate=2021-Q1&toDate=2022-Q1&dimSel=D1(B0,K,G,P,VEGW,I,B1,V,UD,U,T0),D0(E,R,NM)) [Accessed on July 19, 2022])

recapitalize with equity instead of issuing new debt. This number was far below the 23-year (1999 to 2021) average of 19 percent. Bank debt issues rebounded sharply in 2010 to nearly a quarter of total borrowing once the economic growth picked up again, and then fell slightly after the Euro crisis before climbing to 27.6 percent in 2021 due to the low-interest rates and the booming economy. Another notable trend has been the growing role of the Pfandbrief institutes (i.e., Pfandbriefzentrale der Schweizerischen Kantonalbanken and Pfandbriefbank Schweizerischer Hypothekarinstitute) in the course of the real estate market development. We will return to the topic of Pfandbrief bonds later in this chapter. In 2022, financing conditions have deteriorated due to the inflation-induced interest rate increase and Russia's invasion of Ukraine.

Debt financing reached a new dimension in March 2020 when the COVID-19 bridging loan program was launched. In response to the decreed shutdown due to the COVID-19 pandemic, a national financial aid package was tied within just a few days by a joint effort of the SNB, the Swiss banks, the Federal government, and FINMA. The goal was to ensure liquidity and unbureaucratic access to bridge financing at an interest rate of zero percent and for five years for companies hit by the crisis. Banks were encouraged to allocate "COVID-19 loans" up to CHF 500,000 to small and medium-sized companies (SMEs) based on a simple declaration.

To refinance these lending activities in the public interest, to keep potential credit risk off the balance sheet of participating banks, and to provide the banking system with additional liquidity, the SNB made a COVID-19 refinancing facility (CRF) available.¹⁵ Its purpose was to enable banks to draw covered loans from the SNB against this facility, in which mainly the Federal government served as a guarantor. “COVID-19 loans plus,” ranging from CHF 500,000 to CHF 20 million, received an 85 percent guarantee from the Federal government, hereby incentivizing banks to apply more care than with the COVID-19 loans.

Under the program that started on March 26, 2020, 138,000 loans with an aggregate volume of CHF 17 billion were granted. Many of these loans were paid back just a few months after the economy recovered. By February 2022, 112,000 loans with an aggregate volume of CHF 12 billion were still outstanding.¹⁶ It was part of the plan that some credit risks might arise given the cursory credit check. But having a simple and effective solution that helps to keep the real economy and the financial system afloat was seen to be way more critical. Despite some weaknesses in the lending process, the coordination between the different financial market players in designing and implementing an efficient and effective program in a concise period is exemplary.

The Size of the Swiss Franc Domestic and Foreign Debt Market

As of June 30, 2022, the aggregate amount of outstanding foreign and domestic Swiss franc debt listed on the SIX Swiss Exchange was CHF 575 billion, thereof CHF 142 billion in foreign Swiss franc bonds and approximately CHF 430 billion in domestic Swiss franc bonds.¹⁷ Based on this total volume of outstanding Swiss franc bonds, foreign issues accounted for 24.7 percent. This share is likely to decline in the years ahead because the fraction of new foreign bond issues has dropped remarkably after 2009, mainly due

¹⁵ SNB, https://www.snb.ch/en/ifor/finmkt/operat/id/finmkt_crf (Accessed on August 22, 2022).

¹⁶ Swiss Federal Council, <https://www.admin.ch/gov/de/start/dokumentation/medienmitteilungen/bundesrat.msg-id-87036.html#:~:text=Abz%C3%BCglich%20der%20bereits%20vollst%C3%A4ndig%20zur%C3%BCckbezahlt,en,rund%2012%20Milliarden%20Franken%20ausstehend> (Accessed on August 22, 2022).

¹⁷ Authors' calculation based on data obtained from SIX Group, *Bond Explorer*, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/bonds/bond-explorer.html> (Accessed on July 15, 2022). At year-end 2021, the total volume of outstanding Swiss franc debt securities was USD 602 billion (approximately CHF 549 billion), see BIS, *Statistics Explorer*, <https://stats.bis.org/statx/srs/table/c1> (Accessed on August 20, 2022).



Fig. 8.9 Share of Foreign Bonds in Publicly Floated Swiss franc Bonds: 1990–2022 (Source Authors' calculations based on data obtained from Swiss National Bank, *Capital market borrowing of Swiss franc bond issues*, [https://data.snb.ch/en/topics/finma/cube/capmabond?fromDate=2021-Q1&toDate=2022-Q1&dimSel=D1\(B0,K,G,P,VEGW,I,B1,V,UD,U,T0\),D0\(E,R,NM\)](https://data.snb.ch/en/topics/finma/cube/capmabond?fromDate=2021-Q1&toDate=2022-Q1&dimSel=D1(B0,K,G,P,VEGW,I,B1,V,UD,U,T0),D0(E,R,NM)) [Accessed on August 21, 2022])

to a diminished issuing activity of European borrowers in the course of the Swiss franc's appreciation relative to the euro. Between 2020 and 2022, this share was only 23 percent, on average (Fig. 8.9).

Based on the volume of outstanding Swiss franc bonds, Swiss federal government issues accounted for 17 percent and other domestic issues for 58 percent, as of June 2022 (see Fig. 8.10). In 2011, the total volume was CHF 573 billion. 2011 serves as a reference year after the financial crisis.

The overwhelming majority (82 percent) of outstanding international Swiss franc public issues in 2022 were fixed-rate instruments, whereas floating rate instruments and equity-linked securities (convertibles and warrants) made up 18 percent of the market (see Fig. 8.11).¹⁸

Swiss Franc Public Issues

A helpful way to analyze the Swiss debt markets is by the size and nature of the most active Swiss franc public issues. The most developed and internationally active Swiss financial market is for debt instruments with medium- to long-term maturities. Domestically, the public market is used extensively by

¹⁸ Bank for International Settlements, *Statistics Switzerland Q1 2022*, <https://stats.bis.org/statx/srs/table/c3?c=CH&p=20221> (Accessed on July 18, 2022).

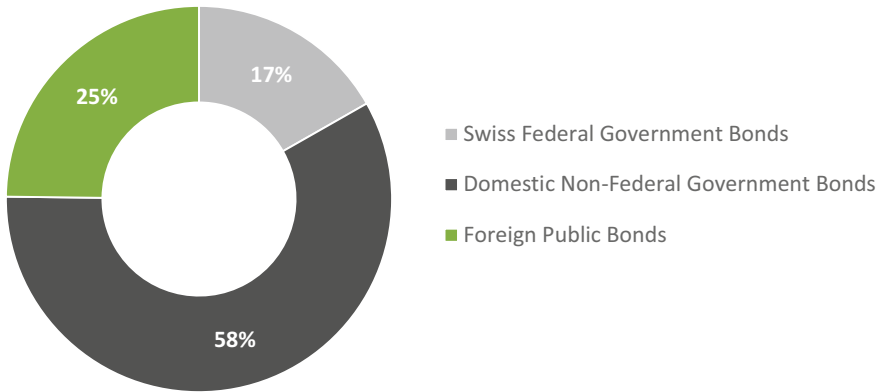


Fig. 8.10 Composition of Swiss public bonds outstanding, June 2022 (Source Authors’ calculations based on data obtained from SIX Group, *Bond Explorer*, *Ibid.* [Accessed on July 15, 2022])

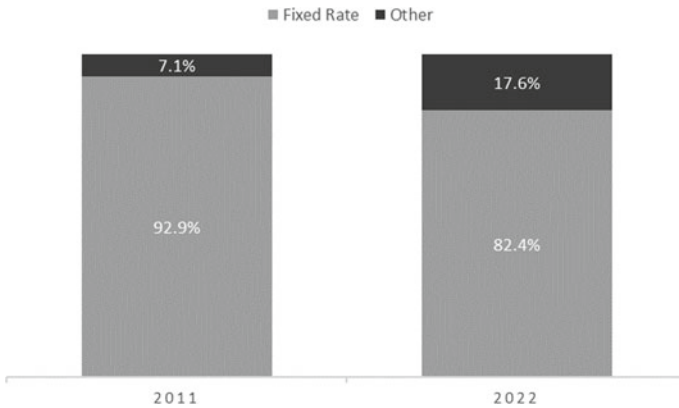


Fig. 8.11 Composition of Public International Swiss franc Medium—and Long-Term Debt Outstanding by Instrument Type: End 2011 and Q1 2022 (Source Authors’ calculations based on data obtained from Bank for International Settlements (BIS), *Statistics Switzerland Q1 2022*, <https://stats.bis.org/statx/srs/table/c3?c=CH&p=20221> [Accessed on July 18, 2022]. Full publications are available on the BIS website free of charge: www.bis.org)

banks, the three levels of government, the two Pfandbrief institutes, utilities, the construction industry, industry firms like Roche and Novartis, infrastructure players, such as Swisscom (the leading Swiss telecom provider) and Eurofima (a supranational organization headquartered in Basel that finances

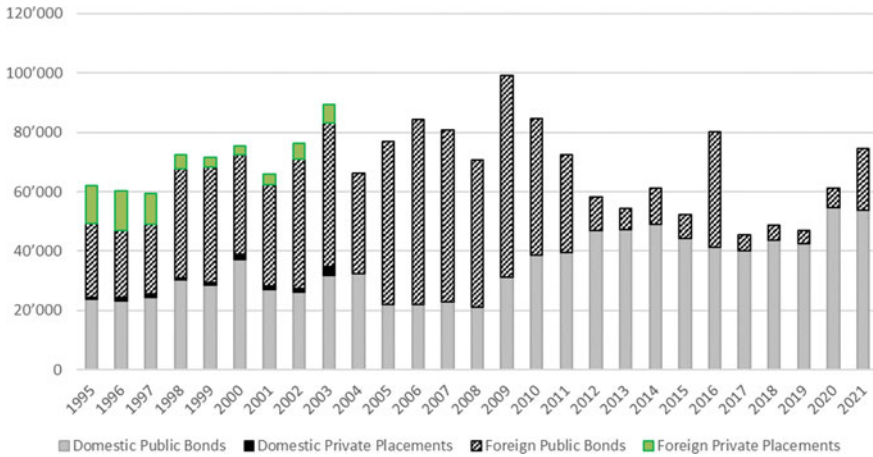


Fig. 8.12 Composition of Swiss franc Note and Bond Issues, 1995 to 2021 (CHF millions) (Source Authors' calculations based on data obtained from Swiss National Bank, *Capital market borrowing of Swiss franc bond issues*, [https://data.snb.ch/en/topics/finma/cube/capmabond?fromDate=2010-Q1&toDate=2022-Q1&dimSel=D1\(T0\),D0\(E\)](https://data.snb.ch/en/topics/finma/cube/capmabond?fromDate=2010-Q1&toDate=2022-Q1&dimSel=D1(T0),D0(E)) [Accessed on July 18, 2022])

the development of rail transportation in Europe).¹⁹ A cocktail of convenient and flexible bond arrangements is available and issue costs (interest and commissions) are among the lowest in the world. Fig. 8.12 shows the composition of Switzerland's note and bond issues from 1995 to 2021. "Domestic" refers to issuers domiciled in Switzerland, "foreign" to issuers domiciled outside of Switzerland. A bond is labeled "public" when listed on the exchange and "private" if this is not the case. The absence of domestic and foreign private placements after 2003 was because the SNB stopped tracking them when the *Revised National Bank Act* came into force on May 1, 2004.²⁰

Switzerland's high saving rate offers a continuous flow of medium- and long-term funds to the domestic credit market, thereby providing borrowers with markets that have considerable breadth and depth. Domestic borrowers favor straight, fixed-rate issues with maturities between 5 and 12 years, but the most common issue maturity has been 10 years, which is also close to the maturity of an average issue (10.7 years).²¹ On a weighted-basis, the average

¹⁹ SIX Group, *Bond Explorer*, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/bonds/bond-explorer.html> (Accessed on July 15, 2022).

²⁰ This change occurred due to the alignment of SNB's Lombard facility with its repo system. Consequently, only collateral acceptable for repo transactions could be used, which was not the case for private placements. See SNB, https://www.snb.ch/en/mmr/reference/repo_lombard/source/repo_lombard.en.pdf (Accessed on August 22, 2022).

²¹ Based on SIX Group, *Bond Explorer*, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/bonds/bond-explorer.html> (Accessed on July 15, 2022).

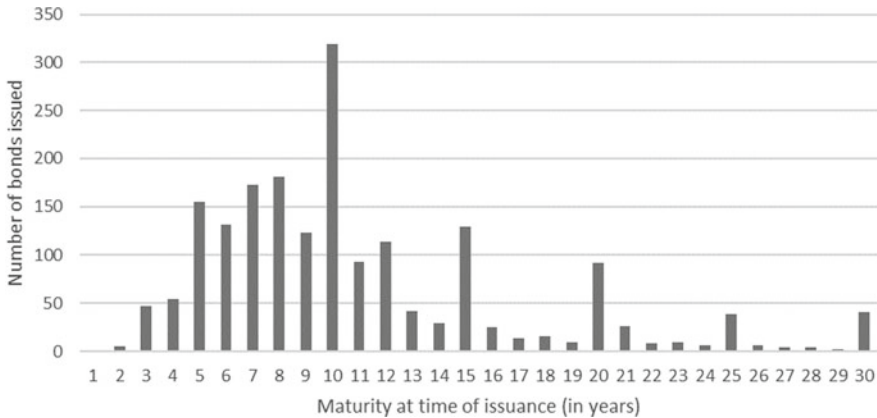


Fig. 8.13 Distribution of bond maturities at issuance in the Swiss franc bond market 1999–2022 (Source Authors' calculations based on data obtained from SIX Group, *Bond Explorer*, *Ibid.* [Accessed on July 15, 2022])

maturity is 10.1 years. Fig. 8.13 shows the maturity distribution in the Swiss franc bond market since 1999.

Switzerland is the borrowing destination for many nations. In July 2022, 10 countries accounted for almost 77 percent of total outstanding public Swiss franc foreign debt (see Table 8.5).²² The foreign bond market in Switzerland has thrived, largely because it has been exempted from the Swiss stamp duty since 1993. As a result, these debt instruments have become particularly attractive to foreign investors, especially from countries with no, or inadequate, double taxation agreements with Switzerland. Despite these advantages, the volume has come down massively over the past decade, from CHF 329 billion in June 2012 to CHF 142 billion in July 2022.

Swiss Franc Private Placements

Private placements or notes are unadvertised, high-denomination securities issued (usually through syndicates) to a limited number of investors, with very competitive issuance costs.²³ They are interesting alternatives for

²² Based on SIX Group, *Bond Explorer*, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/bonds/bond-explorer.html> (Accessed on July 18, 2022).

²³ Private placement costs can be lower than for public bonds with comparable maturities. This is due to fewer intermediaries involved and lower regulatory disclosure requirements, see Tima T. Moldogaziev, Robert A. Greer, Jekyung Lee, "Private Placements and the Cost of Borrowing in the Municipal Debt Market," *Public Budgeting & Finance*, August 2019, <https://doi.org/10.1111/pbaf.12235>.

Table 8.5 Outstanding Foreign Swiss franc Debt on SIX Swiss Exchange by Country as of June 30, 2022

Country	Market Value of Debt Outstanding (CHF millions)	Percent of Foreign CHF Debt Outstanding (in %)
United States	21,716	15.28
France	14,920	10.50
Germany	12,509	8.80
Canada	12,265	8.63
Netherlands	11,088	7.80
United Kingdom	9,634	6.78
Australia	7,340	5.16
Luxembourg	7,047	4.96
South Korea	6,855	4.82
Austria	5,541	3.90
Russia	3,250	2.29
Chile	3,172	2.23
Spain	3,165	2.23
Liechtenstein	3,065	2.16
Cayman Islands	2,729	1.92
Sweden	2,425	1.71
Rest of world	15,412	10.84
Total	1,42,132	100.00

Source SIX Group, *Bond Explorer*, *Ibid.* (Accessed on July 18, 2022)

investors who are willing to place funds in multiple units of CHF 50,000 for medium- to long-term maturities. The yields on these instruments are usually higher than those on more marketable bonds. To provide a secondary market, issuing banks are typically willing to acquire customer notes at prevailing yield levels. Customarily, coupon payments occur annually, and investors wishing to purchase such notes buy them during the underwriting period.

As mentioned earlier in this chapter, the market for private placements seems to have declined since the mid-1990s. It is difficult to know precisely how active this market is today because the SNB stopped tracking it on May 1, 2004, when the *National Bank Act* entered law. Due to a change in the repo system that occurred at the same time, private placements were not eligible as collateral in repo transactions anymore.²⁴ Even before this change, several significant factors marginalized the importance of private placements, which accounted for CHF 14.5 billion of the market (24 percent of all domestic and foreign debt issues) in 1996 but fell to just CHF 8.9 billion (10 percent

²⁴ Swiss National Bank, *Historical Time Series 2—Capital and Stock Markets, May 2007*, Footnote 1 of Tables 2.1a & 4.1a, https://www.snb.ch/n/mmr/reference/hiszt_km/source/hiszt_km.n.xls (Accessed on July 28, 2022).

of issues) in 2003 (see Fig. 8.12). We will return to the causes of these developments later in this section.

Foreign private placements date back to the late 1960s and early 1970s. Unlike public bonds, Swiss law does not deal specifically with such notes. Instead, they fall under the general framework of securities law in the *Swiss Code of Obligations*.²⁵ The absence of bureaucratic restrictions made these placements very popular. It kept costs low, but they lost some of their lusters when Switzerland amended its *Banking Act* on February 1, 1995, thereby abandoning its strict international capital controls. These changes made public debt more attractive and reduced the relative advantage of private placements.

Under the revised *Act*, the SNB replaced the authorization requirement for foreign entities issuing Swiss-franc-denominated securities with an information duty. For banks, a mandatory notification on all prospective bond and note issues was set into force. The SNB's mandatory notification was a valuable financial indicator in exceptional periods when sizeable international capital flows might threaten Swiss monetary policy. Yet, even this requirement appeared as too demanding. On May 1, 2004, Switzerland abandoned this information duty entirely with the enactment of the *National Bank Act*.²⁶

Usually, private placement notes are not printed (for cost reasons) and, therefore, are held in dematerialized form, in the issuing banks, for the benefit of investors. In contrast to the United States, Switzerland has no strict limitation on the number of purchasers (maximum of 35 in the United States)²⁷ of privately placed notes. Moreover, no prospectus is required.²⁸ Although the number of potential investors to whom a private placement can be offered is not clearly defined, it should be limited to a relatively small circle of potential customers. Following a conservative best practice, these notes should be offered to 20 or fewer potential investors (regardless of their sophistication) to qualify as a private offering. But this rule has been criticized as being too stringent.²⁹ For example, the European Union's *Prospectus Directive* sets the

²⁵ See Code of Obligations (SR 220), Articles 965–989.

²⁶ Swiss National Bank, *Historical Time Series 2—Capital and Stock Markets, May 2007*, Footnote 1 of Tables 2.1a & 4.1a, https://www.snb.ch/n/mmr/reference/hiszt_km/source/hiszt_km.n.xls (Accessed on July 28, 2022). Also see SNB, https://www.snb.ch/en/mmr/reference/repo_lombard/source/repo_lombard.en.pdf (Accessed on August 22, 2022).

²⁷ US Securities and Exchange Commission, *Private placements—Rule 506(b)*, <https://www.sec.gov/education/smallbusiness/exemptofferings/rule506b> (Accessed on July 28, 2022).

²⁸ See Jacques Iffland & Patrick Schleiffer, “Switzerland,” in Lenz & Staehelin, “Securities Finance 2019,” p. 95, https://www.lenzstaehelin.com/fileadmin/user_upload/publications/GTDT_Securities_Finance_Switzerland_2019.pdf (Accessed on July 28, 2022).

²⁹ Ibid.

limit at 150 investors per member state, and the *Swiss Federal Act on Collective Investment Schemes (CISA)* holds that collective investment schemes in the form of SICAV (a collective investment scheme with variable capital), regardless of the number of potential investors, do not qualify as public offerings.³⁰

Earlier in this chapter, Fig. 8.12 profiled the diminished relative importance of Switzerland's private placement market. Much of the decline was due to the foreign segment's sharp retreat from this market between 1995 and 2003. While myriad factors spirited the change, four are particularly important, namely (1) the Amended *National Banking Act*, (2) the Importance of Liquidity, (3) the Asian Financial Crisis, and (4) Indirect Effects.

Amended National Banking Act

Simplicity (less effort and lower costs) is one of the primary motivations for borrowers to issue private placement debt. Issuers are willing to pay dearly to avoid the regulations and requirements of public issues. Therefore, as public debt issuance in Switzerland became less demanding, the appeal of private placements diminished. For example, in February 1995, the SNB ended its authorization requirements for foreign entities issuing Swiss-franc-denominated securities and replaced it with an information duty, making public issues more attractive relative to private issues.³¹

Importance of Liquidity

Another major factor fueling the decline of foreign private placements was the increased importance of liquidity, which was driven both directly and indirectly by process and product innovations at Swiss exchange. The introduction of fully-automated bond trading on August 16, 1996, directly reduced the appeal of private debt placements because they could not be easily traded using the new system.³² The introduction of US dollar-denominated bonds on July 31, 1998, and the introduction of euro-denominated bonds to the SIX's Swiss franc bond segment in 1999 precipitated an easing of

³⁰ See Collective Investment Schemes Act (CISA, SR 951.43), <https://www.fedlex.admin.ch/eli/cc/2006/822/en>, Art. 45.

³¹ Swiss National Bank, *Historical Time Series 2—Capital and Stock Markets*, May 2007, p. 10. https://www.snb.ch/en/mmr/reference/hisztz_kapitalmarkt_book/source/hisztz_kapitalmarkt_book.en.pdf (Accessed on July 28, 2022).

³² SIX Group, *Shaping the Future of Trading*, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/trading/trading-platform/microwave.html> (Accessed on July 25, 2022).

Switzerland's (transfer) stamp tax, which further increased the importance of liquidity. This critical revision of the stamp tax, which came into force on April 1, 1999, made active trading of public bonds more attractive by eliminating the tax requirement imposed on foreign counterparties that engage in transfers of foreign debentures with Swiss counterparts, either directly or through intermediaries.³³

Asian Financial Crisis

Outside of Switzerland, perhaps the single most important factor causing the shrinkage of foreign private placements in Switzerland was the Asian Financial Crisis of 1997,³⁴ which had significant direct and indirect consequences. An immediate effect was an increased aversion by Asian companies, in general, and Japanese companies, particularly, to finance their operations in a currency as strong as the Swiss franc. Until 1997, Japanese companies were leading borrowers of Swiss francs, but the drop in demand was sudden and sharp. In 1996, Japanese entities issued private placement notes worth more than CHF 4.5 billion, which accounted for nearly 34 percent of all foreign private Swiss franc borrowing. By contrast, in 1998, these same companies issued just CHF 343 million, representing a meager 7.1 percent of borrowing.³⁵

The Asian financial crisis also reduced foreign reliance on nonstandard debt instruments in the private market. As a result, the popularity of equity-linked private placement instruments collapsed as lenders sought less risky investments. Proof of these effects is in the numbers. Foreign private issues with warrants attached fell from CHF 4.78 billion in 1996 to just CHF 1.80 billion in 1997 before falling out of use entirely in 1998.³⁶ Meanwhile, foreign convertible private placements fell from CHF 2.05 billion in 1996 to CHF 800 million in 1997 to CHF 117 million in 1998. Although

³³ Swiss Federal Tax Administration, *Eidgenössische Stempelabgaben*, Ibid., https://www.estv.admin.ch/dam/estv/de/dokumente/estv/steuersystem/dossier-steuerinformationen/d/d-eidgenoessischen-stempelabgaben.pdf.download.pdf/d_eidg_stempelabgaben_d.pdf (Accessed on August 20, 2022).

³⁴ Batten, Jonathan A., Warren P. Hogan, and Peter G. Szilagyi, "Foreign Bond Markets and Financial Market Development: International Perspectives," ABDI Working Paper Series, No 173, December 2009, https://asianbondsonline.adb.org/publications/adb/2009/foreign_bond_markets_financial_dev.pdf (Accessed on July 10, 2022).

³⁵ Swiss National Bank, *Historical Time Series 2—Capital and Stock Markets*, May 2007, Table 4.1a, https://www.snb.ch/n/mmr/reference/histz_km/source/histz_km.n.xls (Accessed on July 28, 2022).

³⁶ Ibid., Table 4.2a.

they represented just 2.4 percent of foreign private issues in 1998, convertibles continued to be used beyond that point as they provided some upside potential combined with downside protection.³⁷

Indirect Effects

The crisis also indirectly reduced the size of Switzerland's foreign private placement market (and those of other major financial centers). Many Asia-Pacific nations used the financial calamity as a reason to build their domestic bond markets.³⁸ As a result, domestic corporations could avoid the double mismatch of currency and maturity on their balance sheets—a combination that compounded the Asian damages in the 1997 crash. The rapid market growth in the Asia-Pacific region (excluding Japan, Australia, and New Zealand) of 61.4 percent between 1995 and 2000 in contrast to only 18.6 percent for all Bank for International Settlements markets shows the success of these initiatives. Consequently, demand for Swiss private placements declined, as many Asian companies could satisfy their borrowing needs at home. Swiss franc private placements from this region fell from CHF 603.6 million in 1996 to CHF 274 million in 1997 before falling to CHF 27 million in 1998 and then disappearing entirely.

Hybrid Securities and Convertible Bonds

In the early 1990s, healthy stock markets increased the popularity of convertible bond issues and bonds with warrants. Between 1990 and 1994, convertibles and warrants represented 1.5 percent and 8.4 percent, respectively, of all domestic public issues (with fixed-rate issues accounting for the other 90.1 percent).³⁹ This trend reversed in the mid-1990s with the decline of Japanese interest in these financial instruments. Between 1995 and 2007 (the last year for which the SNB reported public issuance data by bond category), these two equity-linked categories represented only 4.1 percent of all

³⁷ Ibid.

³⁸ Batten, Jonathan A., Warren P. Hogan, and Peter G. Szilagyi, "Foreign Bond Markets and Financial Market Development: International Perspectives," ABDI Working Paper Series, No 173, December 2009, https://asianbondsonline.adb.org/publications/adb/2009/foreign_bond_markets_financial_dev.pdf (Accessed on July 10, 2022).

³⁹ Swiss National Bank, *Historical Time Series 2—Capital and Stock Markets*, May 2007, Table 2.2, https://www.snb.ch/n/mmr/reference/hiszt_km/source/hiszt_km.n.xls (Accessed on July 28, 2022).

issuance, with fixed-rate and other⁴⁰ issues accounting for 95.7 percent and 0.2 percent, respectively.⁴¹ Notably, warrants accounted for just 0.9 percent over this period. With capital markets getting more efficient and providing many ways of generating payoff structures, there seemed to be no market for warrant bonds anymore. Since 2002, there have been no further public issues of bonds with warrants.

The development has been different for convertible bonds that give the instrument holder the right to convert the bond into equity (within the contractual terms). In contrast to bonds with warrants (where the bond continued to exist after the warrant was exercised), the convertible bond does not persist as a bond after its conversion into equity. The conversion is attractive in case of favorable market conditions since investors may exercise their right to convert the bond into shares. Convertible bonds, therefore, provide upside potential. At the same time, they grant some downside protection as investors may receive the redemption value of the bond in case the stock price is too low for conversion. Because this right benefits investors, convertible bonds pay a slightly lower coupon rate compared to straight bonds. This difference depends on the likelihood that investors will convert the convertible bond sometime in the future. Typically, low but promising stock market valuations and low-interest rates are favorable conditions for issuing convertible bonds.

In most years, listed convertible bonds play a minor role on the bond market. In 2008, however, the Swiss market has seen a record volume of CHF 21.3 billion in convertible bonds being issued, mainly driven by the refinancing of UBS and Credit Suisse during the financial crisis. UBS alone issued CHF 19 billion in mandatory convertible bonds (MCNs) in 2008. In contrast to typical convertible bonds, the conversion of MCNs is mandatory at some predefined point in time. As a consequence, their coupon rate typically is quite high because economically, MCNs can be seen as equity. Therefore, the markets also price in the risk premia of equity.

The years after this exceptional period have again shown modest volumes of listed convertible bond issues. In July 2022, 10 companies had Swiss franc convertible bonds listed with a total amount issued of CHF 4.3 billion.⁴² In addition, four companies had contingent capital bonds issued and listed with

⁴⁰ This includes non-equity-related warrant issues (e.g., bonds with currency/gold options) and synthetic bonds.

⁴¹ Swiss National Bank, *Monthly Statistical Bulletin*, February 2008, Table F2b, https://www.snb.ch/en/mmr/reference/stat_monatsheft_2008_02/source/stat_monatsheft_2008_02.en.pdf (Accessed on July 28, 2022).

⁴² Basilea (2), Ciscor Technologies, Crealogix Holding, Cembra Money Bank, Dufry One B.V. (NL), Indorsia (2), Santhera, Sika, Swiss Prime Site (2), Zur Rose Finance B.V. (NL).

an aggregate volume of CHF 3.8 billion.⁴³ This corresponds to 0.74 percent and 0.66 percent, respectively, of the aggregate amount issued on the Swiss bond market.

Government Bond Market

The Swiss government bond market is relatively small compared to most other developed nations. For years, the federal government ran budget surpluses, thereby avoiding the need to borrow. Still, in the early 1990s, deficits rose sharply.⁴⁴ At the end of 1994, the federal debt stood at CHF 76 billion, up nearly 40 percent from CHF 55 billion in 1992. This trend was fueled by increased demands from federal pension funds and Confederation-affiliated enterprises, such as the Swiss post and telephone company (PTT until 1998) and the Swiss railroad company (SBB).⁴⁵ Even though Switzerland's Constitution mandates balanced budgets at the Confederation level, the undisciplined fiscal policy ignoring this principle resulted in rising deficits during the 1990s. This background produced overwhelming support for a more effective expenditure rule. As a result, on December 2, 2001, 85 percent of Swiss voters approved Constitutional provisions for the Swiss national debt brake (see above). This measure, which took full effect in 2007, has provided the bite necessary for Switzerland to aggressively pursue fiscal policies that resulted in low debt levels—especially when compared to other countries (see Table 8.6). At the same time, as explained earlier in this chapter, additional expenditure is possible in exceptional situations, such as the COVID-19 pandemic.⁴⁶

At times of heightened awareness by financial investors regarding sovereign fiscal discipline, Swiss government bonds have been considered a particularly riskless asset, characterized by low credit premia and hence low yields. Swiss Confederation bonds are exclusively denominated in the domestic currency. The Confederation publicly lists its bonds on the SIX Swiss Stock Exchange for investors to buy and sell in a transparent and regulated environment.

⁴³ Raiffeisen (9 bonds), UBS (3 bonds) as well as Münchener Hypo (Germany), and JSC VTB Bank (Russia).

⁴⁴ A large portion of these deficits was induced by recession rather than being structural in nature.

⁴⁵ Swiss Federal Finance Administration, *Debt brake—The federal budget from a debt brake viewpoint*, March 25, 2022, https://www.efv.admin.ch/efv/en/home/finanzberichterstattung/bundeshaushalt_ueb/schuldenbremse.html (Accessed on July 26, 2022).

⁴⁶ Swiss Federal Finance Administration, *Debt brake—The federal budget from a debt brake viewpoint*, March 25, 2022, *Ibid.* (Accessed on July 26, 2022).

Table 8.6 International Comparison of Gross Financial Liabilities Relative to GDP: 2021 versus 2011 (Percent of GDP, ranking based on 2021 figures)

	2021	2011	Change in %
Greece	222	114	96
United States of America	150	131	15
Portugal	145	110	32
Great Britain	143	103	39
Spain	143	78	82
Canada	130	108	21
Belgium	128	112	14
Slovakia	89	51	74
Hungary	89	95	-7
Australia	84	46	84
Poland	68	62	10
Netherlands	66	74	-10
Sweden	59	54	9
Denmark	50	60	-16
Norway	49	35	42
Switzerland	40	43	-6

Source Authors' calculations based on data obtained from OECD (2022), *General government debt*, <https://data.oecd.org/gga/general-government-debt.htm> (Accessed on July 18, 2022)

The federal government issues these interest-bearing securities with maturities up to fifty years, while most issues have maturities between 15 and 30 years.⁴⁷ The average maturity of the currently traded Swiss government bonds at the time of their issue was 24.8 years. Regularly, additional tranches are issued that are fungible with earlier issues.⁴⁸ In 1980, the federal government began issuing bonds using a Dutch auction system.⁴⁹ They are issued on an almost monthly basis,⁵⁰ and the closing date for subscription is the second Wednesday of the issue month.⁵¹

⁴⁷ SIX Group, *Bond Explorer*, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/bonds/bond-explorer.html> (Accessed on July 15, 2022).

⁴⁸ Only eight of the issues between 2016 and 2022 were new; the rest were additional tranches of prior issues. See, Swiss National Bank, *Public Bonds of the Swiss Confederation: Results*, www.snb.ch/en/mmr/reference/ch_bonds_res/source/ch_bonds_res.en.pdf (Accessed on July 19, 2022).

⁴⁹ In a Dutch auction, the offering price is determined after all bids have been submitted. Investors indicate the price they are willing to pay and the quantity they are ready to buy. From these bids, the offering price is the highest at which the entire offering can be sold.

⁵⁰ August is usually excluded, and a few scheduled months are designated as optional.

⁵¹ Swiss National Bank, *Issuance Calendar 2022* (for public bonds of the Swiss Confederation), https://www.snb.ch/en/mmr/reference/bundesanleihen_kalender_2022/source/bundesanleihen_kalender_2022.en.pdf (Accessed on July 28, 2022).

As with all things in life, one should be careful of one's wishes. Switzerland seems to have brought government creep under control, but, at the same time, significant future reductions in the absolute and/or relative amount of government security issues are likely to exacerbate liquidity problems in Swiss debt markets and challenge notions of what a risk-free Swiss franc interest rate is. While the nation is not walking a razor's edge—because it has been able to reverse an unsustainable trend in federal financing—serious attention must be paid, in the future, to answering fundamental questions dealing with the proper (or desired) role of government debt in the Swiss franc market.

Pfandbriefe

Pfandbriefe⁵² are an essential source of real estate loan refinancing. These instruments are a special form of mortgage-backed bonds, but have to be clearly distinguished from instruments not issued by one of the two Pfandbrief institutions. Pfandbriefe are issued by two government-authorized and controlled financial institutions—Pfandbriefzentrale der Schweizerischen Kantonalbanken (PBZ) and Pfandbriefbank Schweizerischer Hypothekarinstitute (PBB). Switzerland created PBZ and PBB to provide Swiss residents with real estate mortgages at stable and affordable interest rates.⁵³ They are perfect examples of financial practicality and wisdom. Rather than having each of Switzerland's many mortgage banks issue its mortgage-backed securities, PBB and PBZ consolidate and issue securities backed by many banks' mortgages, deriving significant cost savings through economies of scale.

Swiss Pfandbrief Institutes

Switzerland's Pfandbrief institutions are efficient organizations. PBZ outsources all of its operations to Zürcher Kantonalbank, and PBB operates with fewer than 10 employees. Having a common cause, the main difference between the two is their membership. PBB was founded in 1930 for non-cantonal mortgage-issuing institutions, and PBZ was founded the following

⁵² Pfandbriefe is the plural of Pfandbrief.

⁵³ FINMA, *Central mortgage bond institutions*, <https://www.finma.ch/en/supervision/central-mortgage-bond-institutions/> (Accessed on July 21, 2022); Pfandbriefzentrale Schweizer Kantonalbanken, *Business purpose*, <https://www.pfandbriefzentrale.ch/en/pfandbriefzentrale/geschaeftszweck.php> (Accessed on July 21, 2022); Pfandbriefbank schweizerischer Hypothekarinstitute, *Purpose according to the Pfandbrief Act (Pfa)*, <https://pfandbriefbank.ch/en/> (Accessed on July 21, 2022).

year for cantonal banks.⁵⁴ By law, only cantonal banks can become members of PBZ. In the case of PBB, any bank can gain membership so long as it is headquartered in Switzerland and approved for membership by the PBB's directors.

Pfandbriefe, which in English means pledge letters, are mostly standardized, fixed-rate securities backed by first liens on Swiss real estate mortgage loans. Swiss law (*Pfandbriefgesetz, PFG*) and Swiss ordinances (*Pfandbriefverordnung, Pfv*)⁵⁵ give PBB and PBZ exclusive rights to issue them. As evidence of its staying power and stable heritage, since the Act's passage in 1930, PFG has been modified only four times, each with only marginal changes.

Pfandbrief securities have become increasingly more important for refinancing mortgages. Today, they finance approximately 13.4 percent of all Swiss mortgages and are issued as either public bonds through banking syndicates or private placements by the Pfandbrief institutes.⁵⁶ In 2010, the share was 9.1 percent. Public issues are listed on the SIX Swiss Exchange, and whenever possible, existing issues with terms (e.g., maturity and yield) identical to those desired are reopened. The maturities of these Pfandbrief securities run from 3 to 30 years, with an average maturity of 14 years.

Growth of Pfandbrief securities is somewhat limited by a 2 percent equity-to-Pfandbrief liability requirement put on PBB and PBZ by PFG (Art. 10). Furthermore, new issue sizes are determined by the smaller of member banks' demand for Pfandbrief loans or investors' (i.e., Pfandbrief holders) demand for securitized mortgage debt. New issues average CHF 576 million and range from CHF 100 million to CHF 1 billion. The annual issue volume has been CHF 13.1 (2021), 13.5 (2020), 12.8 (2019), and 11.7 billion (2018).⁵⁷

Figure 8.14 provides an overview of the Pfandbrief process:

⁵⁴ Chapter 3 has a fuller discussion of these institutions.

⁵⁵ Pfandbriefgesetz (SR 211.423.4), https://www.fedlex.admin.ch/eli/cc/47/109_113_57/de, Pfandbriefverordnung (SR 211.423.41), https://www.fedlex.admin.ch/eli/cc/47/121_125_70/de

⁵⁶ Authors' calculation based on data obtained from SNB: mortgage loans, [https://data.snb.ch/en/warehouse/BSTA/cube/BSTA@SNB.JAHR_K.BIL.PAS.APE.DPZ?fromDate=2015%26toDate=2021%26dimSel=KONSOLIDIERUNGSSTUFE\(K\),INLANDAUSLAND\(T,I\),WAEHRUNG\(T,CHE,EUR\),BANKENGRUPPE\(A30,G10,G15,G20,G25,G35,G45,A10,A25,G65,G70,S10\)](https://data.snb.ch/de/warehouse/BSTA/cube/BSTA@SNB.JAHR_B.BIL.AKT.HYP?fromDate=2010%26toDate=2021%26dimSel=KONSOLIDIERUNGSSTUFE(B),INLANDAUSLAND(T,I,A),WAEHRUNG(T,CHE,EUR,JPY,USD,U),FAELIGKEIT(T,ASI,KUE,RLZ,B1M,M13,M31,J15,U5J,IMM),BANKENGRUPPE(A30,G15); mortgagebonds, <a href=) (Accessed on August 20, 2022).

⁵⁷ SIX Group, *Bond Explorer*, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/bonds/bond-explorer.html> (Accessed on July 15, 2022).

1. It starts when the mortgagee (e.g., Homeowner B) takes a loan from Bank C, based on the purchase price or refinance value of a home (A). In return, the bank receives a lien on the property, which prohibits the mortgagee from transferring the property's title without permission from the bank until the mortgage debt is extinguished.
2. In need of funding, Bank C uses this mortgage obligation as collateral for a loan from a Pfandbrief institution (D). In contrast to other nations, where the mortgage changes possession, in Switzerland, borrowing banks with known customers and therefore recognized risks keep these loans on their balance sheets and manage them.
3. The Pfandbrief institutions then issue securities to investors (E), mainly Swiss pension funds, institutional investors, banks, investment funds, and some retail investors.

Safety of Pfandbrief Securities

Swiss Pfandbrief institutions have enjoyed an unblemished record of zero investor losses since their inception more than 90 years ago. The quality of these securities is so high that the SNB permits their use as collateral in central bank-related repo transactions. Moody's Aaa Stable credit rating for Swiss Pfandbriefe also speaks favorably of these debt instruments' safety, as well as the Pfandbrief process, the strong legal framework that supports it, and the rules and ordinances that define and regulate Pfandbrief issues.⁵⁸ Legal protections that apply to Pfandbrief securities limit many of their issue terms, such as percentage coverage, qualifying underliers, maximum loan-to-value ratios, and valuation rules. These rules also designate the federal regulator (FINMA), who is responsible for monitoring and overseeing Pfandbrief institutions.

Significant additional investor protection springs from the structure of the Swiss Pfandbrief model (see Fig. 8.14). Pfandbrief loan obligations are not only backed by the cash flows from underlying mortgages but also by the property's proprietor, member banks (and all their assets because Pfandbriefe remain on their books), and the Pfandbrief institutions themselves.⁵⁹ In the event of default by a debtor bank, investors, and the Pfandbrief institutes have a preferential claim on the loan collateral. Other creditors can claim

⁵⁸ Pfandbriefbank, *Creditor Protection*, <https://www.pfandbriefbank.ch/en/der-schweizer-pfandbrief/creditor-protection/> (Accessed on July 28, 2022).

⁵⁹ Credit Suisse, *White Paper No. 9—Swiss Covered Bonds: Investors' Flight to Quality*, May 27, 2009, [https://pfandbriefbank.ch/sites/de/assets/File/Research_Berichte/20090527%20Investors%27%20flight%20to%20quality%20\(Credit%20Suisse%20AG\).pdf](https://pfandbriefbank.ch/sites/de/assets/File/Research_Berichte/20090527%20Investors%27%20flight%20to%20quality%20(Credit%20Suisse%20AG).pdf) (Accessed on July 28, 2022).

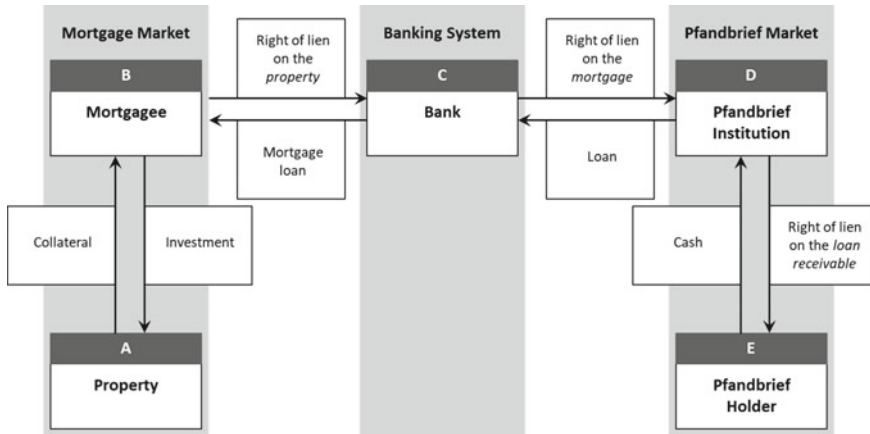


Fig. 8.14 Collateralization Provisions in the Swiss Pfandbrief Model (Source Authors' representation. The concept was adopted from Credit Suisse, *White Paper No. 9—Swiss Covered Bonds: Investors' Flight to Quality*, May 27, 2009, [https://pfandbriefbank.ch/sites/de/assets/File/Research_Berichte/20090527%20Investors%27%20flight%20to%20quality%20\(Credit%20Suisse%20AG\).pdf](https://pfandbriefbank.ch/sites/de/assets/File/Research_Berichte/20090527%20Investors%27%20flight%20to%20quality%20(Credit%20Suisse%20AG).pdf) [Accessed on July 28, 2022])

only what remains in the cover pool after Swiss Pfandbrief creditors are fully satisfied.

Among the most significant additional layers of protection are⁶⁰:

Covered loans: By Swiss law (PfG), the principal and interest payments on Pfandbrief securities must be covered 100 percent by Swiss-based mortgages.

Cover Pool:

- **Management:** The collection of mortgages backing a Pfandbrief issue is called the “cover pool.” All the assets within this pool must be listed in a Swiss cover register (i.e., Pfandregister). Mortgages listed in the cover pool stay on the banks' books and are managed by the banks themselves, with supervision and monitoring by the Pfandbrief Institutions. PBZ, the institute of cantonal banks, has its cover pool actively managed by the member banks, most of which benefit from a state (i.e., cantonal) guarantee.⁶¹ PBB, which serves the non-cantonal banks, has an electronic “cover pool,” whose value is updated and evaluated daily, with these valuation assessments made independently from the methods used by member banks.
- **Composition and diversification:** Swiss cover pools consist primarily of residential properties whose default rates are considerably lower than

⁶⁰ Ibid.

⁶¹ Banque Cantonale de Genève SA and Banque Cantonale Vaudoise SA have no cantonal guarantee and Berner Kantonalbank enjoys only a limited guarantee.

commercial property mortgages. Pfandbriefbank's cover pool consists only of residential mortgages.⁶²

- Redress: The cover pool is monitored daily. Nonperforming or otherwise impaired loans must be pruned and replaced, by the lender, with performing loans that can restore the pool's valuation to pre-stressed levels. Moreover, banks must provide supplementary collateral if interest income from the mortgages falls below the pool's total interest expenses.⁶³
- Overcollateralization: This safety measure increases the chances that negative valuation shocks can be absorbed. Cover pool assets must exceed Pfandbrief loans made to PBB and PBZ member banks by 8 and 15 percent, respectively.⁶⁴ The relatively high overcollateralization requirement for the PBZ compensates for the fact that, unlike the PBB, its cover pool is decentralized, hence making it more prone to underestimating collateral requirements. In *Article 26*, the law on Pfandbriefe requires a minimum overcollateralization of 5 percent for non-members.
- Separation: Mortgages in the cover pool must be separated from other mortgages in banks' portfolios to prevent the comingling of assets.

Down payments: Residential mortgages require down payments of at least one-third (i.e., loan-to-value ratios equal to or less than 66.7 percent on first-grade mortgages),⁶⁵ and commercial loans require 50 percent down.⁶⁶

Slight risk of simultaneous defaults: Even under worst-case scenarios, it is hard to imagine circumstances under which Pfandbrief investors might incur losses. For this to happen, the Pfandbrief institutions, banks, and borrowers would have to default, and the value of the land would have to plummet in value.

Minimum financial risks: New Pfandbrief securities must be denominated in Swiss francs, and their terms must match the maturity and repayment profiles of member banks' loans from the Pfandbrief institutions. This restriction eliminates (or mitigates) currency, interest, liquidity, and duration risks.⁶⁷

⁶² Pfandbriefbank, *Creditor Protection*, Ibid. (Accessed on July 28, 2022).

⁶³ See Credit Suisse, *White Paper No. 9—Swiss Covered Bonds: Investors' Flight to Quality*, May 27, 2009, Ibid. (Accessed on July 28, 2022).

⁶⁴ European Covered Bond Council, *European Covered Bond Fact Book 2021*, p. 477, <https://hypoc.org/ecbc/publications/fact-book/> (Accessed on July 17, 2022).

⁶⁵ Pfandbriefbank, *Creditor Protection*, Ibid. (Accessed on July 28, 2022).

⁶⁶ See Credit Suisse, *White Paper No. 9—Swiss Covered Bonds: Investors' Flight to Quality*, May 27, 2009, Ibid. (Accessed on July 28, 2022).

⁶⁷ Ibid.

No pre-payment risk: Member-bank borrowers who wish to prepay their loans must purchase outstanding Swiss Pfandbriefe with a serial number that matches their loans (i.e., not with cash), thereby extinguishing both an asset and a liability on the Pfandbrief institutes' balance sheets.

A second level of due diligence: The Pfandbrief institutions thoroughly check the eligibility of cover assets, thereby providing a second set of underwriting eyes on the underlying assets.

Small counterparty risk: Investors face minimal counterparty risk because their transactions are with the Pfandbrief institutions, not the banks. Therefore, investors' claims are backed not only by the cash flows from the underliers but also by the full faith and credit of the Pfandbrief institutions' equity, earnings on invested equity funds, and implicit government guarantees, which created these financial intermediaries.

As a result of these many layers of protection and the conservatism built into the Swiss Pfandbrief model, Switzerland's mortgage bond market is safe in any sense of the word. When the 2007–2009 financial turmoil heightened concerns about counterparty risk and, in turn, nearly froze the interbank money markets, Switzerland's Pfandbrief model proved to be a critical mechanism for providing liquidity across the Swiss banking system. Bolstered in part by a flight to quality, the Swiss Pfandbrief market remained liquid throughout the crisis, as evidenced by low Asset Swap (ASW) spreads compared to those in Europe and the United States.⁶⁸

There is concern that a substantial increase in the issuance of Swiss Pfandbrief securities could jeopardize the institutes' capitalization.⁶⁹ For instance, if the CHF 2 billion Pfandbriefe private placement loan to UBS following the September 2008 collapse of Lehman Brothers had turned sour, these institutes could have faced significant liquidity risk at maturity. Several measures mitigate this risk, such as subordinated debt, which can now serve as capital for temporary Pfandbrief transactions. In addition, significant private placements require approval from FINMA, and lenders have agreed to allow the Pfandbrief institutes to stretch their repayment schedule under extreme conditions. Swiss Pfandbriefe will likely continue their safe-haven role and, as a result, maintain tight asset swap spreads.

⁶⁸ Ibid.

⁶⁹ Ibid.

Size and Growth of the Pfandbrief Market

Total outstanding Pfandbrief debt exceeds Confederation liabilities. In July 2022, there were about 273 publicly issued Swiss Pfandbriefe outstanding worth CHF 157.3 billion, compared to total Confederate debt equal to nearly CHF 96.4 billion end of 2020.⁷⁰ From 1995 to 2021, these securities experienced an average annual growth rate of 6.6 percent, and, in recent years (especially since enactment of the Confederate debt brake), they have outpaced new issues of federal debt.⁷¹ During the past decade, the annual growth rate was 8.5 percent. In 2021 alone, PBB and PBZ issued Swiss Pfandbriefe amounting to CHF 13.1 billion, and the net volume was CHF 8.4 billion.⁷²

Figure 8.15 provides an overview of the growth and composition of Pfandbriefe since 1995. In general, supplies are limited relative to potential domestic and foreign demand, which has made these securities largely unavailable to foreign investors. Foreign holdings have been further discouraged by Swiss withholding taxes.⁷³ A notable exception to the lack of foreign involvement in this market is a growing demand for Pfandbriefe as a financing instrument by foreign-controlled banks operating in Switzerland. Even though this growth in demand has been strong, the low base from which it started has only translated into a diminutive 2.7 percent share of the market in 2021.⁷⁴

Switzerland's financial institutions have tried to tap the latent foreign demand for securities backed by mortgages on Swiss real estate by creating new instruments. Between 2009 and 2014, UBS launched a series of covered bonds, issued as Eurobonds in euros (EUR), Norwegian krone (NOK), and United States dollars (USD), and backed by Swiss mortgages (not Pfandbriefe). The several issues done by January 2011 amounted to EUR 5.75 billion (equivalent to CHF 8.535 billion), reaching a maximum Swiss franc

⁷⁰ SIX Group, *Bond Explorer*, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/bonds/bond-explorer.html> (Accessed on July 15, 2022).

⁷¹ *Ibid.*

⁷² *Ibid.*

⁷³ Johannes A. Bürgi & Elisabeth Moskriz, "Pfandbriefbasierte Kreditfinanzierungen," In: Susan Emmenegger, Institut für Bankenrecht, Universität Bern (eds.), «Schweizerische Bankenrechtstagung 2010—Kreditrecht», Basel, 2010, p. 133, walderwyss rechtsanwälte, <https://www.walderwyss.com/de/publikationen/p3?autor=johannes-buergi> (Accessed on July 22, 2022).

⁷⁴ At year-end of 2021, Foreign Banks in Switzerland had a volume of CHF 4.05 billion in loans from the two Swiss mortgage bond institutions. See Swiss National Bank, Loans from central mortgage bond institutions, [https://data.snb.ch/en/warehouse/BSTA/cube/BSTA@SNB.JAHR_K.BIL.PAS.APE.DPZ?facetSel=toz_bsta_bankengruppe\(begriff_bg_a25\)&dimSel=KONSOLIDIERUNGSTUFE\(K\),INLANDAUSLAND\(T,I\),WAEHRUNG\(CHF,EUR,T\),BANKENGRUPPE\(A25\)](https://data.snb.ch/en/warehouse/BSTA/cube/BSTA@SNB.JAHR_K.BIL.PAS.APE.DPZ?facetSel=toz_bsta_bankengruppe(begriff_bg_a25)&dimSel=KONSOLIDIERUNGSTUFE(K),INLANDAUSLAND(T,I),WAEHRUNG(CHF,EUR,T),BANKENGRUPPE(A25)) (Accessed on July 20, 2022).

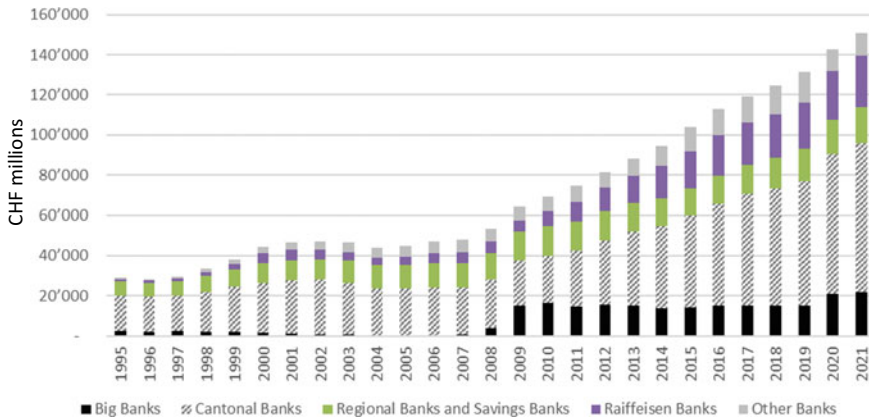


Fig. 8.15 Loans of the two Swiss Pfandbrief institutes by category of banks: 1995–2021, in CHF millions (Note Due to partly missing data for Cantonal Banks, Regional Banks and Savings Banks, and Raiffeisen Banks during 2011–2014, these datapoints were interpolated *Source* Authors’ calculations based on data obtained from Swiss National Bank. For 2015–2021: *Loans from central mortgage bond institutions*, [https://data.snb.ch/en/warehouse/BSTA/cube/BSTA@SNB.JAHR_K.BIL.PAS.APF.DPZ?facetSel=toz_bsta_bankengruppe\(begriff_bg_a25\)&dimSel=KONSOLIDIERUNGSSTUFE\(K\),INLANDAUSLAND\(T,I\),WAEHRUNG\(CHF,EUR,T\),BANKENGRUPPE\(A25\)](https://data.snb.ch/en/warehouse/BSTA/cube/BSTA@SNB.JAHR_K.BIL.PAS.APF.DPZ?facetSel=toz_bsta_bankengruppe(begriff_bg_a25)&dimSel=KONSOLIDIERUNGSSTUFE(K),INLANDAUSLAND(T,I),WAEHRUNG(CHF,EUR,T),BANKENGRUPPE(A25)) [Accessed on July 28, 2022])

equivalent of CHF 16.1 billion in 2013 and declining since then. In 2018, the outstanding volume was CHF 4.6 billion; in May 2022, only one series was left of NOK 700 million (equivalent to CHF 93.2 million). UBS’s covered Swiss real estate bonds are relatively riskier than Pfandbriefe because this market is unregulated, lacks legal protections afforded to Swiss Pfandbriefe, and terms are negotiated strictly between issuers and buyers.⁷⁵ Therefore, they do not carry the high-quality imprimatur of Swiss Pfandbriefe.

Sustainable Bonds

In recent years, investor demand has shifted toward activities following environmental, social, and governance (i.e., ESG) standards, excluding non-compliant investments. With the launch of Green Bonds, SIX Swiss Exchange introduced a new bond type in 2014. The first issue of CHF 350 million

⁷⁵ Lukas Wyss & Johannes Bürgi, “The launch of the first covered bond programme in Switzerland set up outside the framework of the Swiss statutory covered bond system,” *walderywys rechtsanwälte*, <https://www.walderywys.com/en/publications/p3?author=lukas-wyss> (Accessed on July 22, 2022).

was placed on the market by the European Investment Bank on February 4, 2014. By July 2022, 80 bonds labeled “green bonds” had been issued with a total market volume of CHF 22.3 billion.⁷⁶ To be flagged as “green bonds” by SIX, they must comply with the criteria used in the CBI Green Bond Methodology.⁷⁷

In 2019, Raiffeisen issued a Sustainability Bond of CHF 100 million. Currently, it is the only security in this segment. Since 2020, five Sustainability-Linked Bonds got listed from three companies: Novartis Finance (in 2020, CHF 1.85 billion), Holcim Helvetia Finance Ltd (two instruments in 2022 with a total volume of CHF 425 million), and Axpo Holding AG (two instruments in 2022 with a total volume of CHF 500 million). In 2021, the Central American Bank for Economic Integration (CABEI) issued the first Social Bond over CHF 200 million. In 2022, the Canton of Basel-Stadt followed with an issue of CHF 110 million. According to the International Capital Market Association’s (ICMA) principles⁷⁸ that serve as a guideline, sustainability-Linked Bonds include a commitment from the issuer to achieve specific sustainability goals within a predefined timeline.⁷⁹

The volumes in these four segments (i.e., Green, Social Bond, Sustainability, and Sustainability-Linked) are relatively small. Relative to the total bond volume listed on SIX Swiss Exchange, Green Bonds account for 2.7 percent of the instruments but only 0.62 percent of the issued volume in SIX’s CHF, EUR, and USD bond segments. For Social Bonds, Sustainability Bonds, and Sustainability-Linked Bonds, the figures are 0.07 percent, 0.03 percent, and 0.17 percent, respectively, for the number of instruments, and 0.011 percent, 0.003 percent, and 0.1 percent, respectively, for the listed volume. These numbers also reflect that both the average and median issue sizes of bonds in these four new segments are substantially below the average issue size of other bonds on SIX Swiss Exchange (Fig. 8.16).

Figure 8.17 shows that Swiss Franc is the dominating currency for Green Bonds, Social Bonds, and Sustainability Bonds. This indicates that the yet-small investment market so far is mostly domestic. At the same time,

⁷⁶ Authors’ calculations based on data available from SIX Group, *Bond Explorer*, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/bonds/sustainable-bonds.html> (Accessed on July 18, 2022).

⁷⁷ See SIX Group, https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/bonds/sustainable-bonds.html#scrollTo=eligibility_for_six_flagging (Accessed on August 27, 2022).

⁷⁸ See International Capital Market Association (ICMA), *Sustainable Finance*, <https://www.icmagroup.org/sustainable-finance/> (Accessed on August 27, 2022).

⁷⁹ See SIX Group, Sustainable Bonds, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/bonds/sustainable-bonds.html> (Accessed on August 18, 2022).

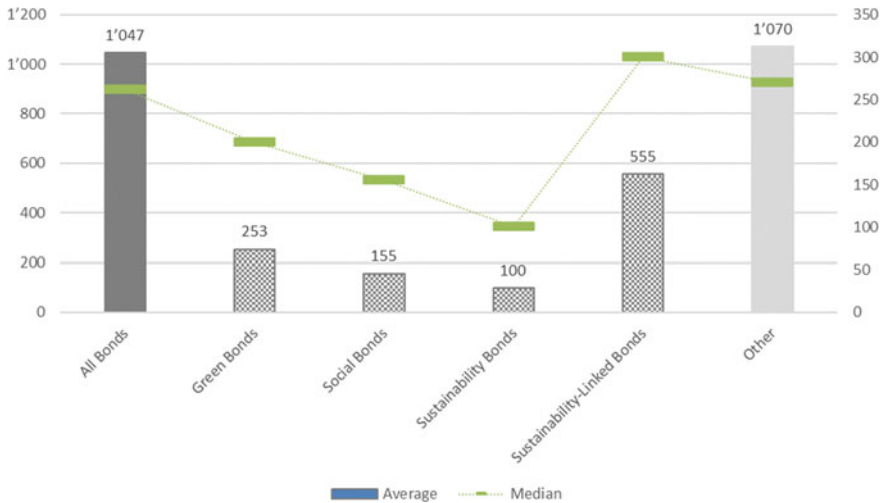


Fig. 8.16 Average issue sizes and median issue sizes (secondary axis) in CHF million (Note The bond universe is limited to bonds denominated in CHF, EUR, and USD. This corresponds to 92 percent of all bond securities issues on SIX Swiss Exchange Source Authors' calculations based on data available from SIX Group, *Bond Explorer*, Ibid. [Accessed on July 18, 2022])

the proportions in the case of Social Bonds, Sustainability Bonds, and Sustainability-Linked Bonds are strongly biased, given that there have been only seven issues in these three segments altogether.⁸⁰

Conclusion

Switzerland's debt market showcases the valuable turntable function the nation plays in global financial markets. Foreign investors use Swiss debt markets to diversify their assets with the strong and stable Swiss franc currency, and borrowers (domestic and foreign) use it for the low-cost, long-term funding it provides to businesses, governments, and supranational organizations. Since 2007, the Swiss Confederation has scaled back its borrowing activities, and, at the same time, domestic Pfandbrief institutes have taken a more prominent role. This trend will likely continue as safety and fiscal conservatism attract more voter (and government) attention. Nevertheless, it will always be challenging to balance the short-term need for

⁸⁰ As of July 18, 2022, nine Green Bonds out of 80 were issued in other currencies than CHF, EUR, and USD. These were AUD (4 instruments), SEK (1 instrument), CAD (3 instruments), NZD (1 instrument).

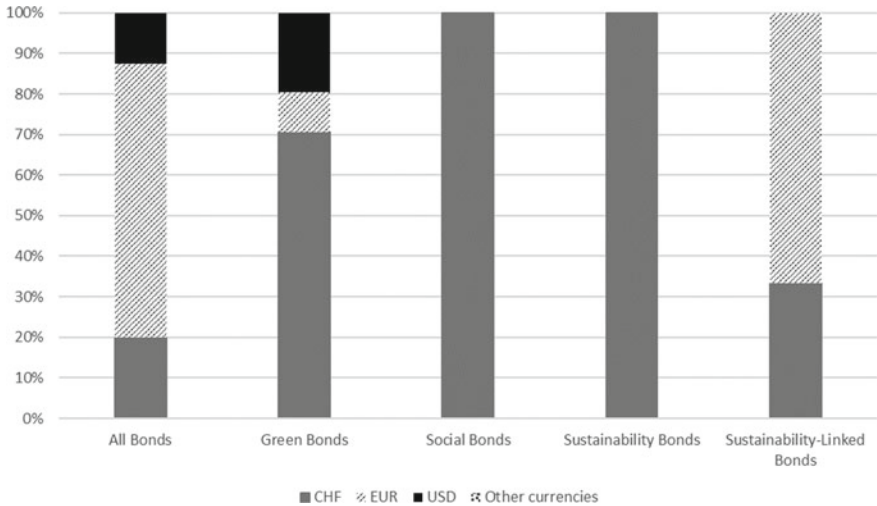


Fig. 8.17 Sustainable Bonds by currencies (Note The bond universe is limited to bonds denominated in CHF, EUR, and USD. This corresponds to 92 percent of all bond securities issues on SIX Swiss Exchange Source Authors' calculations based on data obtained from SIX Group, *Bond Explorer*, Ibid. [Accessed on July 18, 2022])

additional expenditures in extraordinary situations, such as the COVID-19 pandemic, against the long-term interest of fiscal conservatism.

While Switzerland's domestic debt market, as a whole, is vibrant, the short-term portion is underdeveloped, mainly due to the nation's stamp tax and the tendency of Swiss borrowers (governments, corporations, and banks) to issue relatively little short-duration debt. Yet, this is also changing as global financial realities pressure Swiss (and other) politicians and voters to understand and respect the relationship between tax structures that are not internationally competitive and waning economic growth. In the face of volatile global markets, rising inflation rates, and global unrest, robust demand from investors for Swiss-franc-denominated debt instruments will likely keep interest rates low by comparison and spur more significant borrowing. Ongoing sovereign debt problems, which have been plaguing some European Monetary Union members, in conjunction with continuing pressure on the reserve currency status of the US dollar, are likely to boost the status of Switzerland's relatively small, yet increasingly important, debt markets.

For more than a century, Swiss-franc-denominated financial obligations have enjoyed the faith and confidence of savers and investors worldwide. This confidence was not won overnight but from years of efficient, high-quality, and steady performance. The country will need traditional pillars

of strength, such as high domestic saving rates, low inflation, free and open capital/trade markets, rule of law, political stability, respect for confidentiality, secure private property rights, reasonable tax rates, and sensible budget deficit levels to support future debt market growth. If there is a main future attraction, it is likely to be safety, as evidenced by the loss-free record of Pfandbrief investors during their 90-year history. Frontiers will expand by continuing to offer financial instruments that meet the risk-return profiles of borrowers and lenders. In addition, the speed and accuracy of transacting business will need to stay competitive. To succeed, Switzerland's debt markets will constantly have to reinvent themselves. Competition in capital markets benefits everyone by more efficiently managing and allocating the trillions of dollars in financial assets and liabilities that change hands each year.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.





9

Swiss Equity Markets

Introduction

The past decades have brought powerful changes to Switzerland's equity markets. Since 1987, they have become more integrated with other equity markets globally, leading to lower diversification benefits for international investors. Global competition has increased dramatically, and foreign companies have noticeably delisted their shares from Swiss exchanges due to more accessible and liquid equity markets in their countries of origin. Measures to increase transparency include strengthening registered shares relative to bearer shares. The growth of exchange-traded funds (ETFs) and structured products has presented customers, exchanges, and financial regulators with new opportunities and a host of apprehensions regarding risks and how to keep them at moderate levels. Faced with the threat of diminished relative importance, the Swiss finance sector has stepped up its efforts through the creation of novel financial products. Driven by economic growth, the Swiss stock market has exhibited a higher volume growth than the Swiss franc bond market, and stock market capitalization in proportion to GDP in Switzerland is among the highest internationally. Yet, the question is if the Swiss equity market furnishes enough risk capital to boost long-term economic growth and provide a fertile ground for leveraging Switzerland's excellent research output into marketable products to secure the country's position at the forefront of technological development.

Equity Markets

Equity (i.e., stock) markets are a subtype of the financial sector that bring buyers and sellers of company shares together. Often, equity markets are associated with trading (i.e., the exchange of equity ownership rights), but their primary economic function is to raise capital for worthwhile economic ventures. Nevertheless, because of trading activity, equity markets are also an important source of price information for non-listed firms.

Business enterprises looking for financing can raise capital by issuing various financial instruments. Among these, equity securities comprise instruments normally linked to ownership rights and therefore represent the owners' share of a company. In countries with well-functioning financial markets and high legal security standards, public stock markets allow firms to raise equity funds directly from the public. In countries without capital markets, especially in developing countries, family, relatives, and friends typically provide capital. Under these circumstances, the growth of young firms is potentially restricted.

Another source of financing is indirect, through financial intermediaries, and represents a third tier lying between angel financing (i.e., relatives and friends) and direct capital market contact. In developed countries, some firms draw from all three forms of finance. Usually, start-up firms obtain most of their funds from private networks and venture capitalists, especially during very early stages. More mature firms get bank loans, and large firms tend to tap the public financial markets.¹

Switzerland's stock market is still young relative to other developed countries. Due to the nation's comparatively slow rate of industrialization and its high proportion of privately-held companies, the opening of the first Swiss stock market (in Geneva) did not occur until 1850. Only when the huge financing needs of the second half of the nineteenth century emerged—particularly for large infrastructure projects, such as railways—and overwhelmed traditional private financing sources, such as bank loans and net earnings, did the need for equity financing arise. Other stock exchanges were established in Basel (1866), Lausanne and Zurich (1873), Bern (1884), St. Gallen (1887), and Neuenburg (1905). Today's Zurich-based SIX Swiss Exchange is the result of a 1993 merger of the remaining stock exchanges

¹ See Robert D. Cooter and Hans-Bernd Schaefer, "Solomon's Knot: How Law Can End the Poverty of Nations." Princeton, NJ: Princeton University Press, 2012, <https://press.princeton.edu/books/hardcover/9780691147925/solomons-knot> (Accessed on July 16, 2022).

of Basel, Geneva, and Zurich. Along with this reorganization and consolidation, the National *Stock Exchange Act* (SESTA) of 1995 replaced cantonal jurisdiction.

Switzerland's rise to prominence in the international financial markets is a twentieth-century phenomenon, mainly after 1945, when most competing stock markets were destroyed. In contrast to nations like the United States, Swiss capital markets are relatively free from federal government restrictions. The market is largely self-policing, and this effective absence of regulatory bulk has enabled Switzerland to adapt quickly to market forces and to offer its domestic and international customers some of the lowest transaction costs in the world. The economic and financial crisis of 2007 to 2009 and the fact that some Swiss banks got heavily exposed to the collapse of asset prices in the US have caused many observers to question whether this focus on self-regulation was the best framework for public stock markets.

Switzerland has a rather specialized economic base; therefore, the range of Swiss stocks listed on its exchange is rather narrow. The country has many health care, industrial goods, and services companies, including banks, but automobile, mining, and shipping companies are rare or nonexistent. With today's strong interdependence of stock market movements across the world, Swiss equities, too, are influenced by events in foreign markets. For example, the US equity market significantly influences movements in the Swiss market.² During the past four decades, the correlation between the US and the Swiss stock markets has grown substantially. Since November 1987, the average correlation has been above 0.7 on a scale where a perfect positive correlation equals 1.0. From 2020 to 2022, the average correlation has been 0.82. On average, the bond market correlations are smaller than the correlations in the stock markets. Figure 9.1 shows the correlations of Swiss stocks and bonds with the stock and bond markets in the United States and UK.

Types of Equity Instruments

In terms of legal claims, equity is subordinated to debt and is, thus, referred to as a firm's risk capital. Lenders, such as banks or bond investors, are interested in a firm's level of equity when assessing the risks associated with their investments. The relationship between levels of debt and equity is known

² See Dusan Isakov and Christophe Pérignon, "On the Dynamic Interdependence of International Stock Markets: A Swiss Perspective", *Swiss Journal of Economics and Statistics* 136:2 (2000), 123–146. See also Kimberly F. Lichtenberg and Quang Viet Vu, "The 2008 financial crisis: Stock market contagion and its determinants", *Research in International Business and Finance*, 33 (2015), 178-203.

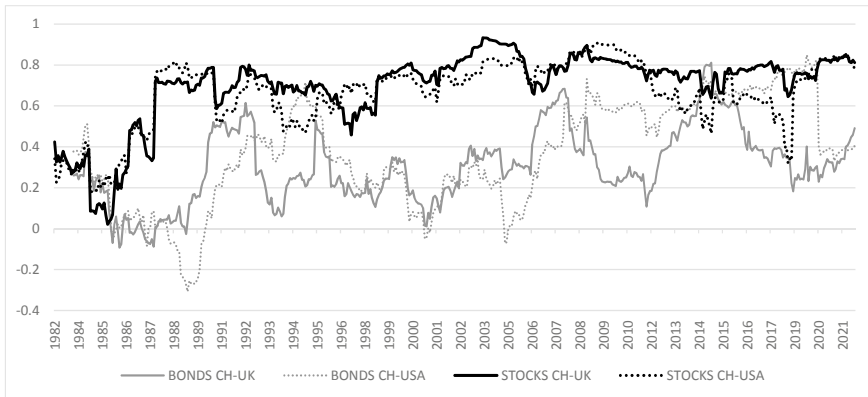


Fig. 9.1 Correlation of Swiss stock and bond markets with the US and UK markets (Source Authors' calculations based on data obtained from Refinitiv Datastream)

as the debt-to-equity ratio (also called leverage or gearing). Firms, therefore, closely follow this ratio when raising capital because higher leverage ratios mean greater risks and, therefore, more expensive borrowing costs. One of the major reasons debt has been so attractive to borrowers is because it has tax advantages that allow firms to enhance profits by increasing leverage. At the same time, the lower a company's capital base relative to debt, the more vulnerable it is to financial distress. Nevertheless, for more than a century, the preferred method of tapping the Swiss capital markets has been utilizing debt issues, mainly because debt interests are tax deductible. At the same time, equity is tax disadvantaged in this regard.

Registered shares are the most common equity instrument issued by Swiss firms. Before most bearer shares were converted into registered shares by April 30, 2021, they were also widely used for financing. Since May 1, 2021, bearer shares are only permitted if they are either listed on a stock exchange or represent intermediated securities. Yet, even before this regulatory change, the proportion of registered shares had constantly grown during the past three decades. In the case of registered shares, the shareowner's name is registered in the corporation's books. This does not apply to bearer shares. Both share types incorporate the right to a pro rata portion of a firm's residual equity claim. This is relevant in cases of liquidation and the distribution of earnings in the form of dividends.³ In certain situations (e.g., conflicts of

³ The distinction between common stock and preferred stock is quite familiar for Anglo-Saxon countries. Typically, holders of preferred shares are entitled to specified dividend payments on specified dates, while holders of common shares may not receive dividends before they are paid to preferred stockholders. Public-equity instruments entitling preferred stock are virtually nonexistent in Switzerland.

interest between the parties involved in early-stage financing), it can be useful to distinguish between preferred shareholders and common shareholders. Hereby, the residual equity claim of common shareholders is subordinated to the preferred shareholders' claim. Table 9.1 provides an overview of the types of equity instruments in Switzerland.

In 2022, 276 share instruments are traded at SIX from 248 companies. Of these, 244 are single-class firms, whereas four companies have more than one share type issued.⁴ At the end of 2011, 51 (or 20 percent) were in bearer form, and 190 (or 76 percent) were registered. By June 2022, only 16 Swiss companies had bearer shares listed, most of them in conjunction with registered shares (Swatch, Gurit Holding AG), non-voting equity securities (NES) (Roche), or convertible bonds (Von Roll). Yet, some companies only had bearer shares listed (Dätwiler, C. Gavazzi, CI Com, ENR Russia Invest AG, Highlight Event and Entertainment, Kudelski, Schweiter Technologies, Tradition S.A., Phoenix Mecano, Perrot Duval, Youngtimers AG, Zwahlen & Mayr). Seven listed equity instruments were participation certificates (Schindler, two instruments of Lindt & Sprüngli, Basler Kantonalbank, Graubündner Kantonalbank, Basellandschaftliche Kantonalbank, and Thurgauer Kantonalbank).⁵ In Anglo-Saxon countries, all three types of equity (registered shares, bearer shares, participation certificates and NES) are referred to as common stock or ordinary shares.

In 1988, Nestlé broke with the tradition of having different types of shares by unifying its capital structure and opening its registered shares to foreign investors. Since then, other large multinational Swiss companies have followed suit to make their stocks globally attractive and simplify their equity structure. In 1989, 40 percent of all Swiss firms had an equity structure consisting of three different classes of listed shares, and only 13 percent of all companies had unitary shares. In 2001, the amount of the latter increased to 71 percent. In June 2022, only four companies had two classes of equity listed on the Swiss stock exchange (Swatch, Roche, Schindler, Lindt & Sprüngli). Participation certificates play a minor role as a financing instrument (Table 9.2).

Swiss investors are free to buy shares anywhere in the world, and, with minor limitations, foreigners have the same rights in the Swiss capital markets as Swiss residents. However, in some cases, voting limits restrict foreigners'

⁴ Authors' calculations based on data available from SIX Group, *Top Traded Securities*—June 2022, https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/statistics/monthly-reports.html#tfl_V0c19saXN0=/year/2022 (Accessed on July 11, 2022).

⁵ The *Swiss Company Act* of 1992 put legal restrictions on participation certificates and non-voting equity securities, limiting the amount of equity a company could issue in this form. As a result, their appeal too many public companies has been substantially diminished.

Table 9.1 Types of Equity Investments

Bearer Shares	The owner's name is not registered in the corporation's book. The holder is the owner and has full voting rights. Since May 1, 2021, bearer shares are only allowed if they are either listed on a stock exchange or if they are in the form of intermediated securities. In all other cases, they had to be converted into registered shares. ^a
Registered Shares	The owner's name is registered in the books of the corporation, and the by-laws of a corporation may restrict the rights of transfer and the voting rights of shares. In many cases, voting rights are limited (e.g., to five percent). Those registered shares that are not recorded in the firm's share registry are called disposable holdings (or depository shares).
Participation Certificates	The owner is entitled to get a share of a company's profits but has no voting rights. Participation certificates can be issued in addition to share capital. Since 2020, under certain conditions, also banks in the form of cooperatives can issue participation certificates in addition to the cooperative shares.
Non-Voting Equity Securities (NES)	This security has no par value because it is not a financing instrument and cannot be issued to raise new funds. Instead, NES can be given to former investors, shareholders, creditors, or employees who are connected to the company. Based on the articles of association, NES may grant the holder the same rights (excluding voting rights) as a shareholder (i.e., a share of the profit, the liquidation proceeds, and the right to subscribe to new NES securities). NES typically originate either from compensating the company founders who had to cede voting rights or from a recapitalization of the company. In the latter case, creditors may get NES after a reduction of their debt position. Likewise, existing shareholders may receive NES after writing off their equity.

^aIntermediated securities are securities that are managed by custodians. They are regulated in the *Federal Act on Intermediated Securities* (FISA) (SR 957.1), <https://www.fedlex.admin.ch/eli/cc/2009/450/en> (Accessed on July 16, 2022)

Source Authors' representation

Table 9.2 Listed Swiss Shares by Type: May 2012 and June 2022

	2012		2022	
Bearer Shares	51	20.40%	21	7.50%
Registered Shares	190	76.00%	251	89.64%
Participation Certificates & other	9	3.60%	8	2.86%
	248		280	

Note The number of shares outstanding (280) is not equivalent to the number of companies (248) that have shares issued and traded at SIX (as of June 2022)

Source Authors' calculations based on data from SIX Group (*Annual Statistics*). For 2022: *Top Traded Securities—June 2022*, https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/statistics/monthly-reports.html#tfl_V0c19saXN0=/year/2022 (Accessed on July 11, 2022)

participation. These restrictions were originally introduced in the by-laws of corporations during World War II. Later, the system was maintained to protect companies or their management against unfriendly takeovers.⁶

Since 1988, there has been a significant move in Switzerland toward liberalization (especially among large companies) and a simplification of share structures that have made the Swiss capital market more accessible to foreigners. Investors could purchase unlimited quantities of bearer shares, participation certificates, or non-voting equity securities of Swiss companies. For many companies, investors are registered as nominees in cases of unknown beneficial owners and are restricted from exercising voting rights beyond a certain limit. As a rule, Swiss markets are generally regarded as being among the most open in the world, and purchasing shares on the Swiss exchange is easy and cost-effective.

Types of Investors

Like Anglo-Saxon countries and in contrast to many other continental European countries, Switzerland's wealth is strongly invested in public equities. Among all investors with Swiss bank deposits, the share of portfolios invested in stocks reached 52.9 percent in 2019, of which slightly more than 50 percent were invested in Swiss companies.⁷

⁶ During the petrodollar recycling excesses of the 1970s, some companies, like UBS, introduced protective measures against takeovers.

⁷ VZ VermögensZentrum, «Das Anlegerverhalten in der Schweiz von 2010 bis 2019», August 2020, p. 11.

As outlined in Chapter 6, Swiss pension funds, on average, held 75.6 percent of their total assets in Switzerland.⁸ In addition, the introduction of occupational pension funds in 1985 led to increasing flows into the equity market. At the end of 2020, there were 1,434 pension funds in Switzerland managing assets of about CHF 1,021 billion. Thereof, CHF 307 billion (30.1 percent) were invested in shares, of which 56 percent were foreign shares.⁹ In comparison, alternative assets accounted for CHF 89 billion (in 2019).¹⁰ The Swiss Federal social security fund managed total assets of CHF 47.2 billion. Thereof, CHF 9.7 billion were invested in stock markets, of which only 17.4 percent (CHF 1.7 billion) in Switzerland.¹¹ In addition, a majority of Swiss residents who have private pension plans (the so-called pillar 3a) are indirect shareholders. In 2020, the total volume in “3a” savings plans reached CHF 135 billion.¹²

Information on foreign and domestic ownership is not available, but one way to gain insights is to analyze the ownership of equity blocks. When shares are purchased in blocks, Switzerland requires disclosure of shareholders’ names.¹³ Both local and foreign investors, especially wealthy families, own a significant amount of equity held in blocks. In the past, some family-owned firms ensured control by issuing different classes of stock. In September 2022, investors from Switzerland accounted for 40.1 percent of reported block-holdings. Investors from the US (44.6 percent), UK (5.4 percent), Sweden

⁸ With this, 88 percent of their real estate assets, 84 percent of their bond portfolio, but only 44 percent of their stock holdings, see Credit Suisse, *Home sweet home—even in your pension fund portfolio?* September 7, 2020, <https://www.credit-suisse.com/ch/en/unternehmen/institutional-clients/home-sweet-home-auch-im-pensionskassenportfolio.html> (Accessed on June 27, 2022). See Chapter 6.

⁹ Bundesamt für Sozialversicherungen, *Schweizerische Sozialversicherungsstatistik 2021*, p. 76, <https://www.bsv.admin.ch/bsv/de/home/sozialversicherungen/ueberblick/grsv/statistik.html> (Accessed on June 27, 2022). Credit Suisse, *Home sweet home—even in your pension fund portfolio?* September 7, 2020, <https://www.credit-suisse.com/ch/en/unternehmen/institutional-clients/home-sweet-home-auch-im-pensionskassenportfolio.html> (Accessed on June 27, 2022). WTW, *Investments for Swiss pension funds: Have the rules of the game changed?* <https://www.wtwco.com/en-CH/Insights/2021/05/investment-for-swiss-pension-funds-have-the-rules-of-the-game-changed> (Accessed on August 14, 2022).

¹⁰ Alternative assets comprise any nontraditional asset class, such as venture capital, hedge funds, infrastructure, art, or precious metals. Bundesamt für Sozialversicherungen, *Schweizerische Sozialversicherungsstatistik 2021*, p. 67, <https://www.bsv.admin.ch/bsv/de/home/sozialversicherungen/ueberblick/grsv/statistik.html> (Accessed on June 27, 2022).

¹¹ Compenswiss, *Annual Report 2021*, <https://www.compenswiss.ch/de/news/geschaeftsberichte> (Accessed on July 16, 2022).

¹² Bundesamt für Sozialversicherungen, *Statistics on occupational benefit plan and the 3rd Pillar*, <https://www.bsv.admin.ch/bsv/de/home/sozialversicherungen/bv/statistik.html> (Accessed on July 16, 2022).

¹³ An equity block represents at least 3 percent of the total voting rights, and this threshold requires the owner’s identification. Blocks represent about 25 percent of total market capitalization (including non-listed equity).

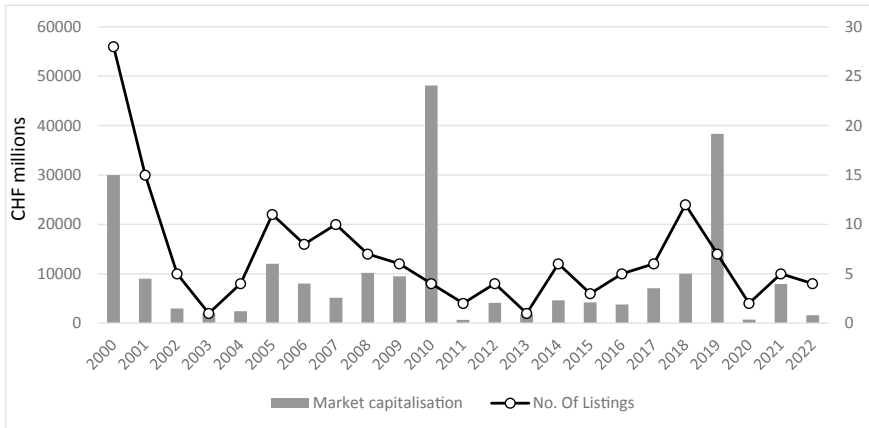


Fig. 9.2 All Swiss Listings between 2000 and mid-2022 (CHF millions) (Note For 2022, only the first half-year is reported. Source Authors' calculation based on data from SIX Group, *List of all Listings since 2000*, https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/shares/ipo-history.html#tfl_dlc19saxN0=/year/2022 [Accessed on July 13, 2022])

(2.3 percent), South Africa (1.3 percent), Germany (1 percent), and other countries (5.3 percent) held the rest of reported blockholdings.¹⁴

Capital Flows on the Stock Market

The process by which a firm offers its shares to the public for the first time is called an initial public offering (IPO), and any subsequent offering to refinance or raise additional capital is called a secondary (or seasoned) equity offering. From the 132 IPOs and initial listings on the SIX Swiss Exchange between 2000 and July 2022, the majority occurred in 2000, 2005, 2008, and 2018. Figure 9.2 shows all Swiss share listings between 2000 and mid-2022. In 2010, the nation saw a significant increase in placement volume because Transocean and Weatherford International, both from the oil and gas sector, relocated to Switzerland and listed their shares on the SIX Swiss Exchange. The total volume in 2019 was mainly driven by the IPO of Alcon (CHF 28.37 billion), a spin-off from Novartis.

As can be seen in Fig. 9.3, until 2009, the bulk of equity issues was not due to initial public offerings (IPOs) but to secondary or seasoned equity offerings (SEOs). This has changed, however, since 2010. In the following decade, more money has flown into IPOs than SEOs. Companies try to keep

¹⁴ Information obtained from Inrate AG.

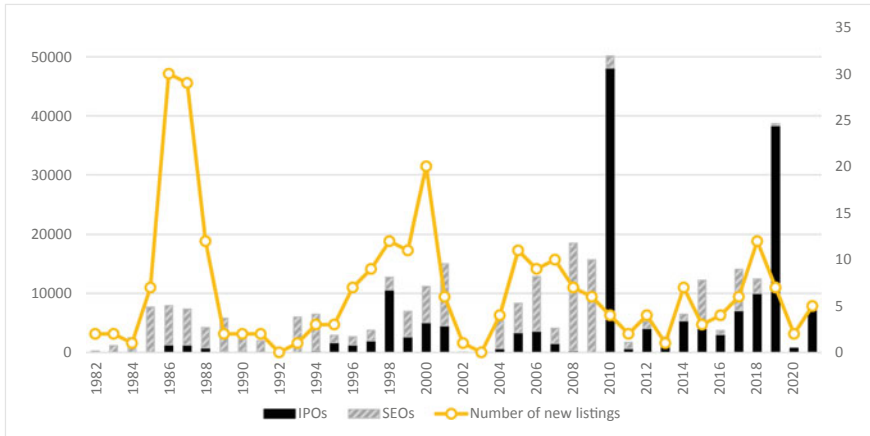


Fig. 9.3 All Swiss Equity issues 1982 to 2021 (CHF millions) (Source SIX Group, *Listings on the Swiss Stock Exchange*, https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/shares/ipo-history.html#tfl_dlc19saXN0=/year/2022 [Accessed on July 20, 2022]. Authors calculations based on data from Vontobel Equity Research Switzerland: *Aktienmarkt Schweiz—Kapitalmarkttransaktionen* (2008, 2009, 2010 editions), Bank Vontobel, Zurich. Data on SEOs received from Vontobel Capital Advisory [July 20, 2022])

invested capital on efficient levels and reward investors for the risks of their investments. As a result, in most of the years, the outflow of funds from Swiss equity markets to investors through dividend payments, share repurchases, and reductions of nominal share values, has been more significant than the funds raised from issuing shares and participation certificates (see Fig. 9.4).

In terms of market capitalization, the three listings from the oil and gas sector mentioned above dominated the amount of capital raised by new listings since 2000 (see Table 9.3). Apart from those, the latest listings originated from a broad spectrum of industries.

The opposite transaction from an IPO is referred to as going private. In this case, a public-equity firm becomes private (i.e., its stock is no longer traded on the open market). Going privates usually occur when the management of the company, another firm or a group of investors buys out public shareholders. These transactions often involve a significant amount of debt. If buyers finance a portion of the stock acquisition with borrowed funds, it is called a leveraged buyout. The SIX Swiss Exchange recorded several delistings in the past years: 2021 (2), 2020 (6), 2019 (10), 2018 (6), and 2017 (13).¹⁵

¹⁵ SIX Exchange Regulation, <https://www.ser-ag.com/en/resources/notifications-market-participants/delisting-decisions.html> (Accessed on August 14, 2022). Typical cases of delistings are foreign companies with secondary listings on SIX Swiss Exchange, delistings resulting from acquisitions by other companies, or a company's liquidation.

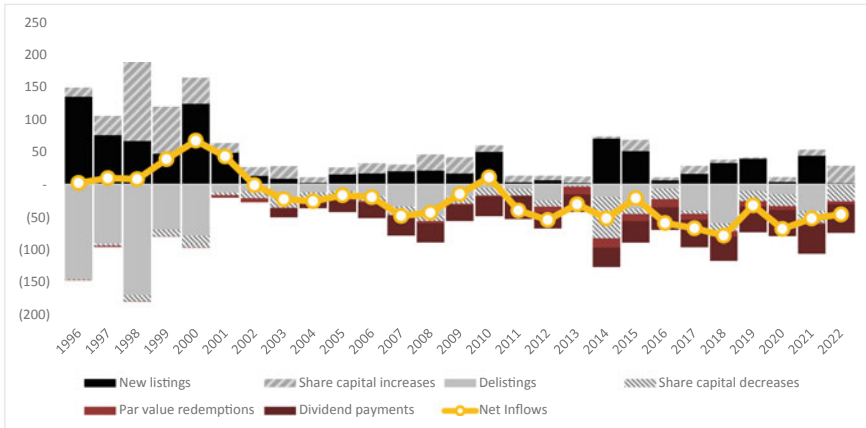


Fig. 9.4 Swiss Equity-related capital flows 1996 to June 2022 (CHF billions) (Source Swiss National Bank, *Capital movements in the shares of domestic companies*, <https://data.snb.ch/en/topics/finma/cube/capmovshare> [Accessed on August 28, 2022])

For majority shareholders holding 98 or more percent of voting rights, there is an option to force the remaining shareholders of the listed firm to sell their shares. This procedure is referred to as a “squeeze out.”¹⁶

Venture Capital

In contrast to public equity, private equity is not listed on a stock exchange. One speaks of a private offering if the firm raises this type of equity. Venture capital is an essential segment of the private equity market.¹⁷ Start-up firms with high potential for long-term growth often raise equity capital from venture capitalists. These investors specialize in financing new firms with equity investments. Venture capital is an important source of equity financing for firms at earlier stages of their lifecycles. Firms seeking venture capital are predominantly in high-tech sectors, such as information technology, energy, and life sciences, and they typically engage in new and innovative products and services. Investments in these firms entail a high level of risk and potentially high returns for the investors. Venture capital investments are typically made in a series of financing stages as the start-up firm faces repeated capital

¹⁶ The squeeze out in Swiss law is regulated by Art. 137 of the Financial Market Infrastructure Act (FinMIA, SR 958.1) of 2015, <https://www.fedlex.admin.ch/eli/cc/2015/853/en>

¹⁷ Prequin tracks the volumes of the following private equity segments: buyout, venture capital, real estate, infrastructure, growth, distressed private equity, direct lending, secondaries, and others. See Bain & Company, *Global Private Equity Report 2022*, https://www.bain.com/globalassets/noindex/2022/bain_report_global-private-equity-report-2022.pdf (Accessed on August 14, 2022).

Table 9.3 Top 20 New Swiss Listings between 2000 and 2022

Rank	Company	Year of Listing	Sector	Market Capitalization as of 1st trading day (CHF millions)
1	Transocean Ltd.	2010	Oil & Gas	32,937
2	Alcon Inc.	2019	Ophthalmology	28,369
3	Weatherford International Ltd.	2010	Oil & Gas	14,714
4	Julius Baer Group Ltd.	2009	Bank	7,914
5	EFG International	2005	Bank	5,808
6	ARYZTA AG	2008	Food	4,964
7	Stadler Rail AG	2019	Train Manufacturing	4,310
8	Petroplus Holdings AG	2006	Oil & Gas	4,081
9	SIG Combibloc Group AG	2018	Packaging	3,937
10	Orascom Development	2008	Real Estate	3,597
11	Sunrise Communications	2015	Telecom	3,420
12	Converium Holding AG	2001	Insurance	3,284
13	DKSH Holding Ltd.	2012	Market Expansion Services	3,203
14	SoftwareONE Holding AG	2019	Software	2,934
15	PolyPeptide Group AG	2021	Contract Development & Manufacturing	2,590
16	Nobel Biocare Holding AG	2002	Dental Implants	2,545
17	SFS Group AG	2014	Mechanical Fastening Systems	2,496
18	Panalpina Welttransport	2005	Transportation	2,350
19	Landis+Gyr Group AG	2017	Electronics	2,317
20	Partners Group Holding	2006	Finance	2,243

Note Market capitalization is based on the total amount of outstanding shares at the end of the first trading day (only IPOs with disclosed market value at the closing are considered)

Source SIX Group, List of all Listings since 2000, https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/shares/ipo-history.html#tfl_dlc19s_aXN0=/year/2022 (Accessed on July 13, 2022)

requirements as its business operations grow. Successful business ventures and other types of private equity financed firms may finally go public via an IPO.

As a general rule, newly listed companies on the Swiss stock market are predominantly well-established businesses that may, for instance, need capital for growth. This observation is in sharp contrast to the United States, where comparatively young venture companies go public because they can raise billions of dollars each year on the stock markets. Many US high-growth companies (e.g., Google, Intel, Hewlett-Packard, Amgen, and Genentech) started with venture capital funding.

From 2001 to 2012, between CHF 400 and 450 million on average were raised and invested in venture capital annually, corresponding to roughly 0.5–0.6 per mill of Swiss GDP. Since 2012, invested volumes have grown remarkably, reaching CHF 3.059 billion or 4 per mill of Swiss GDP in 2021. Hereby, the most important sectors in terms of invested capital were Financial Technology (FinTech, 28 percent), Biotechnology (25 percent), Information and Communication Technology (ICT, 22 percent), and Medical Technology (8 percent).¹⁸ The market growth has been driven by new university spin-offs, a greater willingness of experts and university graduates to found start-ups, growing professionalism of entrepreneurs due to a variety of education and networking initiatives, and more funds flowing into seed capital and venture capital.

Despite the substantial growth Switzerland has experienced in venture capital volumes, this may not be sufficient for an inland that lacks natural resources to stay at the forefront of technological development and to keep up economic growth in the long run. Several private and public initiatives, such as the Swiss Future Fund,¹⁹ aim at providing diversified investment structures and better accessibility to venture capital for institutional investors. The ultimate goal is to leverage Switzerland's excellent research output into marketable products to secure the country's wealth in the future.

Listing Requirements for Swiss Equities

According to the *Financial Market Infrastructure Act (FinMIA)* of 2015, the Regulatory Board of the Swiss Stock Exchange decides on the admission of securities to the SIX Swiss Exchange. Also, it is the most senior supervisory body ensuring that issuers fulfill their obligations during listing. The listing

¹⁸ Startupticker, *Venture Capital Report 2022*, https://www.startupticker.ch/assets/files/attachments/VCReport_2022_web_100a.pdf, (Accessed on August 23, 2022).

¹⁹ <https://zukunftsfonds.ch/?lang=en> (Accessed on August 23, 2022).

requirements are defined in the rules of the SIX Exchange Regulation.²⁰ The most important provisions for equity to be listed following the main standard are:

- The issuer must have existed as a company for at least three years (exemptions possible) and must have produced annual financial statements (in compliance with the applicable reporting standards) for the three full financial years preceding the listing application (Art. 11 & 12).
- On the first day of trading, the issuer's reported equity capital must be at least CHF 25 million, under the financial reporting standard used in the listing prospectus (Art. 15).
- The securities must have a free float of at least 20 percent. This means that at least 20 percent of all outstanding securities must be in public ownership. Furthermore, the capitalization of the free-floating securities must amount to at least CHF 25 million. These provisions do not apply in the case of a simple increase in the number of securities already listed (Art. 19 & 20).
- A listing prospectus must be published in advance of the listing and has to be presented in such a way that enables a competent investor to assess the issuer's quality and the securities' characteristics. The listing prospectus must be published in one of the following three forms: (1) Printed in at least one newspaper with a national distribution; (2) Provided free of charge in printed form at the issuer's head office and at those financial institutions that are placing or selling the securities; (3) Electronic publication on the issuer's website and possibly also on the websites of those financial institutions that are placing or selling the securities (Art. 27).²¹
- Equities with transfer restrictions may be listed if the restrictions will not affect the proper functioning of the market (Art. 21).
- After the issuing company has submitted a listing application to the SIX Exchange's Regulation Division, the Regulatory Board reviews and approves it, given that all listing requirements are fulfilled (Art. 3).

²⁰ See SIX Exchange Regulation AG, *Listing Rules*, <https://www.ser-ag.com/dam/downloads/regulation/listing/listing-rules/lr-en.pdf> (Accessed on July 15, 2022).

²¹ The regulation on the prospectus is now part of the *Financial Services Act* (FinSA), SR 950.1, of 2018, <https://www.fedlex.admin.ch/eli/cc/2019/758/en>.

Regulatory Framework

Switzerland's financial markets regulatory framework is not too restrictive compared to other countries, largely because it is self-regulated. The relevant legal rules for equity transactions consist primarily of the Swiss *Code of Obligations (SCO)* of 1911, which includes contract law, company law, and securities law and applies to all kinds of firms. *FinMIA* of 2015 is another critical piece of legislation for listed corporations because it regulates, among other things, disclosures of shareholdings and public takeover transactions. In addition, mergers and takeovers may be subject to the *Merger Act (MerA)* of 2003.

The SIX Swiss Exchange Listing Rules (see *Chapter 2, Finanzplatz Schweiz – Finance Center Switzerland*) are mainly concerned with transparency for investors, notably financial, and other reporting requirements. For instance, *Article 51* of the SIX Swiss Exchange Listing Rules requires public companies to prepare annual and interim financial statements by recognized financial reporting standards. Principally, this means the application of IFRS.²² For issuers incorporated in Switzerland, other accounting standards are also permitted, such as US GAAP and Swiss GAAP FER. Table 9.4 summarizes the recognized accounting standards for issuers incorporated in Switzerland. Issuers not incorporated in Switzerland may in addition also apply the accounting standards of their home countries, provided the SIX Swiss Exchange has recognized them. The approved standards comprise European Union (EU) IFRS and Japanese GAAP.²³ Most Swiss equities are not traded on the public stock exchange and use Swiss GAAP FER.

Many countries introduced corporate governance codes in the aftermath of major US corporate scandals during the early 2000s, such as Enron, Tyco International, Adelphia, Peregrine Systems, and WorldCom. For listed firms in Switzerland, corporate governance is subject to both the *Swiss Code of Best Practice for Corporate Governance (SCBP)* from *economiesuisse* (an organization representing the interests of the Swiss economy) and the *Directive on Information Relating to Corporate Governance (DCG)*²⁴ of the SIX Swiss

²² International Financial Reporting Standards, IFRS (formerly International Accounting Standards, IAS).

²³ GAAP is an abbreviation for Generally Accepted Accounting Principles. For an overview, see Trading on SIX Swiss Exchange, *Module - Rules and Regulations*, <https://www.six-group.com/dam/download/sites/education/preparatory-documentation/trading-module/trading-on-ssx-module-2-rules-regulations-en.pdf> (Accessed on July 15, 2022).

²⁴ See SIX Group, <https://www.six-group.com/dam/download/the-swiss-stock-exchange/listing/equity/ipo/publication.pdf>; <https://www.ser-ag.com/dam/downloads/regulation/listing/directives/dcg-en.pdf> (Accessed on July 15, 2022).

Table 9.4 Recognized Accounting Standards for Public Issuers Incorporated in Switzerland

Standard	IFRS	US GAAP	Swiss GAAP FER	Banking Act standard
International Reporting Standard	♦	♦		
Swiss Reporting Standard			♦	♦
Standard for Investment Companies	♦	♦		
Standard for Real Estate Companies	♦		♦	
Standard Sparks	♦	♦	♦	♦
Standard for SPACs	♦	♦		
Domestic Standard	♦	♦	♦	♦
Standard for Depository Receipts	♦	♦		
Issuers of Debt Securities only	♦	♦	♦	♦

Note FER stands for "Fachempfehlungen der Rechnungslegung." Sparks is SIX's exchange for SMEs. SPACs are special purpose acquisition companies. "Issuers of Debt Securities" refers to issuers of bonds, derivatives, and exchange-traded products
Source SIX Group, *Directive on Financial Reporting*, <https://www.ser-ag.com/dam/downloads/regulation/listing/directives/dfr-en.pdf> (Accessed on August 27, 2022)

Exchange. While *SCBP* consists of recommendations, the *DCG* requires firms to disclose critical corporate-governance information on a comply-or-explain basis. Otherwise, there are no further noteworthy Swiss restrictions in this context, but dual-listed firms are subject to additional rules. For example, companies operating in the United States must obey the US *Sarbanes–Oxley Act (SOX)* of 2002 and the New York Stock Exchange (NYSE) corporate governance rules for cross-listed firms on the NYSE.

Securities Market Overview

Primary market activity is mirrored in the aggregate volume issued and the number of listings. Due to the limited maturity of bond issues and companies having more than one bond listed, the typical bond volume is smaller than the volume of a stock listing. As a result, historically, the number of bonds listed on the Swiss market has been much higher than the number of listed shares, but the proportions have varied considerably.

Listings

After the year 2000, the ratio of listed bonds to shares decreased from about 3.8 in 2000 to 3.1 in 2005 before increasing again in recent years due to the low-interest rate environment. As of July 2022, the number of listed bonds was 6.1 times the number of listed shares.²⁵ While the number of Swiss franc domestic bonds decreased steadily from 961 in 2000 to 579 in 2011, it increased again to 678 by July 2022 due to high demand from both the private and the public sector. By contrast, Swiss franc foreign and international bonds (denominated in foreign currencies) increased to 959 in 2011 and 1,020 in 2022, but they fluctuated greatly, moving from 782 in 2000 to 592 in 2004. Thus, over this period, foreign entities were tapping the Swiss capital markets by issuing debt rather than equity, with such debt issues accounting for most of Switzerland's outstanding bond listings. The resulting number of listed securities (excluding structured products and warrants) reached 2,523 at year-end 2011 and 4,699 in June 2022.

The number of listed structured products and warrants has grown considerably after the year 2000, reaching 48,355 listed products in May 2022. Still, the exchange value of these securities is typically meager because of the option-like character of many of these products. Figure 9.5 reveals the meteoric rise in structured product listings on the SIX Swiss Exchange during the last two decades. Due to the continuous innovation in this equity category, investors are offered a broad range of the still-growing number of instruments. The chart provides an overview of the number of listed securities on the SIX Swiss Exchange. Structured Swiss products and warrants are listed on SIX Structured Products Exchange, formerly Scoach Switzerland (Scoach Schweiz AG). Scoach was a joint venture between SIX Group and Deutsche Börse that was functional from 2007 to 2013.²⁶

Structured products is the umbrella term used to describe financial instruments that generate different payoffs depending on the values of underliers, such as equities, bonds, indices, and currencies. Hence, they combine the various features and benefits of different underliers. They are organized into four major subcategories: leverage, participation, yield optimization, and capital protection products (see Table 9.5):

²⁵ See SIX Group, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/listing/bonds.html> (Accessed on August 14, 2022).

²⁶ See SIX Structured Products Exchange, <https://www.six-structured-products.com/en/latest-news/markuebersicht> (Accessed on July 11, 2022).

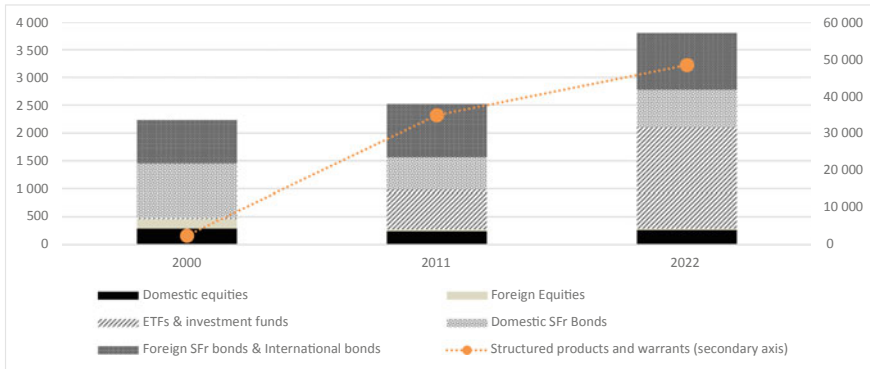


Fig. 9.5 Number of listed securities on the SIX Swiss exchange: 2000, 2011, and 2022 (Structured products and warrants on secondary axis) (Source Authors' calculations based on data available from SIX Group, *Jahresstatistiken* and *Top Traded Securities—June 2022*, https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/statistics/monthly-reports.html#tfl_V0c19saXN0=/year/2022 [Accessed on July 11, 2022])

Table 9.5 Number of Listed Structured Products February 2012 and May 2022

Number of securities	February 12	in %	May 22	in %
Leverage products	27,575	70	31,000	64
Yield optimization products	7,241	18	15,063	31
Participation products				
Capital protection products	3,112	8	1,820	4
Other products	1,166	3	336	1
Total number of listed securities	318	1	136	0
	39,412	100	48,355	100

Source Authors' calculations based on the following data: For 2012: Scoach, *Marktreport Mai 2012*; for 2022: SIX, *Strukturierte Produkte Marktreport*, June 2022, <https://www.six-structured-products.com/de/service/publikationen> (Accessed on July 11, 2022) and <https://www.six-group.com/dam/download/the-swiss-stock-exchange/listing/equity/ipo/publication.pdf> (Accessed on August 14, 2022)

- Leverage products feature a payoff depending more than proportionately on the price changes of the underlying instrument. Some products exhibit linear payoffs, such as mini futures and constant leverage certificates, whereas other products are combined with options, such as knock-out warrants.
- Participation products provide a payoff that is often positively, sometimes negatively, linked to the price changes of the underlying financial asset. The

most common participation products are tracker certificates. Payoffs may also have kinks, e.g., in the case of outperformance certificates providing excess participation in the upside.

- Yield optimization or enhancement products allow participating in a payoff of a financial instrument by investing less than the instrument's market price. This benefit comes at the cost of giving the upside potential away. The most common yield enhancement products are discount certificates and barrier reverse convertibles.
- Capital protection products guarantee a minimum repayment, but they also participate in the upside potential of the underlying financial asset.

Market Value

Although there are more listed bonds than shares, the market value of equities listed on the SIX Swiss Exchange (CHF 2,002 billion, year-end 2020) significantly exceeded the market value of bonds (CHF 342 billion, year-end 2020). The market value of equities showed considerable fluctuations that were mainly following the development of global equity markets. Until 2004, total equity value decreased to 73 percent of its (nominal) level in 2000 but then regained and increased to 115 percent of its 2000 value by 2006, before again decreasing during the global financial crisis of 2008. Between 2011 and 2020, the market value of equities listed on the SIX Swiss Exchange doubled. These fluctuations are in line with global economic developments during the past decade. Figure 9.6 shows the market capitalizations of stocks and bonds on the SIX Swiss Exchange.

As can be seen from a long-term comparison based on the period from 1980 to 2020, the aggregate market value of listed stocks and bonds in Switzerland has diverged considerably over the years. For some years after 1990, the bond market exceeded the listed stocks in volume. However, by 2020, the stock market has outdistanced the bond market by 485 percent. Between 1980 and 2020, the stock market grew at an average annual rate of 7.9 percent, and the bond market only at an average yearly rate of 3.8 percent (see Fig. 9.7). While the bond market value developed steadily throughout this period, Swiss shares experienced two significant dips: in 2001 to 2002 after the dot-com bubble burst and in 2008 due to the US subprime mortgage market collapse that led to the global financial crisis. After the dip in spring 2020 due to the COVID-19 lockdown, the market rebounded during fall 2020. A more significant dip happened in 2022 due to Russia's invasion

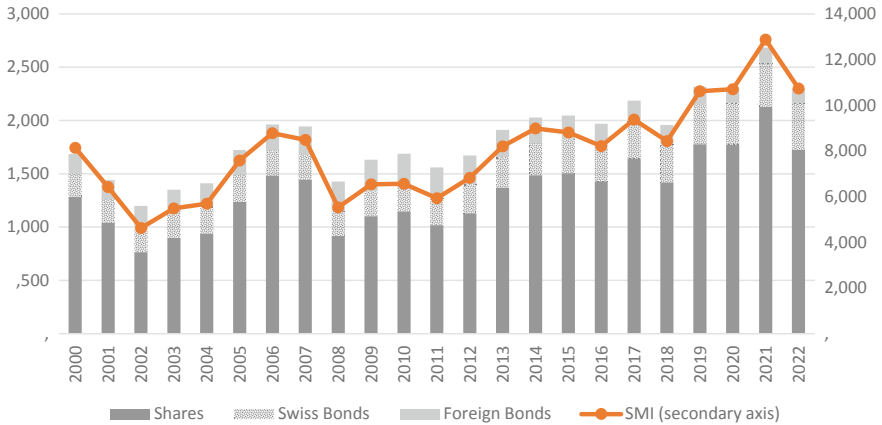


Fig. 9.6 Market capitalization of securities listed on the SIX Swiss Exchange (CHF billion): December 2000 to June 2022 (Source Authors' calculations based on data from SIX Group, *Bond Explorer*, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/bonds/bond-explorer.html> (for bonds) [Accessed on July 18, 2022]; SNB, <https://data.snb.ch/en/topics/finma/cube/capmovshareSIX> (for shares) [Accessed on August 23, 2022])

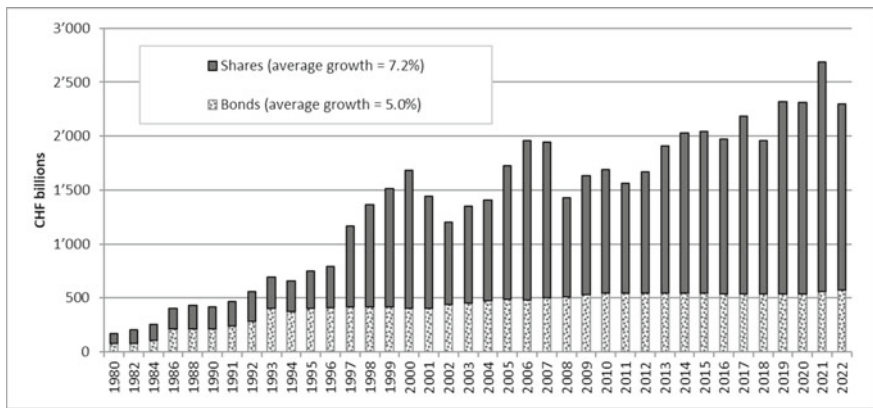


Fig. 9.7 Market value of securities listed on Swiss Stock Exchange: 1980 to 2022 (Source Authors' calculations based on data from SIX Group, *Bond Explorer*, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/bonds/bond-explorer.html> (for bonds) [Accessed on July 18, 2022]; SNB, <https://data.snb.ch/en/topics/finma/cube/capmovshareSIX> (for shares) [Accessed on August 23, 2022])

of Ukraine and the rising inflation. As of July 2022, the Swiss All Shares Index (SSIRT) had a market capitalization of CHF 1.57 trillion.²⁷

²⁷ See SIX Group, *Swiss All Share Index Total Return*, <https://www.six-group.com/dam/download/market-data/indices/factsheets/six-factsheet-stat-ssirt-en.pdf> (Accessed on August 15, 2022).

Sector and Company Overview

In 2022, healthcare companies dominated Swiss equity markets, accounting for 36 percent of the total market value (see Fig. 9.8). The consumer non-durables accounted for 27 percent, but 21 percent could be attributed to Nestlé alone. Finance accounted for only about 17 percent.

The Swiss-listed stock market was dominated by a handful of companies operating in four major industries. Ten of these companies accounted for about 70 percent of the total market value of the SPI and 84 percent of the SMI (Table 9.6). Four of the top 10 companies were from the pharmaceutical and chemical sectors, and there was one from each of the following industries: food, insurance, industrial goods and services, banking, luxury goods, and healthcare services.

By end of September 2022, Nestlé, the largest company, accounted for 18.5 percent of the Swiss Market Index (SPI). The three largest firms (Nestlé, Roche, Novartis) accounted for 54.8 percent of the total SMI market value and for 49.3 percent of the total SPI market value. In 1994, these three companies accounted for only 37 percent. This development was driven by the growth of these companies and the consolidation of other sectors, such as banking and insurance.

SPI companies had a total market value of CHF 1.502 trillion in July 2022. Companies comprising the Swiss Market Index (SMI) were valued in

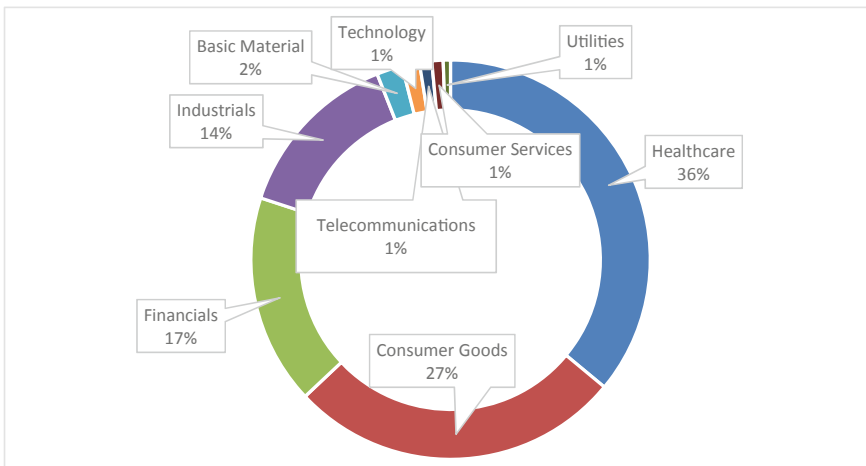


Fig. 9.8 Swiss listed Equity Market values by industry as of September 30, 2022 (Source SIX, *Swiss Performance Index SPI Total Return Factsheet*, <https://www.six-group.com/dam/download/market-data/indices/factsheets/six-factsheet-stat-sxge-en.pdf> [Accessed on October 15, 2022])

Table 9.6 20 SMI Companies and Index Weights as of September 30, 2022

Rank	Company (Location)	Share type	Market value (CHF billions)	% of SMI	% of SPI	Sector
1	Roche	N	306,601	18.97	16.15	Pharma
2	Nestle	R	351,682	18.47	20.92	F&B
3	Novartis	R	196,107	17.36	12.25	Pharma
4	Zurich Insurance	R	60,244	5.98	4.22	Insurance
5	Richemont	R	52,102	4.95	3.50	Luxury goods
6	UBS Group	R	61,230	4.75	3.35	Bank
7	ABB Ltd.	R	45,600	4.22	2.98	IG&S
8	Lonza	R	56,715	3.65	2.57	Pharma
9	Sika	R	54,386	3.11	2.19	Chemicals
10	Alcon	R	42,696	2.93	2.06	Ophthalmology
				84.39	70.19	
11	Givaudan	R	44,247	2.40	2.00	Flavors & Fragrances
12	Holcim	R	28,600	2.33	1.94	C&M
13	Swiss Re	R	28,657	2.13	1.77	Insurance
14	Partners Group	R	40,400	1.84	1.53	Private Equity
15	Geberit	R	26,700	1.54	1.28	C&M
16	Swiss Life Holding AG	R	17,624	1.36	1.13	Insurance
17	Swisscom	R	26,657	1.19	0.99	Telecommunication
18	Sonova	R	16,125	1.06	0.88	Hearing care
19	Credit Suisse Group	R	23,295	1.01	0.84	Bank
20	Logitech	R	7,871	0.76	0.63	Electronics
				15.61	12.99	
	Total of top 10		920,762			
	Total of top 20		1180,938			

Abbreviations: B = Bearer shares, R = Registered shares, N = Non-voting equity securities, P = Participation certificate, C&M = Construction and Materials, F&B = Food and Beverages, IG&S = Industrial Goods and Services, HR = Human Resources
Note Market capitalizations are as of December 31, 2021 and are adjusted for free float

Source SMI constituents and weights as of September 30, 2022 are obtained from SIX. SPI weights for ranks 1-10 as of August 31, 2022 are obtained from SIX, *Swiss Performance Index SPI Total Return Factsheet*, <https://www.six-group.com/dam/download/market-data/indices/factsheets/six-factsheet-stat-sxge-en.pdf> (Accessed on October 15, 2022). SPI ranks 11-20 are based on authors' calculations. Market capitalizations are obtained from the companies' annual reports 2021

Table 9.7 Index Comparison by Market Values: Data in July 2022

SIX Index	Market value (CHF million)
Swiss All Share Index	1,504,801
SPI	1,501,945
SMI	1,094,998

Note Market capitalizations are adjusted for free float

Source Data obtained from SIX index factsheets as of July 4, 2022, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/indices/index-explorer/download-center.html> (Accessed on July 12, 2022)

July 2022 at an aggregate of CHF 1.095 trillion (see Table 9.7). BX Swiss exchange is the second official stock exchange in Switzerland and a trading platform for smaller firms. Still today, it is often referred to as “Berner Börse”, as the Berne Stock Exchange, founded in 1884, originated from the Berne Banking Association that was founded in 1880.²⁸ In 2017, BX Swiss was sold to Börse Stuttgart, which since 2018 has been the sole owner. Its main index is the BX Swiss All Share Index comprising 202 shares. It contains shares listed on BX Swiss and SIX Swiss Exchange. As an alternative, equity can be traded on OTC-X, which is a trading platform provided by Berner Kantonalbank (BEKB) and currently lists 246 shares with a total market capitalization of CHF 17.95 billion.²⁹

American Depositary Receipts

Swiss companies have also increased their presence as issuers in foreign markets. In 2022, 49 Swiss firms had an American Depositary Receipts (ADR) program in the United States that represented the ownership of shares in those Swiss firms.³⁰ ADRs are usually issued as fractional values of the security traded in Switzerland. One of the primary reasons for their issuance is the expectation of enhanced company access to US capital markets.

ADRs allow non-US companies to access US investors in a way that is more convenient than a direct listing on a US stock exchange.³¹ A non-US company can issue ADRs in collaboration with a depositary sponsor, usually

²⁸ Information on BX Swiss is obtained from BX Swiss, <https://www.bxswiss.com/history> (Accessed on July 14, 2022). For further information on the BX Swiss All Share Index, see <https://www.bxswiss.com/news/BXSwiss-AllShare-Index> (Accessed on July 14, 2022).

²⁹ For further information, see <https://www.otc-x.ch/> (Accessed on July 13, 2022).

³⁰ <https://www.adr.com/dr/drdirectory/drUniverse> (Accessed on July 15, 2022).

³¹ See Júlio Lobão, “Seasonal anomalies in the market for American depositary receipts”, *Journal of Economics, Finance, and Administrative Science*, Vol. 24, No. 48, 2019, pp. 241-265.

a US bank or investment institution. Banks such as BNY Mellon or Citi sponsor ADRs of non-US firms.³² The sponsor keeps a defined number of company shares in a depositary and allows US investors to buy ADRs on these shares. The ADRs can then be traded on the stock markets. Technically with an ADR, an investor does not own the foreign stock directly. Instead, the ADR entitles the investor to a fraction of one or more shares of the foreign stock. ADRs are quoted in US dollars, and dividends are paid in dollars. ADRs offer advantages for US investors, who can invest in foreign companies without facing the difficulties of cross-border trades.³³

Four Swiss companies trade their ADRs on the New York Stock Exchange (ABB, Credit Suisse, Novartis, and STMicroelectronics). Other major companies, such as Roche, Nestlé, and Swisscom, trade their ADRs over-the-counter (OTC) or have their ADRs listed on NASDAQ, such as Givaudan and Molecular Partners. Swisscom was present on the NYSE from 1998 to 2007, until it decided to deregister with the SEC following the introduction of the *Sarbanes–Oxley Act* in 2002.

Trading Activities

In line with the relative market capitalizations of shares and bonds, share turnover on the SIX Swiss Exchange far outweighs the turnover of bonds. Since the year 2000, the share of foreign stocks in turnover and listed securities has declined, whereas exchange-traded funds (ETFs) have exhibited strong growth.

Turnover in Stocks and Bonds

Figure 9.9 shows the yearly turnover on the SIX Swiss Stock Exchange from 2000 to mid-2022. In 2021, the cumulative turnover on the SIX Swiss Exchange amounted to CHF 1,282 billion. Equities accounted for 80.5 percent, investment funds for 7.6 percent, bonds for 10.4 percent, and structured products and warrants for 1.6 percent of the total trading volume. After the peaks in 2006, 2007, and 2008, turnover in 2012 amounted to only 35 percent of its (nominal) level in 2007. Equity turnover fell to 26 percent of its (nominal) level in 2007, while bond turnover slightly increased by

³² See, for example, www.adr.com.

³³ See Hendrik Bessembinder, Te-Feng Chen, Goeun Choi, K.C. John Wei, “American Depository Receipts: The Long-Term U.S. Investor Experience”, SSRN paper, January 15, 2021.

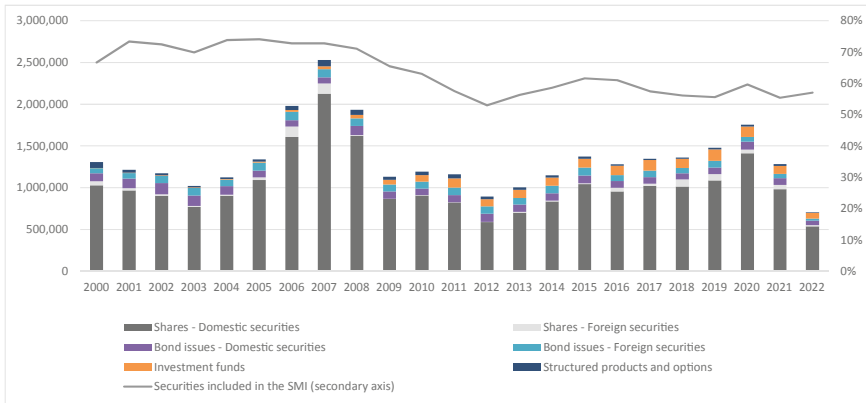


Fig. 9.9 Total Turnover per Year on SIX Swiss Stock Exchange: 2000 to mid-2022 (CHF millions) (Source Swiss National Bank, *Securities turnover on the Swiss stock exchange*, [https://data.snb.ch/en/topics/finma/cube/capweums?fromDate=2000-01&toDate=2022-06&dimSel=D0\(IT0,AT0,T0,IT1,AT1,T1,A,SPO,T2,ISMIT\)](https://data.snb.ch/en/topics/finma/cube/capweums?fromDate=2000-01&toDate=2022-06&dimSel=D0(IT0,AT0,T0,IT1,AT1,T1,A,SPO,T2,ISMIT)) [Accessed on July 28, 2022])

8 percent. After the years preceding the financial crisis of 2008, featuring unusual activity in the equity market, volumes came down close to their longtime levels.

In 2021, Swiss shares accounted for more than 76 percent of the total on-order book turnover³⁴ on the Swiss stock exchange. By contrast, the turnover generated by foreign shares was only 4 percent. The meager portion of foreign share turnover was in line with the continuing trend of foreign share delistings, mainly because foreign companies withdrew their secondary listing in the Swiss market. For a more detailed discussion of foreign shares, see below.

Because turnover is often driven by changes in market values (i.e., the same number of trades may result in different levels of turnover if share prices vary with time), the number of trades is a purer measure of trading activity.³⁵ In this respect, the number of bond trades steadily decreased from 2001 to 2007 but regained strength thereafter due to increased debt financing by corporations and the public sector. As a result, this increase happened in the Swiss Bonds segment, as depicted in Fig. 9.10. At the same time, the number of share trades is almost seven-fold in 2022 compared to 2001 and is now around 60 million trades per year. The lower number of bond trades and its

³⁴ On-order book turnover represents trades where the transfer of ownership is done automatically through the exchange's electronic order book. Orders placed by trading members are usually exposed to all market participants and automatically matched. In contrast, with off-order book trades, the transfer of ownership is done through bilateral negotiation.

³⁵ However, higher trading activity may also result from smaller tick sizes for stocks.

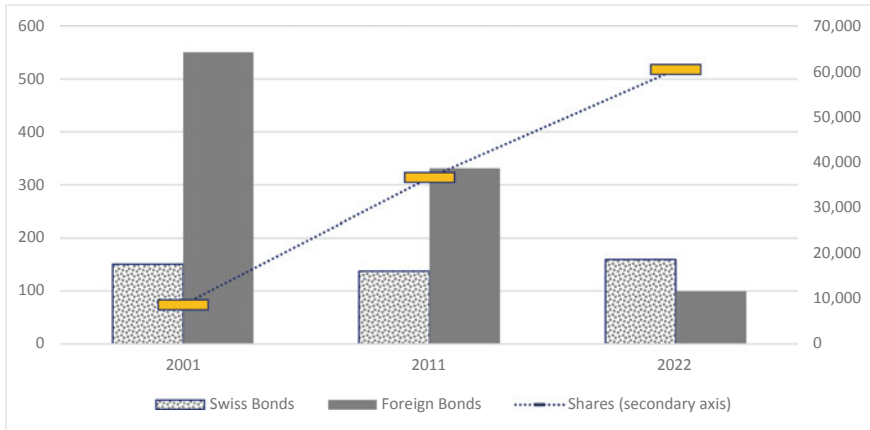


Fig. 9.10 Number of trades (Thousands): 2001, 2011, and 2022 (Source Authors' calculations based on data from SIX Group (*Annual Statistics*). For 2022: *Top Traded Securities—June 2022*, https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/statistics/monthly-reports.html#tfl_V0c19saXN0=/year/2022 [Accessed on July 11, 2022])

less variant level partly mirror the typical buy-and-hold strategies entailed with these securities. At the same time, the number of trades in foreign bonds has shrunk massively and, in 2022, was only around 18 percent of the transactions twenty years ago.

Regarding individual shares, Nestlé's registered shares were the most actively traded every month in 2022, accounting for 10.02 percent of total Swiss stock turnover in June 2022. Roche, Novartis, and UBS followed Nestlé (see Table 9.8). The top 10 firms accounted for 45.03 percent of total turnover.

Number of Listed Securities

Table 9.9 compares and contrasts the number and type of securities listed on the SIX Swiss Exchange in 1994, 2011, and 2022. At the end of 1994, a total of 3,169 securities were listed on the Swiss Stock exchange. Thereof, domestic Swiss franc (44 percent) and foreign Swiss franc (24 percent) bonds accounted for more than two-thirds of the total number of listed securities. Swiss and foreign shares accounted for 18 percent, and the remaining securities (14 percent) were structured products and warrants.

Since 1994, the composition of listed securities has experienced a significant transformation. Apart from dramatic increases in the number of structured products and warrants, significant changes have occurred in the equity

Table 9.8 Top Ten Traded Swiss Shares on SIX Swiss Exchange in June 2022

Rank	Company (Location)	Volume June 2022	Turnover CHF millions	% of Swiss stock turnover (in %)
1	Nestlé AG (Vevey)	87,966,131	9,679	10.02
2	Roche Holding AG (Basel)	27,084,639	8,470	8.77
3	Novartis AG (Basel)	93,821,977	7,654	7.93
4	UBS AG (Basel/Zürich)	210,275,236	3,403	3.52
5	Zurich Financial Services Group (Zürich)	7,070,960	2,967	3.07
6	ABB Ltd (Zürich)	107,517,867	2,911	3.01
7	Compagnie Financière Richemont SA (Bellevue)	25,429,463	2,592	2.68
8	Credit Suisse Group AG (Zürich)	323,936,713	1,978	2.05
9	Sika (Baar)	8,405,322	1,955	2.02
10	Lonza (Basel)	3,649,629	1,880	1.95
	Total of top 10			45.03
	Total of top 50			72.77
	Total			100.00

Source Authors' calculations based on data available from SIX Group, https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/statistics/monthly-reports.html#tfl_V0c19saXN0=/year/2022 (Accessed on July 11, 2022)

and bond segments of the market. Swiss share listings fell from 321 to 244. By contrast, exchange-traded funds (ETFs) and exchange-traded products (ETPs) gained importance as they represent a convenient and reasonably priced alternative for investing in a broad portfolio of stocks, bonds, and other assets.³⁶ In June 2022, 1,767 ETFs and ETPs were listed on the Swiss exchange. Figure 9.11 shows the development since 1877, the earliest year where data is available. After more than a century of steady growth, the number of listed equities on the Swiss Stock Exchange peaked in 1993. At that time, all 600 listed equities consisted of 339 Swiss and 261 foreign shares.

³⁶ Exchange-traded products (ETPs) track and replicate the value of underlying assets, such as stocks, bonds, commodities, currencies, or indices. ETPs at SIX Exchange are defined as “secured, bearer debt securities that do not earn interest.” See SIX Group, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/etp.html> (Accessed on August 15, 2022). Exchange-traded funds (ETFs) are the most important example of ETPs.

Table 9.9 Number of Listed Securities on the Swiss Exchange: 1994, 2011, and 2022

Security Category	# Securities, end of 1994	Percent	# Securities, end of 2011	Percent	# Securities, June 2022	Percent
Swiss shares	321	10.10	242	0.65	244	0.46
Foreign shares	252	8.00	34	0.09	28	0.05
ETFs & ETPs	0	0.00	685	1.84	1767	3.33
Investment funds	0	0.00	24	0.06	43	0.08
<i>Total Equities</i>	573	18.10	985	2.64	2082	3.92
Domestic Swiss Franc bonds	1392	43.90	579	1.55	678	1.28
Foreign Swiss franc bonds	750	23.70	959	2.57	1020	1.92
<i>Total bonds</i>	2142	67.60	1538	4.12	1698	3.20
Structured products and warrants	454	14.30	34796	93.24	48355	91.16
Other products					911	1.72
<i>Total number of listed securities</i>	3169	100.00	37319	100.00	53046	100.00

For 2022, the following calculation and numbers apply:

Shares = Registered Shares (251), Bearer Shares (21), Non-Voting Equity Securities (1), Participation Certificates (7)

Bonds = Bonds (1666), Bond ex Warrant (1), Contingent Capital Bonds (14), Convertible Bonds (17)

ETFs & ETPs = Exchange Traded Funds (1598) and Exchange Traded Products (169)

Investments funds = Unit trusts (43)

Structured Products and Warrant = Structured Products Certificates, Structured Products Bonds, Structured Products Commodities, Knock-Out Warrants, Other Warrants, Shareholder's Warrants, Structured Products Warrants, Warrants on Commodity and on Currency

Table 9.9 (continued)

Other products = Asset Backed Securities (12), Money Market Papers (1), Foreign Interest Payment Security (4), Rights (6), Risk Free Rate (2), Sponsored Foreign Shares (190), Sponsored Funds (415), Swiss Pfandbriefe (281). Sponsored Foreign Shares are shares of highly capitalized foreign companies that can be traded in Swiss Franc and for which designated market makers (sponsors) provide trading liquidity. Sponsored Funds are funds for which market makers (sponsors) provide trading liquidity. Swiss Pfandbriefe are a special type of mortgage-backed bonds

Source Authors' calculations based on data available from SIX Group, Top Traded Securities—June 2022, https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/statistics/monthly-reports.html#tfl_V0c19saXN0=/year/2022 (Accessed on July 11, 2022); SIX, Strukturierte Produkte Marktreport, June 2022, <https://www.six-structured-products.com/de/service/publikationen> (Accessed on July 11, 2022)

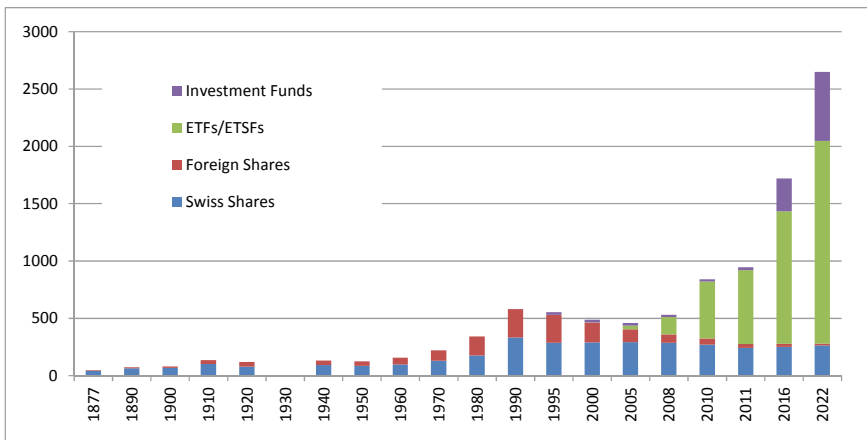


Fig. 9.11 Number of listed equities, ETFs, and Funds on the Swiss Stock Exchange 1877–2022 (Source Authors' calculations based on data from SIX Group, *Jahresstatistiken: Kotierte Wertpapiere und Emittenten*, 1995–2011. Also see Zürcher Börse, *Jahresbericht 1994*, Zurich. SIX Group, *Top Traded Securities—June 2022*, https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/statistics/monthly-reports.html#tfl_V0c19saXN0=/year/2022 [Accessed on July 11, 2022]. For investment funds, see <https://www.six-group.com/en/newsroom/news/the-swiss-stock-exchange/2022/six-sif-600.html>, for ETFs, see <https://www.six-group.com/dam/download/the-swiss-stock-exchange/trading/markets/etfs/market-report/market-report-etf-2022-q1-en.pdf> [Accessed on August 15, 2022]).

Foreign Shares

Listings of foreign shares grew strongly between 1970 and 1990. During this period, investors showed increasingly more significant interest in international investments. To reach these potential investors, many international companies expanded their listings on foreign exchanges. Between 1993 and

2022, the structure of listed equities on the Swiss exchange shifted significantly. Whereas the number of Swiss shares fell from 321 at the end of 1994 to 244 by June 2022, foreign share listings experienced a more significant decline, falling from 252 to 28, mainly driven by the development of liquid equity markets in the issuers' countries of origin. Due to regulatory and technological developments, investors have increased direct access to stock exchanges outside their countries of residence. Given that foreign share listings are a way of tapping foreign capital, the withholding tax on foreign investment was another harmful factor. The tax was neither conducive to such investments nor the attractiveness of foreign share listings in Switzerland. Because of its negative impact, numerous political efforts have been to abandon the withholding tax on foreign investments. The trading volume of foreign shares on the Swiss Stock Exchange decreased continuously.

Exchange-Traded Funds

During the last two decades, a new equity class called exchange-traded funds (ETFs) has emerged and continuously grown in importance. ETFs were designed to track the performance of broad stock indices but now include other asset classes, such as government and corporate bonds, money market instruments, commodities, and real estate companies. To investors, they offer the opportunity to participate in the performance of broad market benchmarks easily. The first ETFs were listed on the Swiss Stock Exchange in 2001. By the end of 2011, ETFs and ETPs already accounted for 685 products or almost 70 percent of the total number of listed equities (985). In 2022, they accounted for 1,767 products or 85 percent of all listed equity instruments (2086). Because of the broad spectrum of underlying asset classes, SIX Swiss Exchange reports ETFs separately and not as a part of equity instruments.

Shares in ETFs can be traded at any time during a trading day due to their listing on a stock exchange. Most ETFs track a particular index (passively managed) and, therefore, have low operating expenses. As a critical point, ETFs do not always fully replicate the underlying asset portfolio by buying the stocks in the proportion of their representation in the index. Instead, ETF managers may use the sampling method and buy just the most important and representative stocks of an index. This is cheaper than full replication but comes with the risk of more significant tracking errors between the ETF and the index.

From a regulative perspective, a critical point with all types of indirect investments, such as investment funds and exchange-traded funds, is how and by whom voting rights are exercised. Voting rights are a vital governance

instrument for shareholders to control the corporations they're invested. Investors in ETFs cannot exercise their voting rights in the companies they hold indirectly. Whether the ETF providers are entitled to exercise their voting rights depends on the replication method used. In case of a full replication, the ETF physically holds all underlying stocks of the ETF portfolio and can therefore exercise voting rights. This is also the case for partial replication or sampling, where only a selection of the most important stocks of an index is held physically. Typically, the ETF provider either votes with the company or delegates the exercise of the voting rights to a proxy voting company. However, in the case of ETFs using synthetic replication, the exercise of voting rights is not possible. Either way, ETF investing leads to a shifting of voting rights away from shareholders to proxy advisors and strengthens the position of the board of directors of the companies if the ETF management decides to follow their voting recommendation.

Stock Market Indices

Professional investors and the general public are interested in the performance of equity markets and certain groups or sectors, such as geographic regions, countries, industries, and companies (e.g., small, mid, and large caps). Among the best-known performance measures are indices that are calculated by exchanges and private information providers (e.g., STOXX, MSCI, and Dow Jones). Value-weighted indices relate the current market value of a group of shares to their value at some base date. In contrast, equally weighted indices, like the Dow Jones Industrial Average, calculate current values without relating them to some base date. Figure 9.12 gives an overview of the most important indices at SIX Swiss Exchange. These indices are explained below.

Swiss All Shares Index

The Swiss All Shares Index comprises all shares listed on the SIX Swiss Exchange, including Swiss- and foreign-domiciled companies, and those domiciled in the Principality of Liechtenstein.³⁷ The index consists (as of July 4, 2022) of 232 shares.

³⁷ See SIX Group, *Swiss All Share Index*, <https://www.six-group.com/dam/download/market-data/indices/factsheets/six-factsheet-stat-ssip-en.pdf> (Accessed on July 12, 2022).

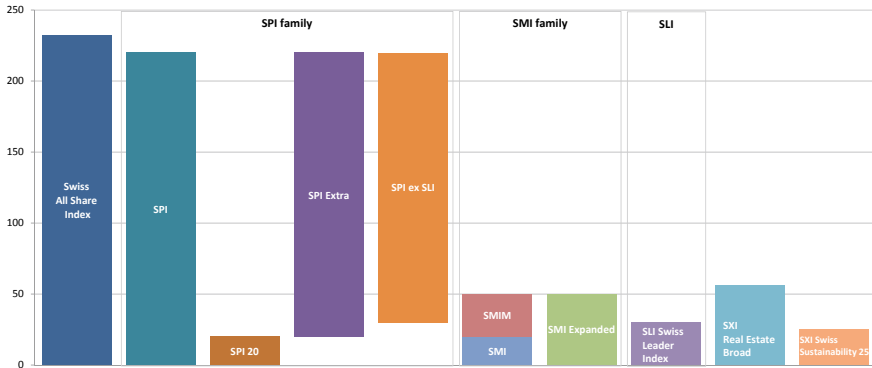


Fig. 9.12 Number of shares included in the indices of the SIX Swiss Exchange (Source Authors' calculations based on data from SIX Group, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/indices/equity-indices.html>? [Accessed on July 11, 2022])

SPI Index Family

The Swiss Performance Index (SPI) and the Swiss Market Index (SMI) are the most widely recognized Swiss equity indices. The SPI comprises practically all companies domiciled in Switzerland and the Principality of Liechtenstein, with their stock listed on the SIX Swiss Exchange. It is referred to as Switzerland's overall stock market index (only investment companies and shares with less than 20 percent free float are excluded from the SPI). The SPI is free float adjusted, i.e., only the tradable portion of shares is used for the index calculation. The index's base date is June 1, 1987, when the index was fixed at 1,000 points. The SPI is calculated as a total return index (i.e., adjusted for dividend payments).³⁸

The SPI is also broken down into various sub-indices:

- SPI sub-indices by total market capitalization (SPI Large, SPI Mid, SPI Small, SPI Large and Middle, and SPI Small and Middle)
- *SPI 20*: This index comprises the 20 largest stocks of the SPI.
- *SPI Extra*: This index comprises all SPI stocks not included in the SMI.
- *SPI ex SLI*: This index comprises all SPI stocks not included in the SLI.
- *SPI Sectors*: Sector-specific indices are based on the Industry Classification Benchmark (ICB) classification taxonomy and comprise basic materials,

³⁸ Information in this paragraph is obtained from SIX Group, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/indices/equity-indices/spi.html> (Accessed on July 11, 2022).

industrials, consumer goods, health care, consumer services, telecommunications, utilities, financials, and technology.

All sub-indices are calculated as a performance index (dividend-adjusted) and price index.

SPI ESG Indices

The SPI ESG index comprises stocks from the SPI universe with a minimum ESG Impact Rating of C + and less than 5 percent sales in critical sectors, according to Inrate, that are not listed on the exclusion list of the Swiss Association for Responsible Investments (SVVK). In addition, the SPI ESG Weighted index weighs its components with the ESG Impact Rating. The SPI ESG Select index follows the same logic but selects stocks until they reach half the number of components of the SPI. SPI ESG Multi and Single Premia indices (ESG Strategy indices) weigh their components about their volatility contribution.³⁹

SPI Gender Equality Index

For inclusion in the SPI Gender Equality index, companies must have 20 to 80 percent women on the board of directors and 15 to 85 percent women on the management board.⁴⁰

Figure 9.13 shows the index development of SPI, SPI ESG, and SPI Gender Equality, standardized to 100 as of March 20, 2015. It also shows the SXI Switzerland Sustainability 25 index, which contains the 25 companies with the highest sustainability score. All indices are presented as total return indices.

SMI Index Family

The SMI comprises the 20 largest stocks from the SPI universe. It is the most important equity index in Switzerland and is referred to as the blue-chip index. This index's base date is June 30, 1988, when it started at 1,500

³⁹ See SIX Group, *ESG Indices*, <https://www.six-group.com/dam/download/market-data/indices/factsheets/factsheet-esg-indices-en.pdf> (Accessed on August 15, 2022).

⁴⁰ See SIX Group, *SPI Gender Equality*, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/indices/esg-indices/spi-gender-equality.html> (Accessed on August 15, 2022).

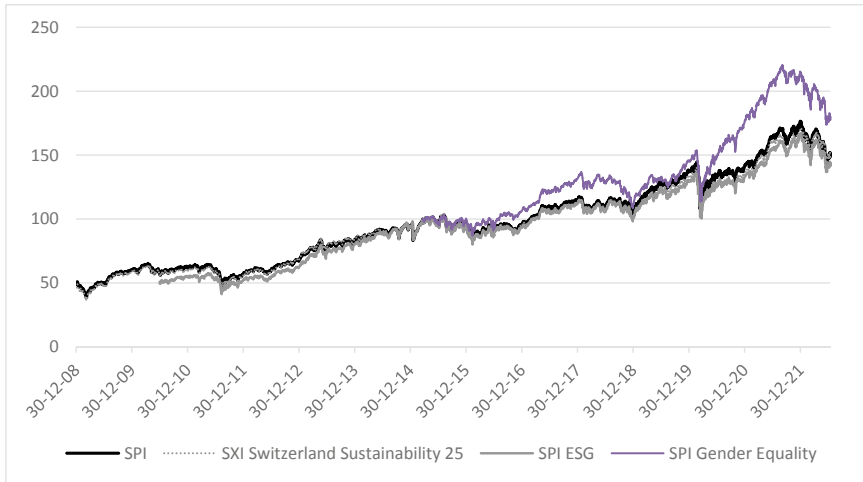


Fig. 9.13 SPI and sustainability, ESG, and Gender Equality sub-indices (Note Because of different base dates, all index values are standardized at 100 on March 20, 2015 Source Authors' calculations based on data from SIX Group, *Index Data Center*, https://www.six-group.com/exchanges/indices/data_centre/esg/spi_esg_baskets_en.html and <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/indices/equity-indices.html> [Accessed on July 16, 2022])

points. The SMI is calculated as a pure price index (i.e., in contrast to the SPI, it does not include dividend payments).⁴¹ Figure 9.14 shows the SMI and SPI index values since their inception.

- *SMI MID (SMIM)*: This index is a mid-cap index comprising the 30 largest stocks not included in the SMI.
- *SMI Expanded*: This index consists of the 50 stocks from the SMI and the SMIM together.

Further Indices

- *SLI*: The Swiss Leader Index (SLI) comprises the 20 SMI stocks plus the ten largest stocks from the SMIM, representing the 30 largest and most liquid stocks.
- *UBS 100*: The UBS 100 index comprises the 100 largest stocks in the SPI by market capitalization.
- *SXI Special Industry indices*: SXI Life Sciences, SXI Bio + Medtech

⁴¹ The two indices mirror each other very closely. The correlation coefficient since index inception is 0.995 (authors' calculations based on daily returns from June 30, 1988, to July 8, 2022).

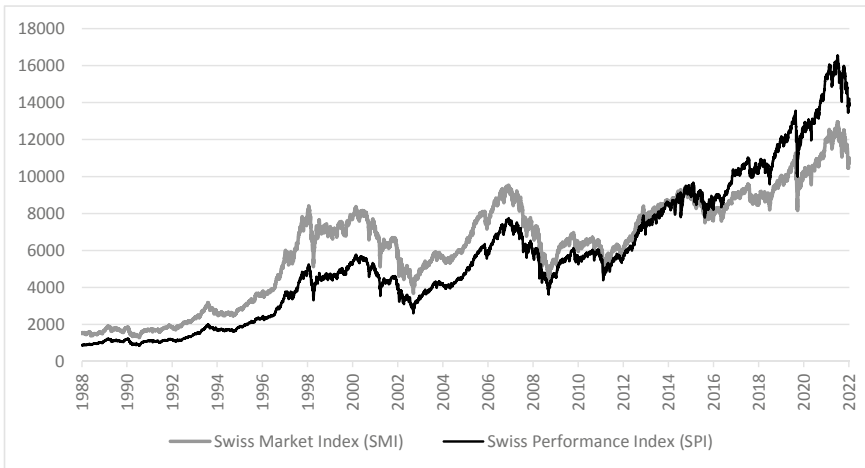


Fig. 9.14 SPI and SMI: Development of index values June 1988 to July 2022 (Source Authors' calculations based on data from SIX Group, https://www.six-group.com/exchanges/indices/data_centre/index_overview_en.html [Accessed on July 12, 2022]⁴²)

- *SXI Switzerland Sustainability 25*: This index contains the 25 companies with the highest sustainability score.
- *SXI Real Estate*: This segment comprises different indices: SXI RE Selected NAV/Eq Wght, SXI Real Estate Broad (SXI Real Estate Funds Broad, SXI Real Estate Shares Broad), SXI Swiss Real Estate (SXI Swiss Real Estate Funds, SXI Swiss Real Estate Shares), SXI Real Estate All Shares
- *Strategy Indices*

Stock Market Performance

Table 9.10 shows the stock price performance of the SMI and SPI and selected SMI firms during the last 32 years. Richemont, a luxury goods group, achieved the top ranking with an average annual total return⁴³ of 14.2 percent. The second-best performer was Roche, which showed positive returns in every five-year window. Roche achieved an average annual total

⁴² For a performance overview of all SIX equity indices, see <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/indices/equity-indices.html> [Accessed on August 15, 2022].

⁴³ Total returns include both price changes and dividends.

return of 12.3 percent for the same period. Swiss Life and Zurich Insurance showed inferior returns between 2000 and 2004, while UBS was hit during the financial crisis in 2008. Over the 32 years from January 1990 to December 2021, Credit Suisse exhibited an average annual return of 0 percent.

Table 9.11 shows stock price performance and dividend yields from 1990 to 2021 for nine SMI companies. The average returns are calculated based on the SMI's current composition. As can be seen, the three top firms outperformed the SMI in terms of price development due to the growth of their business fields (food and pharmaceuticals).

Table 9.12 shows the annual performance of listed bonds and stocks between 1926 and 2021. Strictly based on historical returns, the performance of equity-loaded portfolios was superior to debt-loaded ones. Even though

Table 9.10 Stock Performance 1990 to 2021 (average Total Returns)

	1990– 1994	1995– 1999	2000– 2004	2005– 2009	2010– 2014	2015– 2021	1990–2021
SMI (prices)	8.1%	23.6%	−5.3%	2.6%	7.4%	5.4%	6.4%
SPI	8.7%	23.8%	−3.1%	5.6%	9.7%	9.3%	8.7%
Adecco	−31.8%	42.6%	−13.3%	1.6%	8.8%	−1.5%	−1.7%
Credit Suisse	6.1%	26.1%	−6.3%	3.6%	−7.3%	−10.2%	0.0%
Nestle	10.1%	20.5%	2.5%	13.7%	9.7%	11.6%	11.5%
Novartis	13.3%	30.8%	2.0%	2.1%	14.0%	3.3%	10.1%
Richemont	13.6%	24.1%	1.7%	18.6%	14.9%	8.9%	14.2%
Roche	29.7%	25.3%	−5.4%	8.1%	18.3%	8.3%	12.3%
SGS	10.4%	9.5%	11.8%	14.0%	8.1%	9.4%	11.1%
Swiss Life	8.8%	35.2%	−21.7%	−1.4%	19.6%	17.9%	8.2%
UBS	9.2%	14.0%	9.0%	−16.5%	1.1%	4.1%	3.2%
Zurich Insurance	9.1%	31.4%	−21.5%	6.4%	12.1%	10.4%	7.3%

Note Except for the SMI, all numbers represent total returns

Source Authors' calculations based on data obtained from Refinitiv Datastream

Table 9.11 Financial Performance Data: 1990 to 2021

	Avg. Price Performance (in %)	Avg. Dividend Yield (in %)
Average	6.4	2.3
Credit Suisse	−2.4	2.4
Nestlé	8.8	2.7
Novartis	7.5	2.6
Richemont	12.4	1.8
Roche	10.1	2.2
SGS	8.4	2.8
Swiss Life	6.1	2.1
UBS	0.7	2.5
Zurich Insurance	3.5	3.7

Source Authors' calculations based on data obtained from Refinitiv Datastream

Table 9.12 Annual Performance of All Listed Stocks and Bonds: 1925–2021 (1925 = Base Year)

	<i>Nominal value</i>		<i>Real value</i>	
	<i>Stocks (%)</i>	<i>Bonds (%)</i>	<i>Stocks (%)</i>	<i>Bonds (%)</i>
Average yearly performance	9.81	4.19	7.76	2.27
Geometric mean return	7.97	4.12	5.92	2.14
Risk (standard deviation)	20.02	3.78	19.75	5.13
Heaviest loss in value	–34.05	–3.99	–37.83	–10.93
	2008	1989	1974	1973
Largest increase in value	61.36	16.58	56.24	14.87
	1985	1975	1985	1976
Correlation	0.20		0.23	

Note The calculations assume a buy-and-hold strategy. The performance would vary with active management and changes among asset classifications

Source Authors' calculations based on data obtained from Pictet Wealth Management: *Performance Update for Swiss Shares and Bonds, 1926–2021*, 21 February 2022. <https://www.group.pictet/media-relations/historical-performance-shares-and-bonds-switzerland> (Accessed on March 16, 2022)

both investments had positive real returns, neither stocks nor bonds proved to be ideal hedges against inflation, but shares were the better of the two.

During the 96 years between 1925 and 2021, the average annual rates of return on Swiss equities (capital gains plus yearly reinvested dividends) for shares and bonds were 9.8 percent and 4.2 percent, respectively. Real returns, net of inflation, were 7.8 percent and 2.3 percent, respectively (see Fig. 9.15). The calculated annual risk (volatility) on Swiss stocks was more than five times larger than for Swiss bonds. For Swiss stocks, the risk, measured as the standard deviation of annual returns, was 20.0 percent between 1925 and 2021, whereas the risk measurement for Swiss bonds was only 3.8 percent. At the same time, a longer investment horizon substantially reduced the risk of Swiss stocks.

Foreign Shares

While at year-end 2011, 34 foreign companies had their shares listed on the SIX Swiss Exchange, this number dropped to 28 by June 2022 (based on a total of 248 listed companies). Thereof, 11 companies had a primary

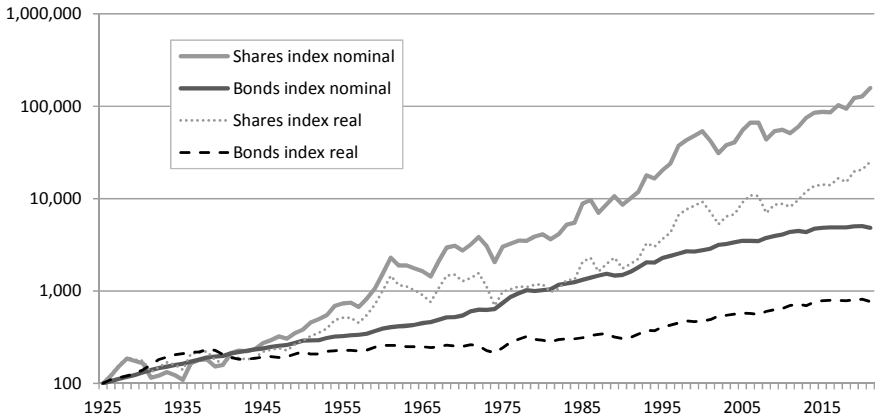


Fig. 9.15 Nominal and real value of shares and bonds in Switzerland: 1925 to 2021 (Source Authors' calculations based on data obtained from Pictet Wealth Management: *Performance Update for Swiss Shares and Bonds, 1926–2021*, 21 February 2022. <https://www.group.pictet/media-relations/historical-performance-shares-and-bonds-switzerland> [Accessed on March 16, 2022])

listing (i.e., the shares were included in the Swiss Performance Index).⁴⁴ The remainder (17) comprised secondary listed shares (i.e., shares with a primary listing abroad). Among the latter are some of the world's largest companies. Table 9.13 shows the market values of the top 10 foreign companies with a secondary listing in the Swiss market in July 2022.

The turnover of secondary listed shares is typically relatively low due to the lower importance compared to the market where the companies got their primary listing. By far, the highest trading activity in the segment of foreign shares in 2022 was for ams-OSRAM, a sensors and optical solutions manufacturing company headquartered in Austria. With a primary listing at the Swiss Stock Exchange (see Table 9.14), it accounted for more than 85 percent of the top 10 foreign share trading volume. Behind ams-OSRAM, the share trading volume dropped significantly.

Foreign share listings on the Swiss Stock Exchange peaked in 1993, marking the end of a period of steady increases that started in the 1970s. During this period, companies reacted to investors' growing interest in international investments by expanding their listings on foreign exchanges, but since 1993, foreign share listings on the Swiss Stock Exchange have declined continuously (see Fig. 9.16). This ongoing decline has been caused mainly by significant technological and regulatory developments which have happened

⁴⁴ See SIX Group, *List of Equity Issuers*, <https://www.six-group.com/de/products-services/the-swiss-stock-exchange/market-data/shares/companies.html> (Accessed on August 27, 2022).

Table 9.13 Top 10 Foreign Companies on SIX with Secondary Listings (by Market Value) (Data as of July 2022)

Rank	Company (Country)	First Trading Year	Market Value, as of July 2022 (CHF millions)
1	Lilly (US)	1995	301,501
2	Pepsico (US)	1995	232,192
3	Abott Labor (US)	1995	200,698
4	Phillip - Morris (US)	2008	179,292
5	Caterpillar (US)	1995	147,496
6	3M (US)	2002	134,053
7	Royal Bank Canada (CAN)	1995	133,255
8	General Electric (US)	2021	104,514
9	Baxter International (US)	1995	57,409
10	Anglo PLC (UK)	2007	37,720

Source Authors' calculation based on data from SIX Group, *Share Explorer*, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/shares/share-explorer.html> (Accessed on July 27, 2022)

Table 9.14 Top 10 Foreign Companies on SIX by Turnover as of July 2022

Rank	Company (Country)	Country	First Trading	Share Price (CHF)	Turnover (CHF)
1	ams-OSRAM AG	AUT	2020	7.80	335,956,121
2	PIERER Mobility AG	AUT	1996	62.10	17,284,068
3	COSMO PHARMA N.V.	NLD	1995	51.00	13,681,217
4	lastminute.com N.V.	NLD	2021	20.35	9,010,574
5	Liechtensteinische Landesbank	LIE	2007	52.50	8,360,418
6	Anglo American plc	UK	1995	28.20	4,021,166
7	VP Bank AG	LIE	2007	83.00	2,845,856
8	SHL Telemedicine Ltd.	ISR	2018	17.65	395,728
9	Newron Pharmaceuticals	ITA	2018	1.43	314,475
10	IGEA Pharma N.V.	NLD	2007	0.08	288,537

Source SIX Group, *Share Explorer*, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/shares/share-explorer.html> (Accessed on July 27, 2022)

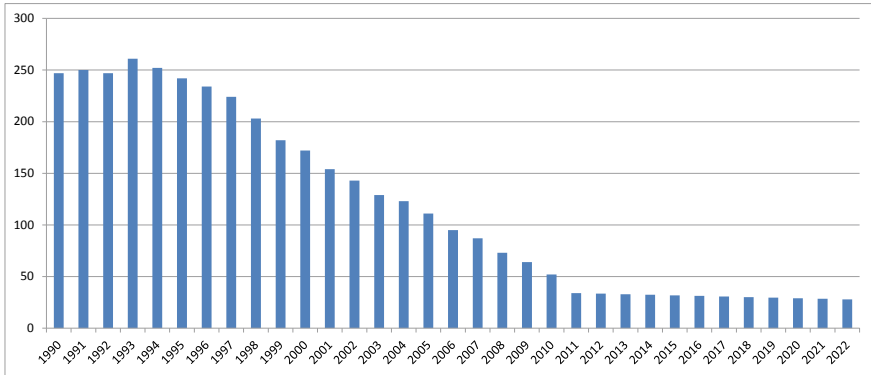


Fig. 9.16 Number of listed foreign shares on the Swiss Stock Exchange, 1990 to 2022 (Source Author's calculations based on data from Zürcher Börse, *Jahresbericht 1994*; SIX Group, *Listed Securities and Issuers 1995–2011*; SIX Group, *Share Explorer*, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/shares/share-explorer.html> [Accessed on July 12, 2022])

during the past two decades. Today, investors have direct access to stock exchanges outside of their countries of residence. While dual or multiple listings have been important in the past to get access to investors abroad, this appears to be less critical nowadays. With a turnover volume of CHF 65 billion and 550 million shares traded in the first half-year of 2022, Nestlé ranked number one with regard to the traded amount. However, 1.67 billion Credit Suisse shares and 1.43 billion UBS shares were traded in the same period. The top 10 Swiss companies accounted for 9.9 billion traded shares on the Swiss Stock Exchange from January to June 2022. In contrast, the top 10 foreign companies only accounted for 264 million traded shares in the same six months. This volume represents about 2.7 percent of the activity of the top 10 Swiss companies.⁴⁵

Figure 9.17 illustrates the reduction of foreign share listings by country of origin. This development was primarily driven by the opening of exchanges and better financing opportunities in the countries of origin of the respective companies. Between 1995 and 2012, share listings of companies based in the United States and Canada decreased from 108 to 19 (-82 percent) and to 12 in 2022. Of the 41 German shares listed in 1995, only five remained by 2012 (-88 percent) and none by 2022. The share listings of Dutch and British

⁴⁵ Authors' calculations based on data available from SIX Group, Top Traded Securities—June 2022, https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/statistics/monthly-reports.html#tfl_V0c19saXN0=/year/2022 (Accessed on July 11, 2022).

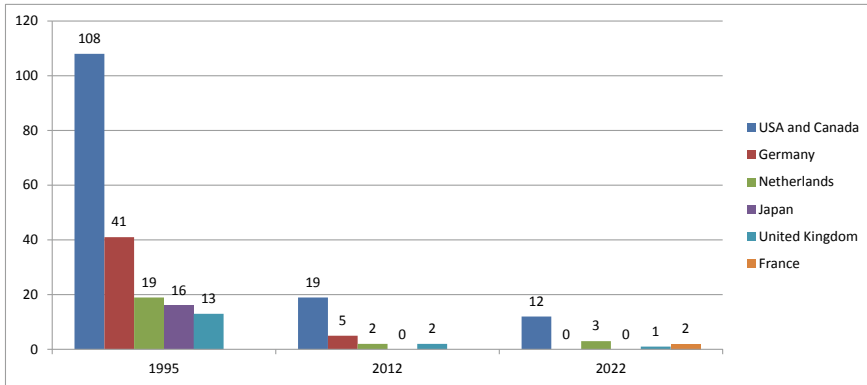


Fig. 9.17 Number of listed foreign shares on the Swiss Stock Exchange by Country: 1995, 2012, and 2022 (Source Authors' calculation based on data from SIX Group (*Trading Participants*). For 2022: *Share Explorer*, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/shares/share-explorer.html> [Accessed on July 12, 2022])

companies dropped by 89 percent and 85 percent, respectively, whereas shares of Japanese companies wholly vanished.

International Comparison of Stockmarkets

The largest share of the world's corporate equity sector is listed on the US markets, namely the New York Stock Exchange (today NYSE Euronext US) and NASDAQ,⁴⁶ followed by listings in China (Shanghai and Shenzhen stock exchanges), Japan (Japan Exchange group operating the Tokyo Stock Exchange), United Kingdom (London Stock Exchange), and India (BSE Mumbai Stock Exchange). The SIX Swiss Exchange was ranked twelfth in total market capitalization at year-end 2021.⁴⁷ Intense competition from other nations has diminished Switzerland's relative international position. This shift can be explained mainly by the increasing importance of financial marketplaces in emerging markets, such as China and India. For example, Shanghai's and Shenzhen's stock exchanges have grown significantly and, in 2021, were both ranked in the top ten based on market capitalization.

The relative importance of Switzerland as an international finance center becomes even more visible when comparing its domestic market

⁴⁶ National Association of Securities Dealers Automated Quotations (NASDAQ).

⁴⁷ Ranking according to Statista, <https://www.statista.com/statistics/270126/largest-stock-exchange-operators-by-market-capitalization-of-listed-companies/> (Accessed on August 14, 2022).

capitalization-to-GDP ratio to the same proportion of other countries. Although the United States, China, and Japan have the largest markets for equities, stock market capitalization represents a far higher portion of GDP in Switzerland. A high ratio implies a high relevance of financial markets for a country's economy. Therefore, it is important to keep financial markets functioning well and minimize distortions, as potential misallocations of financial resources might involve higher economic and social costs. From that perspective, Switzerland's market capitalization is much larger than the country's contribution to world GDP. Considering the GDP and the size of the economic area, Switzerland has a comparatively high number of substantial multinational companies, especially in the finance, food, and pharmaceutical sectors. In 2021, Nestlé, for example, generated 98.7 percent of sales outside of Switzerland, ABB 64 percent of sales outside of Europe, and Swiss Re earned 68 percent of net premiums even from world areas other than EMEA.⁴⁸ This partially explains the high stock market capitalization in absolute terms as well as proportionally to GDP. Measured by market value, Swiss firms were ranked highly among Europe's and the world's largest companies.

Impact of the US Subprime Crisis and the Covid-19 Crisis

As the major financial markets' values around the world tumbled between 2007 and 2009, so did the Swiss equity market. Between June 1, 2007, and March 9, 2009, the SMI dropped from 9,531 to 4,308, corresponding to a 54.8 percent decrease. Similarly, the SPI lost 53.2 percent of its value. Since then, both indices have partially recovered, but the sharp contraction confirms how connected Switzerland is to the rest of the world.

The financial crisis also had a significant impact on trading activity. Figure 9.16 shows that turnover dropped significantly after the first quarter of 2008 and reached its preliminarily lowest point in the third quarter of 2009. Turnover recovered somewhat during the next two quarters but dropped again in 2012 because of the Euro crisis. Trading activity (as measured by the numbers of trades per trading day) also dropped in the second quarter of 2008 and reached its lowest point in the fourth quarter of 2009. Trading activity only picked up gradually and reached another peak in 2020. At the same time, ETFs and investment funds accounted for many trades.

⁴⁸ Based on the annual reports 2021 of the indicated companies.

In contrast to the long-lasting effects of the financial crisis of 2008, the immediate impact of the COVID-19 pandemic on the Swiss stock market in spring 2020 was only temporary. Between March 4 and March 23, 2020, the SMI fell by 20.4 percent but picked up again quickly after that, growing by 18 percent by the end of April 2020. By mid-June 2020, the SMI was back to its level of early March. Apparently, the SMI has anticipated the economic recovery after the COVID-19 bridging loan program was launched and implemented from March 26, 2020 on.⁴⁹ Swiss GDP fell by 2.5% in the first quarter and by 8.2% in the second quarter of 2020, before growing 7.6 percent in the third quarter.⁵⁰

Conclusion

Switzerland's stock market is still young relative to other developed countries. During the second half of the twentieth century, particularly during the past 30 years, Switzerland's financial sector has transformed itself into one of the world's most efficient and integrated capital markets. The major drivers have been deregulation, automation, consolidation, and derivatives' emergence and rapid growth.

In contrast to other markets, such as those in the United States, Swiss capital markets have long been relatively free from federal government restrictions. In fact, they are still self-policing where possible, and this effective lack of regulatory bulk has enabled the country to adapt quickly to changing market forces and offer some of the lowest transaction costs in the world. Nevertheless, Switzerland has experienced a significant increase in market regulation over the past 15 years.

Swiss investors are free to buy shares globally and, with minor limitations, foreigners have the same rights in the Swiss capital markets as Swiss residents. These markets are generally regarded as being among the most open in the world, and purchasing shares on the Swiss exchange is easy and cost-effective. Furthermore, raising capital is uninhibited, in contrast to other nations where investor and country protection laws create de facto restrictions on corporate financing.

⁴⁹ SNB, https://www.snb.ch/en/ifor/finmkt/operat/id/finmkt_crf (Accessed on August 22, 2022).

⁵⁰ State Secretariat for Economic Affairs, <https://www.admin.ch/gov/en/start/documentation/media-rel-cases.msg-id-80197.html> and <https://www.admin.ch/gov/de/start/dokumentation/medienmitteilungen.msg-id-82489.html> (Accessed on August 28, 2022).

Switzerland's equity listings peaked in 1993, and since then, this market has returned more capital to investors than it has raised for expanding companies. In a presumed world of growing international capital and trade flows, with international GDP levels rising at varied but positive (on average) rates, there is the risk that Switzerland's economy will decline compared to rapidly growing economies. But that does not imply that there will be any less need for Switzerland's financial services and know-how. Furthermore, it does not mean that Switzerland's international financial clout will be tied to or restricted by its domestic economic growth.

Switzerland is a financial turntable whose speed and capacity to function in the expanding global marketplace are tied only to the ingenuity and strategic decisions of its financial leaders and the incentives (or disincentives) engineered by its government.

Appendix: Equity Transaction Costs In Switzerland

Brokerage Fees:

- Compensation to the bank for the execution of buy and sell orders (all types of securities).
- This fee depends on volumes, prices, and exchange type. Since the ban of agreed-upon brokerage fees by the Cartel Commission in 1990, there are no standardized fees. However, a typical charge for an average-sized transaction amounts to 1.2 percent.

Swiss Stamp Tax:

- Turnover in Swiss shares: Total stamp duty of 0.15 percent per transaction (0.075 for each contracting party).
- Turnover in foreign shares: Total stamp duty of 0.30 percent per transaction (0.15 for each contracting party).

Turnover fee (including FINMA tax)*:

- Turnover fee for the SIX Swiss Exchange.
- Apart from the transaction fees, other fees accrue to brokers, such as participation, access, issuing, capacity, and extraordinary fees. Such fees would typically amount to 0.25–1.50 bp.

**Note* This is not a turnover tax but a turnover fee, which includes the FINMA tax. These fees comprise a large portion of SIX's revenues. Generally, the fees are collected by SIX Swiss Exchange; the actual composition of the fees is quite complicated.

Source Federal Tax Administration, <https://www.estv.admin.ch/estv/de/home/bundesabgaben/stempelabgaben/sta-fachinformationen/umsatzabgabe.html> (Accessed on July 16, 2022). SIX, <https://www.ser-ag.com/dam/downloads/regulation/trading/directives/loc-tr-en.pdf> (Accessed on August 15, 2022).

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.





10

Swiss Derivative Markets

Introduction

Volatility is the mother of derivatives, but there is debate about whether speculation or hedging is the legitimate father. Starting in the 1970s and extending more than two decades into the twenty-first century, derivative use, sophistication, and volume have grown significantly. Large, developed economies like the United States, the European Union, Japan, and the United Kingdom have nurtured their derivative markets, with financially adept countries such as Australia, Canada, and Switzerland doing the same. These seven participants rank among the largest and most innovative global providers of derivative instruments, controlling more than three quarters of its over-the-counter (OTC) turnover in 2022.¹

Derivatives are central to today's financial markets and have grown to eclipse, in notional value, both the international equity and bond markets. A virtual explosion of derivative activity has occurred during the past 50 years, as exchange rates, interest rates, commodity prices, and credit ratings (private and government) have become more volatile, contributing to a growing demand for hedging and the possibility of earning speculative

¹ Every three years, the Bank for International Settlements in Basel, Switzerland, coordinates with central banks to conduct its foreign exchange and derivatives OTC derivatives market survey. The survey covers turnover, outstanding contract volumes, and replacement values for the reference month and date. The most recent survey was in April 2022 and covered 52 central banks. In Switzerland, 30 banks participated. Bank for International Settlements, Triennial Survey Foreign Exchange and Over-the-Counter (OTC) Derivatives Markets in 2022 (Preliminary results) <https://www.bis.org/statistics/rpfx22.htm> (Accessed on November 3, 2022). Full publications are available on the BIS website free of charge: www.bis.org.

profits. Although derivative markets have come under scrutiny for abuses,² derivative instruments hold an important position in the financial industry due to their ability to shift risk from those who do not want it to those who do.

Switzerland's financial sector (especially the banking sector and asset managers) has actively participated in developing global derivative markets. Since it created the world's first completely automated derivatives exchange (SOFFEX) in 1988, the pace of activity accelerated, with a rapid-fire succession of mergers, acquisitions, and new product introductions. The key to success has been offering valued products at competitive prices with highly efficient processes. These attributes have been combined with trusted commitments to protect client confidentiality and assurances of liquidity and solvency, especially during stressful financial periods. This chapter describes Switzerland's derivative markets and its financial industry's efforts to offer a wide array of competitive derivative products on one of the most advanced trading platforms in the world.

Evolution of the Derivative Markets

Derivative contracts have been in use for more than two millennia. There is evidence, as early as 2000 B.C., that they were used in trades between India and the Arab Gulf.³ In his book *Politics*, Aristotle tells the story of Thales, who contracted the future use of oil presses in the towns of Miletus and Chios after predicting a good olive harvest the following year (apparently based on his astrological skills).⁴ With few competitors to bid against him, Thales secured the presses at meager prices, and, when the abundant oil-making harvest arrived, he was able to charge a handsome price for the presses he controlled.⁵

Derivatives are creative byproducts of volatility. Starting in the 1970s and extending into the twenty-first century, their usage, sophistication, and volume have grown significantly. Europe, in general, and Switzerland, in particular, have nurtured their derivative markets. Growth in European derivative markets has paralleled the United States, albeit with a lag. During

² John Marthinsen, *Risk Takers: Uses and Abuses of Financial Derivatives*, DeGruyter, 2018.

³ Ibid.

⁴ Aristotle, *Politics*, Book 1, Sect. 1259a, <http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.01.0058%3Abook%3D1%3Asection%3D1259a> (Accessed on August 23, 2022).

⁵ This story is sometimes told slightly differently but with the same outcome. In the alternate version, Thales is credited with purchasing options on the future use of olive presses.

the 1970s, large derivative exchanges existed almost exclusively in the United States, but Europe followed in step during the 1980s and 1990s as trends in financial deregulation spread globally. The twenty-first century has witnessed a rise in Asian derivative markets.

From the beginning, state-of-the-art communication systems were an inseparable component of US, European, and Asian derivative exchanges. Fully electronic transaction platforms revolutionized trading behavior and strategies, thereby setting the pace for other sectors of the financial markets.

Derivative markets have had their share of problems. Many observers trace the roots of OTC market difficulties to the *U.S. Commodity Futures Modernization Act of 2000 (CFMA)*, which recast the competitive derivative landscape, both in the United States and internationally, enabling trading practices that fueled speculation. Because the United States was such a dominant and established international player, its rules, regulations, and procedures affected the exchanges of all nations wishing to compete in these markets. As a result, the laissez-faire attitude of US regulators, based on a free-market ideology, spilled into other countries.

The *CFMA* exempted eligible users⁶ of OTC derivatives from trading and clearing regulations imposed on exchange-traded products. By disconnecting OTC markets from the familiar moorings of exchange-traded markets and reporting requirements and severing them from most federal and state regulations, the *CFMA* encouraged growth in the OTC derivative markets and promoted the abandonment of sensible exposure-to-reserve ratios.⁷ Warning signs were abundant. In 2008, U.S. Securities and Exchange (SEC) Director Christopher Cox called the derivative market a “regulatory black hole.”⁸

The US financial crisis from 2007 to 2009 caused the US Congress, on July 21, 2010, to pass the Dodd-Frank *Wall Street Reform and Consumer Protection Act*.⁹ This far-reaching *Act* effectively touched every major part of the US OTC derivative market to increase transparency, improve efficiency, reduce counterparty risk, and diminish systemic threats to the US financial system.

⁶ An eligible user generally needs to have assets worth at least US\$10 million.

⁷ For the most part, the *Act* removed state and federal supervision. One major exception was in cases of fraud.

⁸ In 2008, uncovered CDS transactions were estimated to be 80 to 90% of the swap market (i.e., three-to-four times as large as covered CDS transactions). U.S. Senate, The Role of Financial Derivatives in the Current Financial Crisis: Hearing before the Senate Agricultural, Nutrition, and Forestry, 110th Congress 3, October 14, 2008, chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.agriculture.senate.gov/imo/media/doc/110_838.pdf (Accessed on August 23, 2022). See the testimony of Eric Dinallo, Superintendent, New York State Insurance Department.

⁹ U.S. Congress, Public Law 111—203—Dodd-Frank Wall Street Reform and Consumer Protection *Act*, July 21, 2010, <https://www.govinfo.gov/app/details/PLAW-111publ203#:~:text=Full%20Title,practices%2C%20and%20for%20other%20purposes> (Accessed on August 23, 2022).

Title VII of the *Act* (the *Wall Street Transparency and Accountability Act of 2010*)¹⁰ established a new framework for regulating and supervising OTC derivatives.

To improve derivative transparency and safety, the *Act* focused on clearing, trading, capital and margining requirements, segregation of customer margin accounts, and end-user exemptions.¹¹ It also addressed position and activity limits, ownership and corporate governance of derivative clearing organizations, market structure, swap execution facilities, and new business standards.¹² Finally, the *Act* addressed reporting, recordkeeping, confirmations, documentation, regulation, and regulatory coordination.¹³ One of the easiest ways to accomplish these goals was to require the execution of derivative transactions on trading platforms (e.g., swap execution and clearing facilities). With some exceptions, such as end-user hedging, all approved (clearable) derivative transactions were required to be cleared and executed on such platforms.¹⁴

Regulatory responsibilities for swaps were separated and assigned to the Commodity Futures Trading Commission (CFTC); securities-based swaps were delegated to the Securities and Exchange Commission (SEC).¹⁵ Cross-agency coordination and cooperation were mandated. Strict rules were imposed to guarantee that net and gross positions were transparent. Limitations and prohibitions were placed on the activities and functions of insured depository institutions and systemically significant entities. The Volcker Rule banned proprietary trading by insured banks and their affiliates. The *Collins Amendment* set minimum capital requirements, and the *Lincoln Provision* required banks to push out unauthorized derivative transactions into independently capitalized companies.

¹⁰ *Title VII* refers specifically to swaps, but swaps are broadly defined to include most OTC derivatives, such as calls, puts, floors, and collars. According to *Title II Sect. 206A* of the *Gramm-Leach-Bliley Act*, swaps include “any individually negotiated contract, agreement, warrant, note, or option that is based, in whole or in part, on the value of any interest in, or any quantitative measure or the occurrence of any event relating to, one or more commodities, securities, currencies, interest or other rates, indices, or other assets.” See U.S. Senate Committee on Banking, Housing, and Urban Affairs, Conference Report and Text of Gramm-Leach-Bliley Act, <https://www.congress.gov/congressional-report/106th-congress/house-report/434/1?overview=closed> (Accessed on August 23, 2022).

¹¹ Individuals who use OTC derivatives to hedge risks associated with consuming or producing products are defined as commercial end-users and, therefore, are exempt from the clearing requirements. Financial entities, such as swap dealers, major swap participants, commodity pools, private funds, and bank-related intermediaries, are not commercial end-users and must obey the new rules.

¹² Among the areas touched are the know-your-customer rules, risk-disclosure requirements connected to scenario analyses, and fiduciary responsibilities.

¹³ The *Act* also required derivative transactions not cleared through a central clearinghouse to be reported to regulatory authorities.

¹⁴ Regulators decide on individual swaps that must be cleared and on categories, types, and classes.

¹⁵ Securities-based swaps are built on narrow security indices, single securities, and loans.

Because derivative markets are so intimately and inextricably intertwined with their corresponding underlying markets, meaningful reform in the United States could only be accomplished if it were done at both the derivative and underlying levels. Similarly, because financial markets are so globally interconnected, the success of US reforms depended on equally significant reforms internationally. Without such cooperation, the derivative business would quickly shift to markets of least resistance, which could prompt an undesired race to the bottom as countries compete to have the least restrictive regulatory environment.

US rules governing OTC derivatives directly affected domestic US financial markets and had ripple effects worldwide. To the extent these rules increase costs, they could have dampened derivative market growth and reduced bank profits. Higher costs could have caused US financial institutions to lose competitive advantages to foreign markets. Less liquidity may have caused many bespoke (OTC) derivatives to become less available, harder to execute, and higher priced. Clearinghouses may have been forced to clear transactions for which no adequate risk mitigation alternatives existed. Confusion was sure to result as new rules were promulgated and their inconsistencies and consequences came to light, but this is a natural part of the maturing process for any organic entity. Due to *Dodd-Frank Act* reforms, major derivative providers, like Switzerland, reassessed their domestic markets.

OTC Derivatives Versus Exchange-Traded

Derivative trading occurs on OTC markets (i.e., between counterparties with customized products that fit their specific needs) and exchanges with standardized products.

OTC-Traded Derivatives

Market participants use the OTC market to trade customized, bilateral derivative contracts. In contrast to standardized exchange-traded markets, the OTC markets offer users the ability to customize product features, allowing them to address specific hedging or speculative needs. By tailoring derivative contracts, users can avoid potentially costly risks caused by mismatches between the size, maturity, and basis between underlying positions and their hedges. OTC derivatives may lack critical benefits of exchange-traded derivatives, such as liquidity, price transparency, efficient price discovery, and low

counterparty risk. Nevertheless, customization has fueled their rapid growth and enabled them to dwarf the size of exchange-traded derivatives.

The size of OTC markets can be deceiving because closed trades are typically made with counterparties different from the original ones. As a result, the market's size increases every time a position is reversed before maturity. These reversals (purchases and sales) cause the gross size of the OTC market to rise without the net market size and risk changing. Problems can arise with counterparty risk. The more OTC contracts traded before maturity, the more distant the original counterparties are from one another. A weak one who defaults anywhere along the purchase-and-sale chain could cause this OTC house of cards to fall. Taken to an extreme, these failures could cause systemic problems, as happened in 2008 when credit default losses led to the collapse of Lehman Brothers and resulted in severe financial difficulties in the United States. Exchanges reduce or eliminate this double counting by netting transactions.

Among the significant OTC participants are:

1. Investors interested in margin loans to leverage shareholdings;
2. Banks, asset managers, and large corporations seeking to hedge existing exposures;
3. Investors looking to acquire shareholdings in companies;
4. Investors searching for tailor-made exposures through structured products;
5. Investors pursuing yield enhancement, and
6. Investors on the hunt for exposure to markets and otherwise unavailable products.

Standardized Exchange-Traded Derivatives

Exchange-traded derivatives are standardized contracts transacted on globally linked electronic platforms. The exchange functions as a middleman between buyers and sellers, offering liquidity and anonymity to customers. Being well capitalized, they reduce counterparty risks present in the OTC markets.

Exchange-traded derivatives enjoy high price transparency and efficiency levels, especially for clearing, netting, and margin collection and maintenance. Generally, the number of contracts traded daily is large enough to allow all but the largest derivative traders the opportunity to quickly buy or sell positions without affecting their market prices. Customers benefit by efficiently liquidating unwanted holdings or acquiring desired ones.

Nevertheless, there are times when contracts can be relatively illiquid, such as when exceptionally large positions need to be traded. In these cases, an

institutional investor may directly engage market makers to agree and finalize transactions before informing the general public (i.e., off-exchange trades are negotiated and agreed to and afterward blocked on the exchange). For substantial trades, notification to the exchange may be delayed until after the market closes, allowing investors to protect their information temporarily. In doing so, they can take advantage of an exchange's standardized contracts, margining, and clearing. Investors also gain flexibility by agreeing to large, off-exchange trades directly with market makers, who provide liquidity to the system.

To minimize counterparty and systemic credit risks, exchanges require customers to deposit cash margins, which are marked to market daily. Exchanges further mitigate risk by netting and efficiently clearing transactions. One of the striking features of the 2007-to-2009 financial crisis was that derivative exchanges survived the disaster, despite plunging housing and stock prices. None failed, and trading took place in an orderly manner. Generally, the systems regulating these exchange-traded derivatives worked as they should have, and trading activity functioned effectively. Trading rules and regulations were followed and enforced, and, as a result, trading was essentially free from price manipulation, fraud, and abuses.¹⁶

Global OTC Derivative Markets

Relative to almost any financial measure, derivative markets are enormous. Table 10.1 shows the two ways to gage the size of global OTC derivatives for interest rate, foreign exchange, credit default swap, equity-linked, and commodity derivative contracts. At the end of 2021, the notional value and gross market value of these outstanding OTC derivative contracts were estimated at approximately USD 1,207 trillion and USD 25 trillion, respectively.¹⁷ Derivatives backed by interest-earning securities comprised the lion's share of the total market (i.e., 70.1%).

Table 10.2 shows the 2020 to 2022 figures for global exchange-traded futures and options, which are markets that pale compared to the OTC

¹⁶ The Libor scandal in 2012 was clearly an exception. James McBride, Understanding the Libor Scandal, Council on Foreign Relations, <https://www.cfr.org/background/understanding-libor-scandal> (Accessed on August 30, 2022).

¹⁷ As mentioned earlier in the chapter, the gross size of OTC markets significantly overstates their importance and risk. The net OTC market size is a better measure of risk. The BIS reports figures for notional amounts outstanding and gross market values but not the net size of these OTC markets. Bank for International Settlements, OTC Derivatives Outstanding, May 12, 2022, https://www.bis.org/publ/otc_hy2105/intgraphs/graphA1.htm (Accessed on August 28, 2022). Full publications are available on the BIS website free of charge: www.bis.org.

Table 10.1 Notional and Gross Value of Global Derivative Transactions by Product Group: 2020 & 2021

Risk Category/Instrument	Notional Amounts Outstanding			Gross Market Value		
	2020	Percent	2021	2020	Percent	2021
Interest Rate	961.6	80.9	963.4	79.8	73.7	17.6
Foreign Exchange	191.4	16.1	206.7	17.1	18.6	5.0
Credit Default Swaps	17.2	1.4	17.6	1.5	1.3	0.4
Equity-Linked	13.5	1.1	14.8	1.2	4.8	1.4
Commodity	4.2	0.4	4.7	0.4	1.6	0.7
Total Contracts	1,187.9	100	1,207.2	100	100	25.1

Source Bank for International Settlements, Global OTC Derivatives Outstanding, <https://www.bis.org/statistics/derstats.htm> (Accessed on November 3, 2022). Full publications are available on the BIS website free of charge: www.bis.org

Table 10.2 Exchange-Traded Futures and Options: 2020 to 2022

Notional principal in Billions of USD

	Open Interest			Daily Turnover		
	Dec 2021	March 2022	June 2022	2020	2021	June 2022
Futures						
<i>Interest Rate</i>	33,816	40,401	39,259	5,281	5,723	8,841
<i>Foreign Exchange</i>	313	336	301	133	140	168
Options						
<i>Interest Rate</i>	45,826	53,792	54,848	1,403	1,509	1,770
<i>Foreign Exchange</i>	135	133	137	11	14	14

Source Bank for International Settlements, Exchange-Traded Futures and Options by Location of Exchange, <https://stats.bis.org/statx/srs/table/d1> (Accessed on November 3, 2022). Full publications are available on the BIS website free of charge: www.bis.org

derivative markets (compare Tables 10.1 and 10.2). Exchange-traded interest rate derivatives dominated relative to foreign exchange derivatives.

Switzerland's Derivative Market Development

Forward transactions and premium trades were a part of Swiss financial markets long before the 1970s when derivatives burst onto the world economic stage. Nevertheless, Swiss derivative development accelerated after the collapse of the Bretton Woods exchange rate system in 1971 and the subsequent failure of the *Smithsonian Agreement* in 1973. To remain competitive in the international financial markets, Switzerland needed a derivative counterpart to its equity, debt, and currency markets.

Swiss Options and Financial Futures Exchange (SOFFEX)

During the early years of the derivative surge, Swiss derivative markets were fragmented, with multiple local exchanges vying for pieces of the action. Initially, Swiss exchanges traded derivatives using the open outcry method, having local market participants trade derivatives among themselves using hand signals to signify buy and sell orders and the agreed-upon price. This method put them at a competitive disadvantage in terms of volume and efficiency relative to rapidly computerizing exchanges. The writing was on the wall. To survive and thrive, the Swiss derivative markets needed a

consolidated, efficient, automated, and state-of-the-art derivatives trading platform.

Behind the formidable growth of derivatives in Switzerland and worldwide was the evolution of trading platform technologies that permitted the transition from phone-based to web-based transactions. The ideal system would be accessible from anywhere and at any time, but convincing local exchanges to consolidate and completely change their mode of operation was problematic because it entailed losses of jobs, incomes, and power. Nevertheless, the advantages of creating an electronic exchange were significant enough to catch the imagination of a broad enough spectrum of Switzerland's financial community to make the transition.

In 1988, the Swiss Options and Financial Futures Exchange (SOFFEX) was launched as the world's first fully automated options and futures exchange. It renewed and reinvigorated Switzerland's standing as one of the technological leaders in the financial community. Because financial markets are complex and interconnected, creating a fully electronic derivatives exchange was only possible with efficient equity and debt markets as a prerequisite.

In 1989, the Swiss Stock Exchange Association's board officially decided to create a single, fully electronic, integrated financial exchange for Switzerland. Swiss legislation was changed to transition from local markets to a unified national exchange. A federal Swiss exchange law replaced cantonal legislation, thereby facilitating the closure of local floor-trading exchanges in Geneva, Basel, and Zurich. In their place, the SWX Swiss Exchange was created as the nation's integrated marketplace for trading, clearing, and settling financial transactions. In September 2008, the SWX Swiss Exchange changed its name to SIX Swiss Exchange Ltd¹⁸ to promote the brand strategy of SIX Group (formerly Swiss Financial Market Services).

Scoach, SIX Structured Products, & Swiss Digital Exchange

The momentum of financial reform continued. In 1998, SOFFEX merged with Deutsche Börse (DTB)¹⁹ to form Eurex. This partnership proved to be

¹⁸ SIX is an abbreviation for Swiss Infrastructure and Exchange. In 2008, the three major providers of Switzerland's financial infrastructure (i.e., SWX Group, Telekurs Group, and SIS Group) merged to create Swiss Financial Market Services, which later became SIX Group.

¹⁹ The Deutsche Börse was formerly known as Deutsche Terminbörse, which is why the "DTB" abbreviation is used. Otherwise, it might be confused with the abbreviation for Deutsche Bank (DB).

a wise, business-savvy decision. It not only united the financial markets of two highly developed countries, but it also merged financial entities willing and able to abandon old ways and positively transform their trading platforms.

By 2007, electronic broking systems played a crucial role in global derivative markets, and both Switzerland and Germany were recognized for their advanced technological prowess. Not surprisingly, electronic transactions in these two countries were among the highest in the world.

On January 1, 2007, SWX Swiss Exchange and DTB started and managed an exchange for structured products called Scoach, with operations in Eschborn, Germany (near Frankfurt), for euro-denominated contracts, and in Zurich, for Swiss franc-denominated ones. In February 2013, Scoach was split into Scoach Europa AG, wholly owned by DTB, and Scoach Schweiz AG, a wholly owned subsidiary of the SIX Swiss Exchange. Scoach Schweiz AG was renamed SIX Structured Products in November 2013.

In 2019, SIX Structured Products launched the SIX Digital Exchange (SDX), a FINMA-licensed and regulated financial market infrastructure (FMI), offering a digital marketplace for security trading, settlement, and custody.²⁰ As part of its strategy, the SDX has collaborated with technologically advanced companies that can bring value to the Swiss financial value chain. From the beginning, the SDX was responsible for executing the SIX Group's digital asset and blockchain strategies, releasing a blockchain platform the year it was created. On it, digital security tokens that include equities, bonds, funds, and commodities can be traded. The SDX chose R3's Corda, an open-source distributed-ledger platform developer, to build its blockchain platform. The SDX's efforts were expanded in May 2019 when the SIX Group confirmed the development of its own stablecoin that would be pegged to the Swiss franc and traded on the SDX.²¹

On its digital platform, the SDX offers FQX's standardized, short-term debt instruments called eNotesTM.²² Single eNotes are stored as non-fungible tokens (NFTs) on the SDX's blockchain. Issuers can obtain financing by issuing multiple eNotes. An eNote can be used to pay a specific amount

²⁰ SIX, SIX Digital Exchange Gets Regulatory Approval from FINMA, September 10, 2021, <https://www.six-group.com/en/newsroom/media-releases/2021/20210910-sdx-finma-approval.html> (Accessed on July 17, 2022).

²¹ SIX, Switzerland: SIX Digital Exchange Opening its Doors to NFTs, <https://en.cryptonomist.ch/2021/11/30/switzerland-six-digital-exchange-opening-its-doors-to-nfts/> (Accessed on August 30, 2022).

²² SDX operates on a functional mock-up interface (FMI), which is an open-source financial market infrastructure described in the PFMI Report entitled "Global LEI System" (i.e., Global Legal Entity Identifier System). It follows the FMIA's standards. See FMI, <https://fmi-standard.org/#:-:text=The%20Functional%20Mock%2Dup%20Interface,Modelica%20Association%20Project%20on%20GitHub.>

to another party or for future purchases, much like a forward contract. The SDX-FQX collaboration increases the liquidity and efficiency of Switzerland's financial markets and globalizes Switzerland's debt market infrastructures.

SWISS FRANC-DENOMINATED DERIVATIVE MARKETS

While dollars and euros are the dominant currencies in which derivative trades are transacted, the Swiss franc remains one of the most important currencies in the world, along with the Japanese yen and British pound.

Swiss Franc OTC Foreign Exchange and Interest Rate Derivatives

Figure 10.1 shows the growth of OTC-traded Swiss franc-denominated foreign exchange and interest rate derivatives.

- Between 1995 and 2010, they grew by 257%, from USD 91 billion to USD 324 billion, which was a 29% compound annual growth rate;

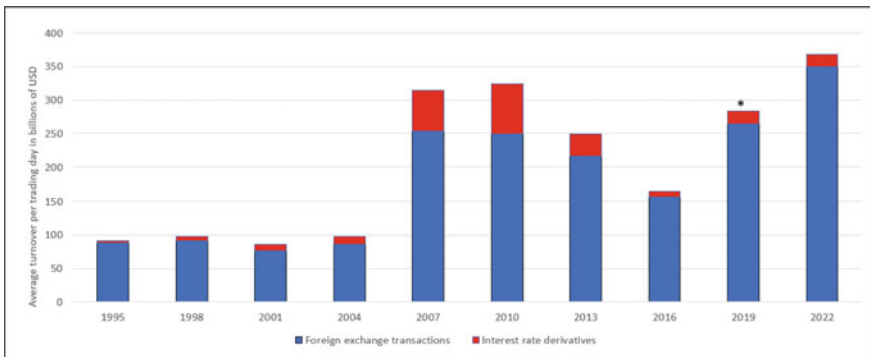


Fig. 10.1 Daily Swiss Franc OTC Foreign Exchange and Interest Rate Derivatives: 1995–2022 *Figures for 2019 cannot be compared to previous years due to a change in the statistical collection. See footnote 23. *Source* Bank for International Settlements, Turnover in Foreign Exchange and Derivatives Markets in Switzerland—BIS Triennial Survey in 2019, https://data.snb.ch/en/topics/texts/doc/ddum_2019#umdev (Accessed on August 26, 2022). Bank for International Settlements, Triennial Survey Foreign Exchange and Over-the-Counter (OTC) Derivatives Markets in 2022 (Preliminary results) <https://www.bis.org/statistics/rpfx22.htm> (Accessed on November 3, 2022). Full publications are available on the BIS website free of charge: www.bis.org

- From 2010 to 2016, these two derivative classes fell by approximately 49% (i.e., at a compound annual rate of decline equal to almost 11%); and
- From 2019 to 2022, OTC-traded Swiss franc-denominated foreign exchange and interest rate derivatives grew by almost 30%, a compound annual growth rate of about 9%.²³

Table 10.3 shows the nominal size of each Swiss franc derivative product group and its growth rate from 1995 to 2022.²⁴ In 2022, interest rate swaps dominated the field of derivative alternatives, accounting for 79% of the market, followed distantly by outright forwards (15%), and foreign exchange options (5%). Together, they were responsible for more than 99% of Switzerland's foreign exchange and interest rate derivatives. Growth rates varied during the 27 years, with foreign exchange swaps, outright forwards, foreign exchange options, and currency swaps growing between 6 and 8% per year. Volume in forward rate agreements rose by 0.4% per year, and options fell by 0.2% per year, respectively.

In 2022, 76% of all Swiss franc-denominated foreign exchange and interest rate derivatives were among financial institutions in different countries. Local financial institutions accounted for 21%, and both local non-financial customers and cross-border non-financial customers accounted for slightly more than 1% each.²⁵ For currency pairs, daily turnover in the EUR/USD and CHF/USD contracts accounted for 29 and 23%, respectively, with contracts for EUR/CHF (8%) and USD/JPY (7%) following behind.²⁶

Swiss Franc Exchange-Traded Futures Market

Futures markets in Swiss franc-denominated foreign exchange and interest rate derivatives were a small fraction of all OTC transactions. In 2022,

²³ Figures for 2019 cannot be compared to previous years due to a change in the statistical collection. For the first time, back-to-back deals (e.g., transactions transferring customer risk from a foreign group entity to a Swiss-domiciled entity) were included, which accounted for about 75% of the increase from 2016.

²⁴ Bank for International Settlements, Triennial Central Bank Survey of Foreign Exchange and Over-the-Counter (OTC) Derivatives Markets in 2019, <https://www.bis.org/statistics/rpfx19.htm> (Accessed on August 25, 2022). Bank for International Settlements, Triennial Survey Foreign Exchange and Over-the-Counter (OTC) Derivatives Markets in 2022 (Preliminary results, <https://www.bis.org/statistics/rpfx22.htm> (Accessed on November 3, 2022)). Full publications are available on the BIS website free of charge: www.bis.org.

²⁵ Bank for International Settlements, Triennial Survey Foreign Exchange and Over-the-Counter (OTC) Derivatives Markets in 2022 (Preliminary results) <https://www.bis.org/statistics/rpfx22.htm> (Accessed on November 3, 2022)). Full publications are available on the BIS website free of charge: www.bis.org.

²⁶ Ibid.

Table 10.3 Daily OTC Swiss Franc Foreign Exchange and Interest Rate Derivatives by Product: 1995–2022

Foreign Exchange Derivatives					Interest Rate Derivatives	
Year	Billions of USD per Day				Forward rate agreements	Options
	Foreign exchange swaps	Outright forwards	Foreign exchange options	Currency swaps		
1995	33.9	8.4	1.9	0.02	1.6	0.34
1998	41.8	5.5	9.7	0.25	1.9	0.05
2001	41.1	6.3	5.5	0.06	7.8	0.04
2004	49.4	6.7	6.2	0.03	1.6	0.04
2007	116.4	16.8	11.9	0.08	6.3	0.07
2010	172.9	10.7	8.0	0.02	19.1	0.05
2013	131.5	13.8	8.1	0.17	13.7	0.03
2016	116.4	8.4	6.2	0.01	1.9	0.13
2019	160.7	29.9	20.6	0.04	3.7	0.03
2022	215.9	41.5	12.6	0.18	1.8	0.19
Yearly Growth Rate (%)	7	6	7	8	0.4	–2

Source Bank for International Settlements, Triennial Central Bank Survey of Foreign Exchange and Over-the-counter (OTC) Derivatives Markets in 2019, <https://www.bis.org/statistics/rpfx19.htm> (Accessed on August 25, 2022). Bank for International Settlements, Triennial Survey Foreign Exchange and Over-the-Counter (OTC) Derivatives Markets in 2022 (Preliminary results), <https://www.bis.org/statistics/rpfx22.htm> (Accessed on November 3, 2022). Full publications are available on the BIS website free of charge: www.bis.org

the Swiss franc-denominated open interest for exchange-traded funds was approximately 0.2% of the total global size, and the daily average turnover for Swiss franc interest rate and foreign exchange derivatives was close to zero percent (see Table 10.4).²⁷

Swiss SIX Exchange's Structured Products

The SIX Exchange provides a platform to trade warrants and structured products from various issuers. Structured products are combinations of cash

²⁷ Bank for International Settlements, Exchange-Traded Futures, by Currency, <https://stats.bis.org/statx/srs/table/d3> (Accessed on August 27, 2022). Full publications are available on the BIS website free of charge: www.bis.org.

Table 10.4 Swiss Franc Exchange-Traded Futures and Options: 2020, 2021, and 2022
Notional Principal in Billions of USD

	Open Interest			Daily Turnover		
	Dec 2021	March 2022	June 2022	2020	2021	Feb-June 2022
Futures						
Interest Rate						
Short Term	162	0	0	18	15	0
Long Term	0	0	0	0	0	0
Foreign Exchange	10	8	8	4	3	4
Options						
Interest Rate						
Short term	0	0	0	0	0	0
Long Term	0	0	0	0	0	0
Foreign Exchange	4	1	1	0	0	0
Total						
Interest Rate	162	0	0	0	0	0
Foreign Exchange	14	9	9	4	3	4

Source Bank for International Settlements, Exchange-Traded Futures and Options by Location of Exchange, <https://stats.bis.org/statx/srs/table/d2> (Accessed on November 3, 2022). Full publications are available on the BIS website free of charge: www.bis.org

investments and derivatives.²⁸ Examples of cash investments are bonds and shares; options, forwards, and swap contracts are derivative products.²⁹ Once combined, structured products are sold as stand-alone securities and provide investors with opportunities to invest in assets with payoff profiles that may not have been available previously.

A significant benefit of structured products is their ability to create tailor-made payoff profiles that can be used to hedge, extract yields, or speculate.

²⁸ A new and flexible trading alternative called Swiss DOTS was launched in May 2012. Swiss DOTS is an abbreviation for the Swiss Derivatives OTC Trading System. It is the creation of Swissquote, the marketing brand for activities of Swissquote Bank Ltd (Switzerland), which the FINMA regulates. Swissquote's key partners are Goldman Sachs, UBS, Société Générale, Vontobel, and BNP Paribas. Swiss DOTS offers investments in equities, equity indices, currencies, futures, metals, and currencies, offering four major product categories: Warrants, Knock-out Warrants, Mini-Futures, and Factor Certificates. Swissquote, @Swiss DOTS: 90,000 reasons to Trade, <https://en.swissquote.com/trading/investment-products/swiss-dots#> (Accessed on September 1, 2022).

²⁹ Most structured products have embedded exotic options, such as Barrier Options, which can generate an additional safety buffer for knock-in options or take advantage of elevated volatility skews for knock-out options. A "volatility skew" refers to the standard deviation differences between at-the-money, in-the-money, and out-of-the-money options. These differences are reflected in their prices.

Furthermore, they can allow participation in markets and products which otherwise might not be accessible or difficult to find. As we will discover later in this chapter (see Table 10.6), “yield enhancement” is the principal goal of most structured-product investors on Swiss exchanges. Highly customized structured products can lack liquidity because the pool of potential investors shrinks the more esoteric a product becomes. For hedgers that settle at maturity (i.e., those using a buy-and-hold strategy), liquidity is not a significant concern.

SIX’s structured products are mainly denominated in US dollars, euros, and Swiss francs. Publication of real-time prices and the SIX’s guarantee of liquidity³⁰ enhances the ability to trade them at any time (24/7). Since March 2015, Issuers on the SIX Exchange have been required to publish all the fees that enter into the issue price, including partner payments.³¹

Professional exchange participants on the SIX are security traders and foreign security exchange members authorized to perform trades on behalf of their customers, with access to the reference market for Swiss securities.³² They include banks, collective investment schemes, asset managers for collective investment schemes, fund management companies, holding companies of financial or insurance groups and conglomerates, insurance and reinsurance companies, investment foundations, pension funds, and securities dealers. Becoming a trading participant is a two-step process involving business and operation setups. Successful applicants must comply with Switzerland’s *Stock Exchange Act*, be authorized securities traders or members of a foreign securities exchange, comply with organizational, accounting, and auditing standards, and follow the rules and directions established by the Swiss Stock Exchange.

Because the issuers of underlying bonds or other debt obligations are liable for repaying their commitments, these products’ risks are based on the issuers’ creditworthiness. Virtually all structured products are unsecured debts, which means they lack protection in cases of issuer default or insolvency.³³ Perceptions of creditworthiness can be obtained from credit spreads and credit ratings, which are made available on the SIX’s website, as are the

³⁰ Swiss Structured Products Association, Discover the Potential, chrome-extension://efaidnbmninnibpcjpcglclefindmkaj/https://sipa.ch/wp-content/uploads/2020/06/sipa_vademecum_en.pdf (Accessed on August 27, 2022).

³¹ Ibid.

³² SIX, Join the Swiss Stock Exchange, <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/trading/participation/trading-participants.html> (Accessed on July 15, 2022).

³³ It is possible to structure a product using a special purpose vehicle (SPV) that reduces or eliminates credit risk

credit ratings of its members.³⁴ In Switzerland, these financial instruments are not considered collective investments and, therefore, are not protected by Switzerland's *Collective Investment Schemes Act (CISA)*.³⁵ For these reasons, investors must beware of the implied credit (counterparty) risk involved in structured product transactions and understand the risks they face when an issuer has difficulty meeting payments. The SIX has created rules and safety nets to mitigate these risks, such as margin deposits and netting.

The SIX Swiss Exchange is responsible for admitting structured products that trade on the SIX platform. Once approved, *SIX Exchange Regulation (SRG)* is responsible for customer protection by regulating Swiss issuers and their securities. The SRG is an affiliate of the SIX Swiss Exchange, ensuring that structured products are transparent, with clear definitions and terms.

The Swiss Structured Products Association (SSPA) has 40 members, who act as issuers, buy side, markets, and partners. Together, they account for 95% of Switzerland's structured products market.³⁶

Domestic banks and foreign financial institutions participate on the SIX. They include:

- Big banks: UBS and Credit Suisse,
- Cantonal banks: Zürcher Kantonalbank, Banque Cantonale Vaudoise, Basler Kantonalbank, and Luzerner Kantonalbank, and
- Other Swiss banks, such as Bank Julius Bär, Bank J. Safra Sarasin, Bank Vontobel, VFP Dubai, and Raiffeisenbanken.

Among the foreign financial institutions that participate on the SIX are Goldman Sachs, J.P. Morgan, and Société Générale.

The Swiss market for structured products has been growing rapidly. In 2020 and 2021, turnover reached CHF 368 billion and CHF 337 billion, respectively, with the most popular asset classes being equity (approximately 56%), foreign exchange (roughly 24%), and fixed-income products (about 10%). Almost two-thirds of the turnover was in non-listed products. Euros

³⁴ SSPA, Homepage, www.sspa-association.ch/creditworthiness (Accessed on August 27, 2022).

³⁵ State Secretariat for International Finance, Collective Investment Schemes Act (CISA), <https://www.sif.admin.ch/sif/en/home/finanzmarktpolitik/financial-market-regulation/regulatory-projects/collective-investments-scheme-act-cisa.html> (Accessed on August 26, 2022).

³⁶ Swiss Structured Products Association, Structured Products at a Glance, chrome-extension://efaidnbnmnibpcjpcglclefindmkaj/https://sspa.ch/wp-content/uploads/2022/01/low_str20.03_struki_factsheet_a5_en.pdf (Accessed on August 26, 2022).

and US dollars, each with approximately 38%, and Swiss francs (12%) accounted for 88% of total turnover.³⁷

In Switzerland, only Swiss banks, insurers, stockbrokers, and foreign financial institutions supervised by Swiss authorities may engage in public sales, issues, guarantees, or distributions of structured products. They are further regulated by requiring each of these foreign institutions to have, among other things, at least one branch in Switzerland.³⁸

Table 10.5 lists the major categories of structured products on the SIX Exchange. In 2022, it offered 36,000 structured products arranged in five categories: (1) Capital protection, (2) Yield enhancement, (3) Participation, (4) Leverage, and (5) Investment products with reference issuers. Their functions are to:

- Protect capital,
- Optimize yields,
- Participate in the markets as one who would own the underlying, and
- Take on credit risk.

OTC equity derivatives are neither taxable for purposes of *Swiss Stamp Tax* nor do they trigger a withholding tax under the *Swiss Withholding Tax Act*.³⁹

In 2020 and 2021, yield enhancement was the most popular product traded on the SIX, followed distantly by leverage, participation, and capital protection (see Table 10.6).⁴⁰

Equity products have been responsible for more than half of the SIX's structured products activity, with foreign exchange transactions roughly half the size of equity trades and fixed income/credit trades nearly half of foreign exchange transactions (see Table 10.7 for 2020 and 2021 comparisons).

U.S. dollar-denominated products were most popular, followed closely by euros, with Swiss franc-denominated transactions accounting for about 12% of the total (see Table 10.8 for 2020 and 2021 figures).

³⁷ Swiss Structured Products Association, Structured Products Value Creation: Q4 2021, January 2022, chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/<https://sspa.ch/wp-content/uploads/2022/02/sspa-value-creation-report-q4-2021-en-vf.pdf> (Accessed on August 27, 2022).

³⁸ The Federal Council, Federal Act on Financial Services (Financial Services Act, FinSA, June 15, 2018, (Status as of August 1, 2021), Article 3 Definitions, Chapter 6 Offering of Structured Products and Creation of In-House Funds, and Article 91 Unauthorized Offering of Financial Instruments, <https://www.fedlex.admin.ch/eli/cc/2019/758/en> (Accessed on August 24, 2022).

³⁹ Non-Swiss withholding taxes might be assessed depending on factors like jurisdictions (double-tax treaties), specific issuers, and product structures.

⁴⁰ Floored floaters, autocallables, and reverse convertibles are examples of structured products that can be structured to defensively lock-in yields. These structured products can be aggressively constructed.

Table 10.5 SIX Structured Product Groups and Products⁴¹

Investment Products	Leverage Products
Capital protection products	Leverage products
Capital Protection Certificate with Participation	Warrant
Capital Protection Note with Barrier	Spread Warrant
Capital Protection Certificate with Twin Win	Warrant with Knock Out
Capital Protection Certificate with Coupon	Mini-Future
	Constant Leverage Certificate
Yield enhancement products	Investment products with reference issuers *
Discount Certificate	Credit-linked Note
Barrier Discount Certificate	Conditional Capital Protection Note with additional credit risk
Reverse Convertible	Yield Enhancement Certificate with additional credit risk
Barrier Reverse Convertible	Participation Certificate with additional credit risk
Conditional Coupon Reverse Convertible	
Conditional Coupon Barrier Reverse Convertible	
Participation products	
Tracker Certificate	
Outperformance Certificate	
Bonus Certificate	
Bonus Outperformance Certificate	
Twin Win Certificate	

*The "Investment Products with Reference Issuers" category was added as a new category in 2011 by the SSPA. The fixed-income securities for these products are from sources other than banks, providing opportunities to protect portfolios, diversity, or increase yields. *Source* Swiss Structured Products Association, Swiss Structured Product Industry Report Q1 2022, June 2022, [chrome-extension://efaidnbnmnibpcjpcglclefindmkaj/https://sspa.ch/wp-content/uploads/2022/06/sspa-swiss-structured-product-industry-report-q1-2022-en.pdf](https://sspa.ch/wp-content/uploads/2022/06/sspa-swiss-structured-product-industry-report-q1-2022-en.pdf) (Accessed on August 28, 2022)

SIX Trade Repository AG and Regis-TR S.A

On April 3, 2017, FINMA authorized Switzerland's first Swiss trade repository, the SIX Trade Repository AG. It also recognized Regis-TR S.A as

⁴¹ The source of Table 10.5 is the SSPA. Some professional traders and asset managers might be critical of it, arguing that a few categories seem redundant. For example, Reverse Convertibles with or without Barriers are similar in investment goals. Some products could be included, such as Range Accrual Notes and more bespoke products, as well as autocallable and issuer-callable overlays, which are among the most popular.

Table 10.6 Customer Demand for SIX Product Classes: 2020 and 2021

	2020 (%)	2021 (%)	Change (%)
Capital Protection	13	10	-3
Yield Enhancement	46	50	+4
Participation	14	13	-1
Leverage	27	25	-2
With reference entities	0	2	+2

Source Swiss Structured Products Association, Structured Products Value Creation: Q4 2021, <chrome-extension://efaidnbmninnibpcjpcglclefindmkaj/https://sspa.ch/wp-content/uploads/2022/02/sspa-value-creation-report-q4-2021-en-vf.pdf> (August 28, 2022)

Table 10.7 Demand for Structured Product Groups: 2020 and 2021

	2020 (%)	2021 (%)	Change (%)
Equity	56	57	+1
Commodities	5	3	-2
Foreign Exchange	24	24	0*
Fixed Income/Credit	11	8	-3**
Other	5	8	+3

*Note Large multi-national company hedge transactions are not included in this statistic, making Table 10.7 quite different from Table 10.1, which measures global OTC derivative activity. Table 10.7 is specific to Swiss Structured products.

**In 2022, there was a surge in fixed income/credit transactions due to widening credit spreads and higher interest rates, which should change these values for 2022. Source Swiss Structured Products Association, Structured Products Value Creation: Q4 2021, January 2022, Ibid.

Table 10.8 Currency Structure of SIX Structured Product Transactions: 2020 and 2021

	2020 (%)	2021 (%)	Change (%)
Swiss franc	13	11	-2
Euro	35	39	+4
U.S. dollar	40	36	-4
Other	12	14	+2

Source Swiss Structured Products Association, Structured Products Value Creation: Q4 2021, January 2022, Ibid.

Switzerland's first foreign trade repository.⁴² Authorization of these repositories obligates Swiss derivative participants (financial and non-financial) to report their transactions to a FINMA-authorized trade repository. Only one of the counterparties or a chosen third party is required to report the details

⁴² FINMA does not recognize Regis-TR S.A for EMIR reporting purposes. It accepts only reports under Swiss laws.

of open and new transactions. The report must be filed no later than one day after the transaction has been concluded, amended, or terminated. Among the details included in the report are counterparty identities and contract details, such as the transaction type, maturity, notional amount, settlement date, and currency denomination. Independent of the trade repository report, Swiss securities dealers and other exchange members must report their derivative or structured-product transactions to the exchange on which the underlying securities are listed. Swiss security firms and other SIX Exchange members must also report their derivative transactions to the exchange on which the underlying asset is admitted, regardless of whether it is traded on or off that exchange.

Switzerland's OTC Laws and Regulators

The organization and operation of Swiss financial market infrastructures and the conduct of financial market participants in securities and derivatives are based on the *Federal Act on Financial Market Infrastructures and Market Conduct in Securities and Derivatives Trading (FinMIA, June 19, 2015)*.⁴³ The *FinMIA* entered into force on January 1, 2016⁴⁴ and applied to derivative transactions between Swiss counterparties and between Swiss and foreign counterparties. Administration of these rules is the responsibility of the FINMA, the Swiss National Bank (SNB), and the Federal Department of Finance. The *FinMIA* delegates regulatory powers to Switzerland's Federal Council and the FINMA. The SNB has supervisory authority in cases where systemic threats to the Swiss financial system arise. Therefore, it imposes requirements on OTC counterparties for reporting, clearing, and risk mitigation.⁴⁵

The *FinMIA* prohibits insider trading and market manipulation.⁴⁶ Supporting it are ordinances offered as guidelines by the Federal Council, FINMA, and SBA. Three particular ordinances are most important. They are the following:

⁴³ The Federal Council, Federal Act on Financial Market Infrastructures and Market Conduct in Securities and Derivatives Trading (Financial Market Infrastructure Act, *FinMIA*), <https://www.fedlex.admin.ch/eli/cc/2015/853/en> (Accessed on July 15, 2022).

⁴⁴ *FinMIA* was later amended, taking effect on August 1, 2017.

⁴⁵ The *FinMIA* does not apply to the Swiss Confederation, cantons, municipalities, SNB, or the Bank for International Settlements.

⁴⁶ These rules also apply to non-admitted financial instruments, whose value is significantly affected by regulated instruments.

1. Federal Council-issued *Ordinance on Financial Market Infrastructures and Market Conduct in Securities and Derivatives Trading (Financial Market Infrastructure Ordinance, FinMIO)*,
2. FINMA-issued *Ordinance of the Swiss Financial Market Supervisory Authority on Financial Market Infrastructures and Market Conduct in Securities and Derivatives Trading (FINMA Financial Market Infrastructures Ordinance, FinMIO-FINMA)*, and
3. SNB's 2016-issued amendment to the *National Bank Ordinance (Ordinance to the Federal Act on the Swiss National Bank, NBO)*.⁴⁷

The guidelines in these ordinances are general, such as:

- Clarifying the processes for provisional recognition of the *European Market Infrastructure Regulation (EMIR)*;
- Informing participants of collateral exchange regulations;
- Explaining counterparty reporting requirements;
- Aligning Switzerland's obligation to exchange collateral with EU provisions, which required revising the *FinMIO*;
- Identifying OTC derivative categories that should be subject to clearing obligations, selected mainly for standardized interest-rate and credit derivatives, which meant entering into discussions over revising the *FinMIO-FINMA*;
- Requiring mandatory clearing for standardized OTC-traded credit derivatives and interest-rate derivatives denominated in euros, pounds, yen, and U.S. dollars, and
- Making FINMA-appointed auditors responsible for reporting to FINMA any breaches in *FinMIA*, with failures to comply elevated (possibly) to the FDF, which has the authority to initiate administrative criminal proceedings, with fines as high as CHF 100,000.

EUREX⁴⁸

Eurex Exchange is Europe's largest derivatives marketplace, with a product suite comprising actively traded contracts. Among the financial derivatives offered by EUREX are the following.

⁴⁷ These acts are described in Chapter 5: Swiss Financial Market Regulators & Laws.

⁴⁸ Eurex is an abbreviation for European Exchange.

1. Equity options, futures, total return swaps, security spread futures, and stock tracking futures,
2. Equity index derivatives,
3. Short-term, medium-term, and long-term interest rate futures and options,
4. Foreign exchange futures, options on futures, and rolling spot futures,
5. Volatility futures and options,
6. Total return futures on indices (e.g., banks, dividends, collateral, and large index),
7. Futures and options on MSCI indices for developed and emerging markets, and
8. Equity index futures and options on ESG underlyings.⁴⁹

At the end of 2022, cryptocurrency derivatives were expected soon.⁵⁰

Liquid trading in euro-denominated, equity-index, and Swiss franc-based derivatives takes place alongside markets for MSCI indices (often denominated in U.S. dollars), volatility, and dividends. Eurex also has a broad offering of single equity products, alternative asset classes, commodities, and debt securities.

Eurex was founded in 1998 as a partnership between Deutsche Börse AG (DTB) and the SIX Swiss Exchange. At that time, electronic trading systems were growing relative to the traditional open outcry systems. Eurex was one of the first exchanges to offer fully electronic trading to its users. Today, it is Europe's largest futures and options market, primarily offering European-based derivatives.

Eurex is located in Eschborn, Germany (near Frankfurt), servicing dealers from more than 700 locations worldwide, with most activity online. It also provides clearing and contract settlements. The clearing is done through Eurex Clearing, which serves about 200 members in 19 countries.

In 2020 and 2021, the number of derivative products traded on Eurex equaled approximately 1.9 billion and 1.7 billion, respectively, falling by roughly 8%.⁵¹ European equity index derivatives accounted for more than 56% and 47% of the market in 2020 and 2021, respectively.⁵² The notional outstanding volume of OTC Clearing was approximately EUR 16.6 trillion

⁴⁹ Eurex, Markets, Homepage, <https://www.eurex.com/ex-en/> (Accessed on August 27, 2022).

⁵⁰ Ibid.

⁵¹ Eurex, Full Year and December 2021 Figures at Eurex, <https://www.eurex.com/ex-en/find/news/Full-year-and-December-2021-figures-at-Eurex--2902904#:-:text=OTC%20Clearing%20at%20Eurex%20continued,EUR%20%E2%80%93%20over%20the%20full%20year> (Accessed on August 28, 2021).

⁵² Ibid.

in 2020 and EUR 20.1 trillion in 2021, an increase of more than 20%, with interest rate swaps accounting for approximately 50%.⁵³ Between these years, average daily cleared volumes grew from EUR 122 billion to EUR 133 billion, an increase of 9%.⁵⁴

Eurex Clearing

Eurex Clearing is incorporated in Germany as a licensed credit institution under the supervision of the BaFin, Germany's Federal Financial Supervisory Authority, which acts under the nation's *Banking Act*.⁵⁵ Eurex Clearing is the central counterparty (CCP) for all exchange-traded and OTC-traded transactions executed on Eurex. It is also an authorized clearing house under the European Market Infrastructure Regulation (EMIR), and in February 2016, the U.S. Commodity Futures Trading Commission (CFTC) granted Eurex clearing status as a Derivatives Clearing Organization for swaps related to entities located in the United States.⁵⁶

Eurex Clearing handles a broad range of listed and OTC transactions, including equities, bonds, energy transactions, and secured funding. It serves about 200 members in 19 countries, manages a collateral pool of around EUR 49 billion, and clears monthly trades worth approximately EUR 11 trillion. Eurex Clearing offers customers fully automated, straight-through, post-trade services specially designed for derivatives, cash equities, repo, and fixed-income transactions, including clearing bilaterally agreed on/off-exchange transactions.

As a CCP, Eurex Clearing stands between derivative buyers and sellers, providing customers anonymity in trading and settlement. It also provides security because the entire exchange would need to fail for their contracts to become worthless. Eurex Clearing increases efficiency by giving buyers direct access to derivatives and security financing transactions. Combining and netting the transactions of a large and diverse set of participants substantially reduces single counterparty and systemic risks, using cross-margining to conserve collateral. It also concentrates risk by pooling everything under the roof of a single institution. The consequences of such an institution's failure would be enormous.

⁵³ Ibid.

⁵⁴ Ibid.

⁵⁵ BaFin is the abbreviation for Bundesanstalt für Finanzdienstleistungsaufsicht. Federal Financial Supervisory Authority. Germany's Banking Act is the Gesetz für das Kreditwesen.

⁵⁶ Eurex, About Eurex Clearing, <https://www.eurex.com/ec-en/find/about-us/company-profile/About-Eurex-Clearing-26986> (Accessed on August 24, 2022).

Eurex Repo⁵⁷

Eurex Repo GmbH is a multilateral trading facility (MTF) regulated by the *Markets in Financial Instruments Directive 2004/39/EC (MiFID)* and supervised by the BaFin. It offers an electronic platform for trading Swiss-franc and Euro-denominated repurchase agreements (i.e., repos) among banks and the GC Pooling market,⁵⁸ which has become the European benchmark for standardized secured funding with central clearing.⁵⁹ Eurex Repo offers customers full automation from clearing to settlement.

The underlyings for Euro-denominated repos are standardized baskets for the general collateral (GC) market,⁶⁰ which include the German GC, German Jumbo, and the German KfW/Länder baskets. Trades can also be conducted with Austrian government bonds and European Investment Bank treasury bonds.

German GC Basket includes German government bonds and bonds issued by the Treuhandanstalt, the German privatization agency. Included in the German Jumbo Basket are Jumbo Mortgage bonds (Pfandbriefe) issued by German companies. Finally, the KfW/Länder Basket is based on bonds issued by KfW and German federal states.⁶¹

Conclusion

Derivative markets for Swiss-franc-denominated products include (1) OTC options, forwards, and swaps, (2) exchange-traded derivatives, and (3) structured products. Used properly, they are cost-effective ways to hedge, enhance

⁵⁷ A repurchase agreement (repo) is a form of secured short-term borrowing in which a dealer sells securities to investors and simultaneously agrees to repurchase them (often overnight) at a higher price. The percentage price difference is the implicit interest rate.

⁵⁸ The GC Pooling Market is explained later in this chapter.

⁵⁹ Eurex's GC Pooling is a cash-driven collateral market of Eurex Repo. Developed by Eurex Repo, Eurex Clearing, and Clearstream Banking, it began operations in March 2005. GC Pooling offers an electronic platform for secured money market trading, anonymously funding standardized Euro-, Swiss franc-, British pound-, and U.S. dollar-denominated baskets of standardized fixed income and equity collateral, and baskets of ECB-eligible securities, which can be reused directly to access ECB credit facilities.

⁶⁰ "General collateral" refers to a basket of security issues traded on the repo market at the same rate or similar rates as repo transactions. The interest on these baskets is called the "GC repo rate."

⁶¹ KfW is an abbreviation for Kreditanstalt für Wiederaufbau (i.e., Reconstruction Credit Institute), which was formed in 1948 as part of the German post-World War II reconstruction effort. Today, the KfW banking group is a Frankfurt-based development bank that is 80% owned by the Federal Republic of Germany and 20% owned by the various German Länder (i.e., States). Bonds issued by the KfW banking group are federally guaranteed, lowering their credit risk and reducing the interest rate needed to sell these bonds.

yields, speculate, and gain access to products that might not otherwise be accessible. As long as markets are liquid, efficient, and fair, derivatives can quickly transfer unwanted risks. Just as life-saving medicines can be used moderately and wisely, derivatives can too. But derivative overdoses involving huge casino-like gambles are real and can devastate users and others around them.

Before going into a title fight, heavyweight boxing champion Mike Tyson once said, “Everyone has a plan until they get punched in the mouth.” For a nation’s financial system, this punch in the mouth comes when good intentions to let markets flourish are met with destructive and misused derivative activity. The solar-plexus blow comes when customers use them to financial ruin, and banks generate in-house research and derivative products that have no relation to companies’ value creation. In these cases, their purpose is nothing more than to increase bank profits. Extreme uses of derivatives can turn positive-sum games into zero-sum or negative-sum ones.

In the future, Switzerland’s competitiveness and profitability will depend on its ability to create innovative, cutting-edge derivatives. Earning a stellar legacy, though, is more nuanced and important. For that, the Swiss financial community must find ways to empower these financial instruments for productive uses and, at the same time, harness their harmful, negative-sum social and economic effects.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter’s Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.





11

Financial Digitalization, FinTech, and the Collaborative Economy

Introduction

Throughout the past decade, the financial services industry and the economy have experienced a boost in digitalization. The term “digitalization” refers to converting information and processes into digital format and using digital technologies for all kinds of business applications. This affects how companies interact with clients, how they organize production, and on which products and services they should focus. Due to digitalization, new avenues of designing business processes open up, as not all elements contributing to a value proposition for a client are necessarily provided by just one single company. Instead, it may be more constructive to break up traditional value chains and distribute the tasks among those market players that provide the service and product modules more efficiently or in higher quality.

Hence, digitalization does not stop with purely converting conventional processes into a digital format. Instead, what results is an ongoing digital transformation of business models wherever new technologies facilitate transactions and tear down existing boundaries. The COVID-19 pandemic has further accelerated this transition because it forced the substitution of physical interactions with digital ones. The breaking up of value chains can and should lead to a stronger focus on what a firm can do best, such as client relationship management, procurement, product innovation, process management, advancing the latest technology, providing reliable technical infrastructure, or data management and analytics.

Therefore, the question is not whether financial digitalization will impact the demand and supply of financial services but rather how fundamental the

ramifications will be and in which time span. Data analytics, new technologies, and new market entrants will have their share in breaking up established value chains and will force financial services providers to focus on those activities in which they have a competitive advantage. Service providers bringing in the technological competencies for financial services, such as FinTechs, InsurTechs, and RegTechs will play critical roles in this process, no less than a regulation enhancing framework conditions for innovative companies and transactions.

Financial Digitalization

When we look at the digital transformation of financial markets and financial institutions, the levels and speeds appear quite heterogeneous worldwide. While in some countries, financial services are already significantly disintermediated, banks and insurance companies still play important roles in the microstructure of their markets. Nevertheless, to cope with the emerging challenges, several banks, for instance, have been setting up new digital sub-companies under the same roof. They act as in-house competitors in some areas. But their main characteristic is that they have a very specific focus on providing additional banking services or multi-banking facilities.

A key driving force of the transformation in the finance sector is a new competition by market entrants, such as technology firms and those controlling, cultivating, and developing the customer interface, resulting in complete coverage of clients' needs. While banks and insurance companies in Switzerland are advanced in digitizing processes within their current business models, there is a backlog regarding the digital transformation of their business models.

According to a study on this topic,¹ digitalization will be just one of the drivers of business model innovations in the near future. Other factors include demographic changes, globalization, regulations, sustainability, and specific local features. For the banking industry, the likely key drivers will be automation and robotics, blockchain technology, new competitors, such as FinTech firms, digital investing, the Internet penetration rate, biometrics, gamification, and millennials. The latter will significantly impact social trends

¹ Deloitte (2015): *Swiss Banking Business Models of the future – Embarking to New Horizons.*, <https://www2.deloitte.com/ch/en/pages/financial-services/articles/swiss-banking-business-models-of-the-future.html> (Accessed on November 1, 2020).

and moral concepts, such as sharing physical assets, sustainability, and maintaining a healthy work-life balance. Digitalization and its potential ability to satisfy client and societal needs are the drivers of these developments.

Artificial intelligence (AI) and big data should play a key role in developing customer-oriented services, building risk management systems, satisfying legal requirements, complying with rules, and conducting product and contract management. In banking, digital technologies are used for platform-driven architectures, data storage systems (“data lakes”) and big data platforms, AI and machine learning, as well as for microservices and serverless computing.² Platforms are key elements as they create the basis for connecting further applications, also from third-party providers (TPPs). Decentralized computing goes along with cloud-based and flexible architectures for applications.

At the same time, clients have gotten used to new technologies, the omnipresence and immediacy of information, and the convenience of using a large spectrum of smartphone applications. The COVID-19 pandemic has contributed to a massive advance in the willingness to utilize and implement new technologies. Amplified by education and increased financial literacy, the demand for digital offerings has grown substantially. Today, clients want to decide for themselves when and how to access financial services. At the same time, these services should be simple and transparent. The digital channel helps provide access to a broad set of diverse and customizable products and services, for example, in financing, investments, insurance, health, and retirement provision. Transactional services can further be combined with advisory or knowledge-intensive services tailored to the clients’ needs. The digital channel also facilitates self-services for clients.

From Open Finance to Embedded Finance

On the institutional side, the answer to these upcoming challenges during the past decade was “*open banking*” or “*open finance*,” in more general terms. Open banking describes a model where banks and other financial institutions set up their technological infrastructure in ways that third-party providers and developers can connect their applications to the system and facilitate an automated exchange of data. The concept of open finance applies the same idea to a broader range of financial services. The Swiss Bankers Association’s definition of open banking further specifies that this exchange of data has to be

² See Deloitte (2019): *Banking and Capital Markets Outlook*, <https://www2.deloitte.com/tw/en/pages/financial-services/articles/bank-capital-outlook.html> (Accessed on November 1, 2020).

(a) based on secure, standardized interfaces, called Application Programming Interfaces (APIs), (b) secure to guarantee data confidentiality, and (c) only with reliable third-parties meeting specific criteria.³

Meanwhile, financial services providers have repositioned or are converting their services architecture to connect and integrate complementary services and products from other firms and industries and expand into new business models. At the same time, the transaction infrastructure is increasingly capable of outsourcing processes traditionally managed in-house. This has two consequences: With a service architecture, applications so far running separately can be integrated and expand the breadth of the service offering. At the same time, it forces the providers to abandon activities that are not core anymore. This technological shift has spurred business models like “*banking as a service*” (BaaS) or the usage of “*software as a service*” (SaaS).⁴

Building on the logic of open banking, the focus nowadays has shifted toward integrating financial services applications from third-party providers into the product offering of non-banks. This integration is referred to as “*embedded finance*.”⁵ For instance, clients of companies in non-financial sectors might need financial assistance or products, such as car financing or insurance, whereas clients of banks or insurance companies may require help, for example, in health care, relocation, and tax consulting. In either case, combining products and services improves convenience and enhances the customer’s experience.

Banks and insurance companies sometimes try to make these additional services accessible through an “*ecosystem*.” In a business ecosystem, the different organizations cooperate, compete, and co-evolve around new products and innovations.⁶ Business ecosystems are typically designed to satisfy specific client needs, such as living or health. An ecosystem resembles a marketplace, where many providers offer complementary services. This happens as a one-stop shop, consequently aligned with the client’s needs and not coming from the product offering. Tech firms, such as Google, Facebook, and Tencent, continuously demonstrate the importance of service integration (of eCommerce, communication, and financial services) and a seamless convenience, i.e., of what it takes to control the client interface.

³ Swiss Bankers Association, <https://www.swissbanking.ch/en/topics/digitalisation-innovation-and-cyber-security/open-banking> (Accessed on July 20, 2022).

⁴ In a BaaS model, banks provide their services as part of a third-party product. In a SaaS model, the software is licensed to a financial services provider.

⁵ For a more comprehensive definition, see Chapter 3.

⁶ The Term “Business Ecosystem” has been defined by James F. Moore, “Predators and Prey: A New Ecology of Competition”, *Harvard Business Review*, May–June 1993, <https://hbr.org/1993/05/predators-and-prey-a-new-ecology-of-competition> (Accessed on August 16, 2022).

For most ecosystems, the digitalization of the client interface is a crucial precondition. With it, banking and insurance services ultimately become accessible anytime and anywhere. Book entries happen in real-time as legacy systems get gradually replaced. In an increasingly decentralized finance landscape, blockchain and cloud technologies are another basic requirement for guaranteeing a ubiquitous and comprehensive service offering. Data analytics will be indispensable for client advisory. It is therefore essential that financial service providers start collecting, structuring, and analyzing data from their current business processes to use this data asset in the future.

Collaborative Business Models in Banking

In the current transformation, market players focus on what they perceive to be their core competitive advantage. This can be *client relationship management* or *products offering* the highest convenience or the lowest price. Some firms focus their business model on *process management* (e.g., claims settlement in the insurance sector, brokerage, payment, tokenization of assets), others on providing *technology* (e.g., security systems, access to products and services of different providers, software as a service), *infrastructure* (e.g., banking as a service (BaaS), or data storage), and *data management and analytics*.

The latter includes the usage of AI and big data. AI has many definitions. Essentially, it is an automation technology able to learn, detect interrelations, and make decisions. The term “big” data often refers to highly complex data sets, but it may also include aggregating complementary data from different sources. Ideally, processes are designed such that data is generated and structured automatically. Generating, structuring, and analyzing data are keys to providing customized services to the client and institutional functions, such as risk management and compliance.

Figure 11.1 presents seven possible business model archetypes for the banking sector.⁷ In this categorization, banks can either strategically position themselves about customer focus or value chain focus. The first dimension captures the breadth or specificity of the bank’s offering to its clients. The value chain focus refers to the bank’s resources and capabilities concerning its positioning either at the customer end or at the back end. Applying this

⁷ See M. Buermeyer, W. Weinrich, K. Heuschroëck, O. Lehner, K. Holtkamp: *Retail banking business models—defining the future: Challenges and opportunities of new business models*, October 19, 2019, BankingHub by zeb, <https://www.bankinghub.eu/innovation-digital/retail-banking-business-models> (Accessed on July 17, 2022). The definitions in this section of the chapter are also based on this contribution.

typology to the Swiss banking landscape shows that some business models have existed for decades (such as trusted advisor and utility bank). In contrast, other business models have not evolved until some years ago (such as focused digital players, ecosystems, and BaaS).

Three of these models have a back-end and hence a business-to-business (B2B) focus:

- **Banking as a Service (BaaS)** providers serve the industry with basic technological infrastructures, such as core banking systems (e.g., *Avaloq*, *finnova*), platform solutions for specific applications (e.g., *Crealogix*, *ti&m*), and outsourcing facilities (e.g., *InCore Bank*, *SIX Group*).
- **Utility banks** offer specific service components, which financial services providers can then integrate into the customer journey. Such components comprise payment or card services (e.g., *Viseca*, *Swisscard AECS*), brokerage (e.g., *SAXO Bank*), and storage of tokenized assets (e.g., *Sygnum Bank*). A utility bank’s services may also include the provision of a platform for generic transactions.
- **Product specialists** focus on providing financial products and services to the industry, such as funds, structured products, and information services. Some products may be sold to a selected clientele beyond a pure B2B focus.

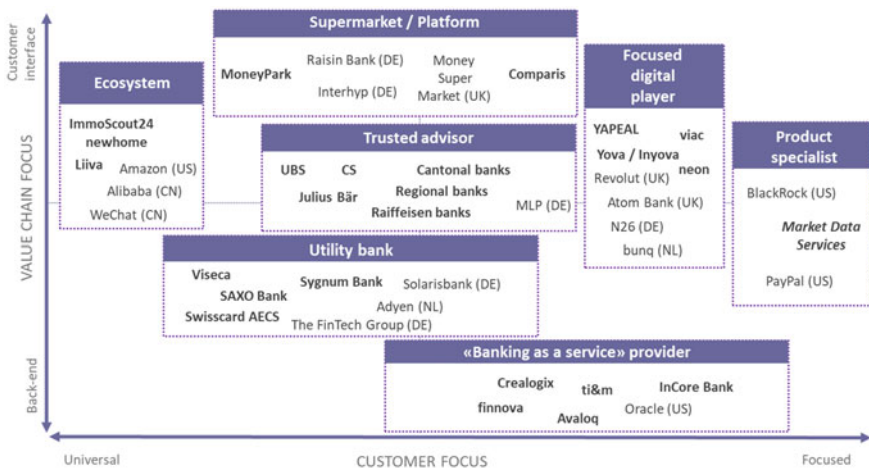


Fig. 11.1 Business models in banking (Note Swiss companies (marked in bold) are allocated to the business models by the authors. Source Authors’ representation based on the concept adopted from M. Buermeyer, W. Weinrich, K. Heuschroch, O. Lehner, K. Holtkamp: *Retail banking business models—defining the future: Challenges and opportunities of new business models*, October 19, 2019, BankingHub by zeb, <https://www.bankinghub.eu/innovation-digital/retail-banking-business-models> [Accessed on July 17, 2022])

Four of the models are customer-centric and apply to the business-to-customer (B2C) market:

- **Focused Digital Players** offer only a narrow choice of products. Their value proposition is high convenience for clients, competitive pricing, and an appealing design on a 100% digital channel. Convenience contains speed, availability on demand, and self-service options. Examples include digital banking solutions (e.g., *YAPEAL*, *neon*), digital retirement provision solutions (i.e., “3a” solutions) such as *viac*, and specific investment themes. For instance, *Yova’s Inyova* app makes it easy to manage a portfolio based on sustainability criteria. Several banks in the retail segment follow similar approaches and offer digital tools under the same roof but with a different brand (e.g., “frankly.” by *Zürcher Kantonalbank*, “Zak” by *Bank Cler*).
- **Supermarkets/platforms** aggregate products on a platform, while it is the client’s task to select the appropriate product combinations. This approach is suitable for relatively homogenous products that are, to some extent, exchangeable among the providing institutions. For example, *Comparis* started in 1996, providing comparisons of health insurance tariffs in Switzerland, and since 2012, *MoneyPark* has listed mortgage offerings from several banks, among which clients can choose.
- **Trusted advisors** offer access to various services along the customer journey. The customer journey refers to the sequence of touchpoints a customer has with a product or service provider before the purchase. This category includes most banks and insurance companies (e.g., *UBS*, *Julius Bär*, cantonal banks, regional banks, *Raiffeisen* banks, *Zurich Insurance*, and *Swiss Life*).
- **Ecosystems** give access to many financial service providers offering complementary services, hereby maximizing customer value. For example, *iptiQ*, a subsidiary of Swiss Re Group, provides an end-to-end digital insurance platform, creating an ecosystem comprising over 50 partner firms.⁸ Most ecosystems employ so-called platform-as-a-service offerings.

On a global scale, digitalization has tightened competition among established financial services providers and forced them to transform their business models digitally. This has led to an emerging number of platform-based business models that foster cooperation and innovation and better client services. At the same time, new players increasingly push into finance, such as big tech firms like *Google*, *Apple*, *Amazon*, *Facebook*, *Tencent*, and *Baidu*.

⁸ For further information, see <https://www.ipitiq.com/> and <https://www.swissre.com/our-business/ipitiq.html>.

Likely, these dynamics in digitalization will lead to a commoditization of basic financial services. It further speeds up both the merging of some financial players and the withdrawal of others from markets or selected production stages that were part of their value chains. At the same time, this transformation spurs stronger customization of products and services and hence a stronger value proposition to the client. For financial service providers, supplemental benefits offered as part of an ecosystem become more important.

The strategic positioning of incumbent banks in an open banking setting can vary depending on the specific market and competitive position. The Swiss Banking Association has identified four archetypes of strategic positioning: (1) the integrated role, (2) the supplier role, (3) the orchestrator role, and (4) the aggregator role.⁹ These base models help the banks define the key roles they can play in an open banking ecosystem.

On the downside, this transformation process may increase the volatility of income sources and lower margins because of higher competition. In addition, digital business ecosystems also bring a host of challenges. Examples include IT security, customer attribution, accountability, data ownership, the usage of AI, and a strong dependence on start-up companies. Moreover, participating players (banks, insurance companies, neobanks, InsurTechs, SaaS providers, etc.) typically follow different strategies that are not always easy to harmonize. Table 11.1 provides a list of cooperative efforts by Swiss companies in 2022.

FinTech

To speed up the business transformation process, financial intermediaries selectively but intensively cooperate with companies from the technology sector that are providing new tools and innovations to banks and other financial service companies. These innovative financial technology firms are called “FinTechs,” and financial technology firms that cooperate with insurance companies are called “InsurTechs.” For financial services players, regulatory technology (“RegTech”) firms are becoming increasingly important for automating legal procedures and compliance tasks.

⁹ Swiss Bankers Association, *Open Banking—An Overview for the Swiss Financial Centre*, https://www.swissbanking.ch/_Resources/Persistent/8/8/2/8/88286724aa4fdc3dd8bb8ecd9b9c0d7af659a803/SBA_Overview_OpenBanking_en.pdf; <https://www.swissbanking.ch/en/topics/digitalisation-innovation-and-cyber-security/open-banking> (Both accessed on July 20, 2022).

Table 11.1 Cooperative efforts in banking and insurance in 2022

Name	Initiators and Partners	Link	Purpose
Ecosystems and platforms			
Liiva	Raiffeisen, Mobiliar	www.liiva.ch/	Ecosystem for residential property owners
Klara.ch	Credit Suisse, Valiant, PostFinance, Mobiliar, Creditreform, Glarner, Kantonalbank, BDO, Cembra, ...	www.klara.ch/ecosystem	Ecosystem for SME administration
Mobiliar ecosystem	Bexio, aroov, Plan your move, Scout24, Credit Exchange, SwissCaution, Buildigo, Liiva	www.mobiliar.ch/	Ecosystem around housing Ecosystem around SMEs
autosense	amag, M-Charge, Zurich, Swisscom, Migrol, easypark, simpego, BKW, ...	www.autosense.ch/	Ecosystem around driving
bLink	SIX	https://www.six-group.com/en/products-services/banking-services/blink.html	Open banking platform
Cooperations			
SDX	Aktionariat		Issuance of digital shares
SIX	Custodigit		Gateway for customizing crypto assets
Baloise	Houzy		Expansion into new business areas
smile (Helvetia)	neon		Mobile bancassurance solutions
Helvetia	flatfox		Digital tenancy management

(continued)

Table 11.1 (continued)

Name	Initiators and Partners	Link	Purpose
Helvetia	MoneyPark		Channel for mortgage offering
Digital initiatives			
UBS	key4	key4.ch/en/	Mortgage platform
CS	CSX	csx.credit-suisse.com/	Digital banking
Cler	ZAK	www.cler.ch/de/info/zak	Digital banking
ZKB	frankly.	www.frankly.ch/en/home.html	Retirement solution with pillar 3a

SME ≡ small and medium-sized enterprise

Source: Authors' representation

The interplay of FinTechs and incumbent financial services providers has evolved over time. In the early years after 2010, FinTech companies were often seen as challengers to established market players, competing for the same client base. The focus was not on offering a broad spectrum of products but on improving convenience, increasing speed, and advancing user experience to the next level. Due to lean structures, a digital-only channel, and lack of regulation, pricing was highly competitive. Over time, however, many FinTechs have evolved with strong competitive advantages in technology. These FinTechs now partner up with banks and help them enhance and modernize their bank processes and strengthen customer solutions instead of product solutions.

Business Areas of FinTechs

Two ways to classify FinTech companies are their key product areas and technological approaches. The annual *IFZ Fintech Study* identified four key product areas where FinTechs are predominantly active¹⁰: (1) Payment, (2) Deposit and Lending, (3) Investment Management, and (4) Banking Infrastructure. With regard to their technological approach and irrespective of the business segment, FinTechs were categorized into (a) Process Digitalization, Automation, and Robotics, (b) Analytics, Big Data, and AI, (c)

¹⁰ Hochschule Luzern: "IFZ Fintech Study 2022", <https://craft.finnova.com/assets/downloads/IFZ-Fintech-Study-2022.pdf> (Accessed on July 18, 2022).

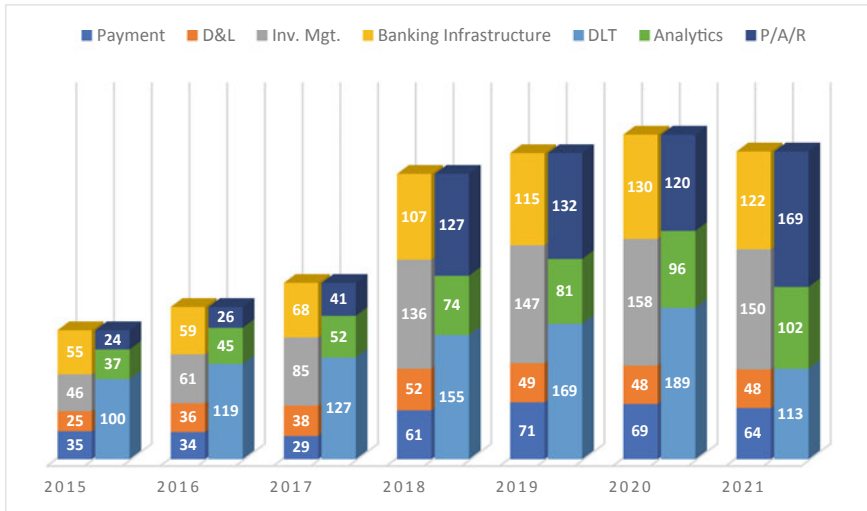


Fig. 11.2 Number of FinTech companies in Switzerland (Note For each year, the left-side bars depict the “Product Areas” and the right-side bars depict the “Technology Areas.” The abbreviations for “Product Areas” are: Payment = Payment, D&L = Deposit & Lending, Inv. Mgt. = Investment Management, and Banking Infrastructure = Banking Infrastructure. The abbreviations for “Technology Areas” are: DLT = Distributed Ledger Technology, Analytics = Analytics, Big Data, AI, P/A/R = Process Digitalization, Automation, and Robotics. Source Authors’ representation based on data obtained from “IFZ Fintech Study 2022”, Hochschule Luzern, <https://craft.finnova.com/assets/downloads/IFZ-FinTech-Study-2022.pdf> [Accessed on July 18, 2022])

Distributed Ledger Technology, and (d) Quantum Computing. The resulting matrix is updated annually by tracing the number of companies in these fields. Figure 11.2 illustrates the number of Swiss FinTech companies subdivided into their key product areas (left-side bars) and their core technologies (right-side bars).¹¹

Table 11.2 shows the percentage of firms in each product area and technology in 2019 and 2021. In 2021, almost 40% of all FinTech companies had their primary business in “Investment Management” and about one-third in “Banking Infrastructure.” By contrast, in 2021, the markets for “Payment” services (16.6%) and “Deposit & Lending” support (12.6%) were concentrated on fewer firms. Regarding technology, 44% of all FinTech companies in Switzerland focused on “Process Digitalization, Automation, and Robotics,” and 26.7% focused on analytics, big data, and AI. Almost

¹¹ Between 2015 and 2021, the maturity level of this industry increased, evidenced by the number of full-time equivalents (FTEs) and the proportion of licensing fees. See Hochschule Luzern: “IFZ Fintech Study 2022”, <https://craft.finnova.com/assets/downloads/IFZ-FinTech-Study-2022.pdf> (Accessed on July 18, 2022).

Table 11.2 Business Models of Swiss FinTech Companies (2021 vs. 2019)

		Product Area							
		Payment		Deposit & Lending		Investment Management		Banking Infrastructure	
		2019	2021	2019	2021	2019	2021	2019	2021
Technology Area	Process Digitization, Automatization, Robotics	10.2%	9.6%	10.7%	8.1%	14.1%	14.6%	9.2%	11.7%
	Analytics, Big Data, Artificial Intelligence	0.5%	2.1%	0.8%	1.6%	14.4%	15.4%	5.5%	7.6%
	Distributed Ledger Technology	7.9%	4.9%	1.3%	2.9%	9.9%	9.1%	15.4%	12.5%

Note The percentage figures represent the number of FinTech firms in the respective field as a fraction of all FinTech firms in the sample. The total universe of FinTech firms in 2021 (2019) was 384 (382). Up and down arrows indicate major shifts. Sideward arrows indicate no or small shifts of less than $\pm 10\%$. *Source* Authors' calculation based on data from "IFZ Fintech Study 2022", Hochschule Luzern, <https://craft.finnova.com/assets/downloads/IFZ-FinTech-Study-2022.pdf> (for 2021 figures), and Thomas Ankenbrand, Andreas Dietrich, Denis Bieri, Nicola Illi: "Goodbye 'Fin'? Hello 'Tech'!", IFZ Retail Banking Blog, March 4, 2020, <https://blog.hslu.ch/retailbanking/2020/03/04/goodbye-fin-hello-tech/> (for 2019 figures) (Accessed on July 18, 2022)

30% of FinTechs drew upon their Distributed Ledger Technology (DLT) competencies. Driven by innovative FinTech entrepreneurs, universities, and a conducive legal framework, Switzerland has developed as a hub of Distributed Ledger Technology early on.

Compared to the growth phase from 2015 to 2018, the number of FinTech firms in Switzerland stayed almost at the same level between 2018 and 2021.¹² Despite this seeming stability, the average characteristics of FinTechs changed substantially over time. While investment management has evolved into the dominant business area since 2015, deposit and lending services have lost some importance in relative terms. Furthermore, in 2015 and 2016, 62% of the FinTech firms built their business model on DLT, and this segment fell below 30% by 2021. At the same time, looking at Swiss DLT FinTechs only partially mirrors the effective importance and relevance of DLT. In particular, large financial institutions also collaborate with international DLT specialists.

Table 11.3 compares the specialization of Swiss FinTechs with their global peers. It shows that the product area of "Investment Management" was significantly more critical for Swiss FinTech firms (39.1% for Switzerland versus 16.0% worldwide). In comparison, the fields of Banking Infrastructure and Payment were more prominent in the case of FinTech firms globally (31.8%

¹² Calculations in this paragraph are based on data from "IFZ Fintech Study 2022", Hochschule Luzern, <https://craft.finnova.com/assets/downloads/IFZ-FinTech-Study-2022.pdf>.

Table 11.3 Business Models of Swiss and Global FinTech Companies (2021)

		Product Area							
		Payment		Deposit & Lending		Investment Management		Banking Infrastructure	
		CH	Global	CH	Global	CH	Global	CH	Global
Technology Area	Process Digitization, Automatization, Robotics	9.6%	20.4%	8.1%	11.8%	14.6%	9.1%	11.7%	27.9%
	Analytics, Big Data, Artificial Intelligence	2.1%	1.3%	1.6%	2.7%	15.4%	4.0%	7.6%	8.3%
	Distributed Ledger Technology	4.9%	1.6%	2.9%	0.5%	9.1%	2.9%	12.5%	9.4%

Note The percentage figures represent the number of FinTech firms in the respective field as a fraction of all FinTech firms in the sample. Left-side figures in each box are for Swiss (CH) FinTech firms; right-side figures in each box are for global FinTech firms. The total universe of FinTech firms in Switzerland was 384 and 373 in the global sample. Larger numbers are highlighted bold. *Source* Authors' calculation based on data from "IFZ Fintech Study 2022", Hochschule Luzern, <https://craft.finnova.com/assets/downloads/IFZ-FinTech-Study-2022.pdf> (Accessed on July 18, 2022)

in Switzerland versus 45.6% worldwide for Banking Infrastructure, 16.6% in Switzerland versus 23.3% globally for Payment). Concerning the technology base, almost 70% of FinTechs globally, as opposed to only 44% in Switzerland, focus on Process Digitalization, Automation, and Robotics. Nearly 30% of Swiss FinTech firms exhibit skills in DLT compared to only 14.4% of FinTech firms worldwide.

Distributed Ledger Technology (DLT) and Decentralized Finance (DeFi)

Although the number of Swiss FinTech firms with a technology focus on DLT has fallen over time, blockchain-based activities have become more relevant and mature in the past years, in terms of both use cases and the clarity of the regulatory environment. Blockchain allows for distributed ledgers where no central counterparties, intermediaries, or registries are needed. Applications in finance using Distributed Ledger Technology (DLT) are therefore also referred to as Decentralized Finance (DeFi) and comprise blockchain-based business models with cryptocurrencies (such as Bitcoin, Ethereum, Ripple, Litecoin, and Cardano), smart contract solutions, and tokenized assets (or crypto assets). In addition, open blockchain technology fosters further innovation and assures the compatibility of solutions.

FinTechs and the Digital Transformation of the Finance Sector

In general, FinTech firms positively contribute to the development of the financial services industry by pushing banks to become more innovative and customer value oriented. FinTechs typically are smaller, faster, leaner, and less regulated than banks. This impact is not to be underestimated, as the focus of banks' digitalization efforts has primarily been on automating and enhancing processes within existing business lines. These projects are referred to as "run-the-bank" projects. In contrast, so-called "change-the-bank" projects are more profound and exhausting for organizations and tend to happen only when perceived as inevitable. Automation, cloud solutions, tokenization, biometrics, and AI are some of the key technologies relevant in finance.

Swiss Fintech Innovations (SFTI) supports innovation and collaboration of financial institutes in Switzerland and FinTechs.¹³ This is a joint initiative of some of the main players in Swiss banking and insurance. One key topic is the analysis and discussion of collaboration models, such as outsourcing, platform businesses, joint offerings of a third-party provider with a bank, and emerging legal challenges.¹⁴ On a broader scale, *digitalswitzerland* supports innovation in the field of digital solutions, such as cybersecurity.¹⁵

One word of caution: With FinTech firms getting more powerful and influential, they might become systemically relevant, particularly when software solutions, product components, security systems, cloud infrastructures, and critical data and information are widely used by the banking sector. This is the case for FinTech companies active in the B2B space and those interacting with an investment clientele. As a result, they should become more regulated in the future. Otherwise, Switzerland's financial stability might be jeopardized. This is why regulation of Switzerland's DLT activities has increased (see paragraph below on Swiss DLT regulation).

¹³ See Swiss Fintech Innovations, *Collaboration Models*, <https://swissfintechinnovations.ch/projects/collaboration-models/> (Accessed on July 20, 2022).

¹⁴ See Swiss Fintech Innovations, <https://swissfintechinnovations.ch/projects/collaboration-models/> (Accessed on July 20, 2022).

¹⁵ See digitalswitzerland, <https://digitalswitzerland.com/> (Accessed on July 20, 2022).

InsurTechs

Technological innovation in digital solutions for financial services has emerged chiefly in the context of FinTech companies. FinTech firms that have partnerships primarily with insurance companies are called InsurTechs.

The *IFZ InsurTech* study identified 50 InsurTech companies in Switzerland and 497 companies in the rest of Europe.¹⁶ Although there is no universally applicable definition of InsurTech, the authors of the report identified five key product areas where InsurTechs are potentially and predominantly active: (1) Marketing and Distribution; (2) Product Development, Pricing, and Underwriting; (3) Claims and Customer Service; (4) Asset Management; and (5) Infrastructure. With regard to their technological approach and irrespective of the business segment, InsurTechs have their core skills in (a) Process Digitalization, Automation, Robotics, (b) Analytics and AI, and (c) the Internet of Things.

Table 11.4 shows the percentages of firms in each product area and technology. Over 40 (30)% of all Swiss (European) InsurTech companies have their principal business in Marketing and Distribution, about 30 (42)% in Infrastructure, and 18 (15)% in Claims and Customer Service. Product Development, Pricing, and Underwriting is of minor importance as a product area, and Asset Management is practically irrelevant. In terms of technology, more than 50% of all InsurTech companies in Switzerland focus on Process Digitalization, Automation, and Robotics, and more than one-third on Analytics and AI. While DLT skills are relevant in 30% of all FinTechs, only 6% of InsurTechs use this technology. Marketing and Distribution on the one hand and Process Digitalization and Automation on the other seem to be more relevant in the Swiss InsurTech landscape compared to the other European countries.

Furthermore, on a per capita basis and across Europe, the highest densities of InsurTech companies have been in Liechtenstein, Luxembourg, and Switzerland. While the number of newly founded InsurTech companies was growing steadily from 2010 to 2017, the trend has been declining since then.¹⁷

¹⁶ See Thomas Ankenbrand, Moreno Frigg, Florian Schreiber: IFZ InsurTech Report 2021, <https://hub.hslu.ch/insuranceinsights/ifz-insurtech-report-2021/> (Accessed on July 21, 2022).

¹⁷ See Thomas Ankenbrand, Moreno Frigg, Florian Schreiber: IFZ InsurTech Report 2021, <https://hub.hslu.ch/insuranceinsights/ifz-insurtech-report-2021/> (Accessed on July 21, 2022).

Table 11.4 Business Models of Swiss and European InsurTech Companies (2021)

		Product Area									
		Marketing & Distribution		Product Development, Pricing, Underwriting		Claims & Customer Service		Asset Management		Infrastructure	
		CH	Europe	CH	Europe	CH	Europe	CH	Europe	CH	Europe
Technology Area	Process Digitization, Automatization, Robotics	26.0%	24.9%	2.0%	3.4%	10.0%	5.2%	0.0%	0.0%	16.0%	29.4%
	Analytics, Artificial Intelligence	12.0%	4.0%	6.0%	7.8%	8.0%	8.7%	0.0%	0.0%	8.0%	9.7%
	Internet of Things	4.0%	0.8%	2.0%	1.4%	0.0%	0.8%	0.0%	0.0%	0.0%	1.0%
	Distributed Ledger Technology	0.0%	0.0%	0.0%	0.4%	0.0%	0.2%	0.0%	0.2%	6.0%	2.0%

Note The percentage figures represent the number of InsurTech firms in the respective field as a fraction of all InsurTech firms in the sample. Left-side figures in each box are for Swiss InsurTech firms; right-side figures in each box are for European InsurTech firms. The total universe of InsurTech firms in Switzerland (Europe) was 50 (497). Larger numbers are highlighted bold. *Source* Authors' calculation based on data from "IFZ InsurTech Study 2021", Hochschule Luzern, <https://hub.hslu.ch/insurancinsights/ifz-insurtech-report-2021/> (Accessed on July 21, 2022)

SWISS Distributed Ledger Technology Regulation

The private sector and regulatory bodies made efforts to clear the way for beneficial framework conditions for new technologies in the financial market. On August 26, 2019, FINMA assigned the first banking licenses for two crypto banks, *Seba Bank* and *Sygnum*.¹⁸

On September 25, 2020, the Swiss Parliament adopted the "*Federal Act on the Adaptation of Federal Law to Developments in Distributed Ledger Technology*."¹⁹ The law came into force on August 1, 2021. Its purpose was to adjust ten existing federal laws and create favorable framework conditions for companies in FinTech, blockchain, and distributed ledger technologies (DLT) and make Switzerland a forerunner of modern regulation in this field.²⁰

¹⁸ Seba Bank offers digital investing, digital institutional solutions, trading and credit solutions, digital corporate finance, digital banking services, and digital custody services (<https://www.seba.swiss/>). Sygnum is a digital asset bank offering custody, brokerage, tokenization, asset management, lending, and B2B banking (<https://www.sygnum.com/>).

¹⁹ See The Federal Council, <https://www.admin.ch/gov/en/start/documentation/media-releases.msg-id-84035.html> (Accessed on July 20, 2022).

²⁰ The changes in the respective ordinances were covered in the Ordinance on the Adjustment of Federal Law to Developments in Distributed Ledger Technologies of June 18, 2021 ("*Verordnung zur Anpassung des Bundesrechts an Entwicklungen der Technik verteilter elektronischer Register*", AS 2021 400), <https://www.fedlex.admin.ch/eli/oc/2021/400/de> (Accessed on July 20, 2022).

The first step, in February 2021, was *Article 973d* of the *Swiss Code of Obligations*, which introduced *ledger-based securities* or *registered uncertificated securities* as a new category. This instrument makes it possible for Swiss companies to issue DLT securities, for example, to issue stocks or debt as tokenized assets.²¹ The novelty is that securities registered in a securities ledger can only be exercised and transferred within the respective security ledger, i.e., the same protocol.²² There is no specific technological requirement; that is, the regulation can be applied to ledgers based on different types of technology. However, the ledger has to meet specific requirements. In particular, it must guarantee the power of disposal over the rights, technical and organizational integrity, the recording of the registration agreement on the ledger or in accompanying data, and accessibility of relevant information by the creditors, i.e., publicity.²³ Thus, trading on electronic ledgers has a precise and reliable legal basis.

The second wave of the new regulatory framework followed by August 1, 2021: An essential pillar hereby is the *license for DLT trading systems* (or DLT trading facility). This new instrument allows for a trading infrastructure for DLT securities and regulates who is an entitled market participant.²⁴ Private investors are likewise admitted as financial intermediaries. The new rule also differentiates between normal and “small” DLT trading systems. For small DLT trading systems (up to a trading volume of CHF 250 million, a custody volume of CHF 100 million, or a settlement volume of CHF 250 million), there are certain facilitations concerning organization, equity capital, liquidity, emergency plan, and internal audit.²⁵

In the *Banking Act*, crypto assets have been included²⁶ as well as transactions for third accounts on DLT trading systems.²⁷ The regulations of the

²¹ Only tokens from an issuer, such as asset tokens, utility tokens, or stablecoins, are admissible as ledger-based securities, while payment tokens (e.g., Bitcoin) have no issuer and therefore cannot be registered. Hence, they purely count as virtual assets. See Pestalozzi Attorneys at Law: *Ledger-based securities: introduction of DLT shares in Switzerland*, <https://pestalozzilaw.com/en/news/legal-insights/ledger-based-securities-introduction-dlt-shares-switzerland/> (Accessed on July 20, 2022).

²² See Swiss Code of Obligations (SR 220), Art. 973d para. 1, https://www.fedlex.admin.ch/eli/cc/27/317_321_377/en (Accessed on July 20, 2022).

²³ See Swiss Code of Obligations (SR 220), Art. 973d para. 2, https://www.fedlex.admin.ch/eli/cc/27/317_321_377/en (Accessed on July 20, 2022).

²⁴ See Financial Market Infrastructure Ordinance (FinMIO, SR 958.11), Art. 58e and the following, <https://www.fedlex.admin.ch/eli/cc/2015/854/en> (Accessed on July 20, 2022).

²⁵ See Financial Market Infrastructure Ordinance (FinMIO, SR 958.11), Art. 58 k and Art. 58 l, <https://www.fedlex.admin.ch/eli/cc/2015/854/en> (Accessed on July 20, 2022).

²⁶ See Banking Ordinance (Bankenverordnung, SR 952.02), Art. 4 para. 1a and Art. 5a, <https://www.fedlex.admin.ch/eli/cc/2014/273/de> (Accessed on July 20, 2022).

²⁷ See Banking Ordinance (Bankenverordnung, SR 952.02), Art. 4 para. 1a and Art. 5 para. 3c, <https://www.fedlex.admin.ch/eli/cc/2014/273/de> (Accessed on July 20, 2022).

Banking Act are also applicable to financial market participants dealing with crypto assets. This entails that they need a “fintech license” or a banking license as soon as the criteria of the law are met.²⁸ In particular, this is the case when crypto assets are used as payment tokens. This regulation is supposed to limit regulatory arbitrage and makes sure that all banking-related businesses, irrespective of whether crypto assets are involved or not, are regulated the same way.²⁹

The segregation of crypto assets and their transparent treatment in a bankruptcy procedure is another critical element of the new regulation.³⁰ The segregation of digital assets attributable to a client can become relevant in case a custodian goes bankrupt. In the *Anti-Money Laundering Act (AMLA)*, virtual currencies have been explicitly included as part of payment transactions.³¹ In addition, the new DLT trading facility counts as a financial intermediary according to the law.³² In the *Financial Services Ordinance*, the term “Swiss trading venue” was complemented by “Swiss DLT trading facility.”³³ Further major adjustments in laws and their respective ordinances concern the audit supervision, FINMA fees, and the *Capital Adequacy Ordinance*.

With all these adjustments, an essential basis for new business models and digital innovation has been laid. Both asset and utility tokens can now be registered as *DLT securities* on the electronic ledger. The direct and secure issuance of debt and equity securities registered on a blockchain opens up new routes for financing and trading. Likely, it will have a cost-reducing effect for the issuers and enable new business models in the financial sector.

Bankruptcy procedures benefit from higher transparency, data access, and clarity about *segregated digital assets*. The segregation of client’s crypto assets from other financial intermediary assets is an important element in a bankruptcy procedure. With the new regulation, the custodianship of digital assets has a solid legal basis, providing a fertile ground for new business

²⁸ See Banking Act (BA, SR 952.0), Art. 1b, https://www.fedlex.admin.ch/eli/cc/51/117_121_129/de, (Accessed on July 20, 2022).

²⁹ See The Federal Council: Erläuterungsbericht: Verordnung des Bundesrates zur Anpassung des Bundesrechts an Entwicklungen der Technik verteilter elektronischer Register, <https://www.admin.ch/gov/en/start/documentation/media-releases.msg-id-84035.html> (Accessed on July 20, 2022).

³⁰ See the Debt Enforcement and Bankruptcy Act (DEBA), and in particular, the Ordinance on the Administration of Debt Prosecution and Bankruptcy Offices (SR 281.32), Art. 45, https://www.fedlex.admin.ch/eli/cc/27/751_749_771/de (Accessed on July 20, 2022).

³¹ See the Ordinance on Anti-Money Laundering (Geldwäschereiverordnung, SR 955.01), Art. 4 para. 1b, <https://www.fedlex.admin.ch/eli/cc/2015/791/de> (Accessed on July 20, 2022).

³² See the Anti-Money Laundering Act (AMLA, SR 955.0), Art. 2 para. 2d quarter, https://www.fedlex.admin.ch/eli/cc/1998/892_892_892/en, (Accessed on July 20, 2022).

³³ See Financial Services Ordinance (FinSO, SR 950.11), <https://www.fedlex.admin.ch/eli/cc/2019/759/en> (Accessed on July 20, 2022).

activities in this field. For banks, keeping client's digital assets off-balance sheet reduces their capital requirements.³⁴ With the DLT trading facility, no central securities depository is needed, which makes execution much more efficient, faster, and less risky in terms of counterparty risk. At the same time, trading providers can offer additional services, such as custody, clearing, and settlement.³⁵

Hence, the Swiss DLT regulation in force since August 2021 has significantly lowered the threshold for incumbent banks and insurance companies to extend their offering toward crypto assets and move into new business models around securities issuance and the trading of digital assets. At the same time, DLT players are likely to challenge established services, such as trading and custody, traditionally provided by conventional banks and asset managers.

SIX Digital Exchange (SDX)

For existing exchanges, it will be crucial to open up for digital trading and the trading of digital assets. At the same time, central counterparties still play an essential role in clearing specific securities.

On November 18, 2021, *SIX Group* launched its *SIX Digital Exchange (SDX)*, the first regulated digital exchange worldwide, after it got approval from FINMA on September 10, 2021. The trading infrastructure is based on blockchain technology, enabling SDX to offer various services around crypto assets trading. In addition to the exchange, it also provides storage of digital assets through its Central Securities Depository (CSD).³⁶ In June 2022, SDX launched SDX Web3 Services, offering custodial and non-custodial services and technology to institutional clients.³⁷

SDX combined its market entry with issuing “the World's First Digital Bond in a Fully Regulated Environment”,³⁸ a senior unsecured digital bond with a volume of CHF 150 million and issued by SIX Group. This volume comprised a digital (tokenized) part A (CHF 100 million, traded on SDX Trading Ltd. and held by SIX Digital Exchange Ltd.) and a conventional part

³⁴ See PwC: *Swiss DLT law: New Regulations Bring New Opportunities*, <https://www.pwc.ch/en/insights/regulation/swiss-dlt-new-regulations.html> (Accessed on July 20, 2022).

³⁵ See PwC: *Swiss DLT law: New Regulations Bring New Opportunities*, *Ibid.* (Accessed on July 20, 2022).

³⁶ See SDX, <https://www.sdx.com/> (Accessed on July 21, 2022).

³⁷ See SDX, <https://web3.sdx.com/> (Accessed on July 21, 2022).

³⁸ SIX Group Media Release of November 18, 2021, <https://www.six-group.com/en/newsroom/media-releases/2021/20211118-six-sdx-digital-bond.html> (Accessed on July 21, 2022).

B (CHF 50 million, traded on SIX Swiss Exchange Ltd. and held by SIX SIS Ltd.).³⁹

SIX Digital Exchange SDX has set up an ecosystem that is open for partnerships, for example, financing through DLT securities. Even before its official start, SDX teamed up with *Custodigit*, a joint venture by *Swisscom* and *Sygnum*, to create a digital asset gateway that enables third parties to customize products based on cryptocurrencies and crypto assets.⁴⁰ In 2021, SDX conducted an experiment with *SNB*, *BIS*, *Banque de France*, and other partners, to introduce cross-border wholesale central bank digital currencies (CBDCs).⁴¹ In January 2022, SDX established a basis for trading eNotes which are short-term debt instruments based on a blockchain infrastructure of *FQX*.⁴²

These partnerships help SDX implement cutting-edge technology in its product offering. Further collaborations followed with *Aequitec* (share registry and cap table services) in March 2022, *Daura* (equity tokenization platform) in April 2022, *Fireblocks* (digital asset and crypto technology) in July 2022, and *F10* (innovation ecosystem) in July 2022.⁴³ Also, in July 2022, SDX entered a partnership with *Aktionariat* that brings in technology for tokenizing, issuing, and registering shares, thereby facilitating SDX's custody offering.⁴⁴

Conclusion

Banks and insurance companies have demonstrated a great willingness to digitalize their businesses. For incumbent financial market players with history and established processes, executing operations reliably and making sure regulatory requirements are met while keeping the bank running is a

³⁹ SIX Group Media Release of November 18, 2021, <https://www.six-group.com/en/newsroom/media-releases/2021/20211118-six-sdx-digital-bond.html> (Accessed on July 21, 2022)..

⁴⁰ See SDX, <https://www.sdx.com/news/six-joins-forces-with-swisscom-sygnum-joint-venture-custodigit-to-build-institutional-digital-asset-gateway/> (Accessed on July 21, 2022).

⁴¹ See SDX, <https://www.sdx.com/news/bdf-snb-bis-and-six-digital-exchange-successfully-complete-cross-border-wcbdc-experiment> (Accessed on July 21, 2022).

⁴² See SDX, <https://www.sdx.com/news/fqx-and-six-digital-exchange-to-collaborate-on-blockchain-based-short-term-debt-instruments/> (Accessed on July 21, 2022), and FQX AG, <https://fqx.ch/#why-Enotes> (Accessed on July 21, 2022).

⁴³ See SDX, <https://www.sdx.com/insights/news> (Accessed on July 21, 2022).

⁴⁴ See SIX Digital Exchange, <https://www.sdx.com/news/six-digital-exchange-partners-with-aktionariat-to-provide-greater-access-to-capital-through-digital-securities-in-switzerland/> (Accessed on July 21, 2022).

crucial precondition for embarking on the next step, the digital transformation of their business models. Open banking with a host of third-party applications, outsourcing of specific bank operations, and the creation of ecosystems can be seen as the forerunners of more differentiated business models and seamless integration of financial services into product offerings.

FinTech and InsurTech firms play essential roles in this transition process. While some challenge the business models of banks and insurance companies, others collaborate with them, whip their systems and applications into shape, and get ready for embedded finance solutions. To keep up with this development, most incumbent players need to develop and implement a cloud strategy, professionalize their data management, replace their legacy systems, keep cyber security and data protection up to date, and invest in client trust. Digitalization and breaking up value chains will fuel a further consolidation of processes and collaborations with third parties (and competitors), shifting the boundaries between financial services providers. At the same time, players from non-financial sectors but with strong technological competencies are progressively pushing into conventional banking and insurance markets. For incumbents to play a significant role and be relevant in the future, it will be crucial to add value with their specific business model.

Switzerland has taken the lead in shaping excellent market conditions for DLT-based businesses. By 2021, policymakers, regulators, and financial market authorities had set up a modern financial market infrastructure and transparent regulations for distributed ledger technologies. With new DLT securities, DLT trading systems, clear processes for segregating digital assets, rules for transacting cryptocurrencies and crypto assets, and the launch of SIX Digital Exchange (SDX), the first regulated digital exchange worldwide, these framework conditions open new avenues for a wide range of business models in this field.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.





12

Swiss Taxes on Investment and Financing

Introduction

Unlike in most countries, where taxes were typically imposed from the top by a king or a dictator, in Switzerland, tax-raising was introduced democratically in the cantons. The federal government got the right to impose indirect taxes, such as value-added taxes, excise taxes, stamp duties, and customs duties, with the Constitution of 1848. It was only under the pressure of war expenditures that in 1940 the federal government was authorized to levy direct taxes. Initially, this income tax was intended to be an extraordinary financing source for World War II, but politicians quickly got used to additional expenditures which have grown since then. After the war, it was renamed the Direct Federal Tax. With the postwar demand for more social security expenditures—for old age, illness, and unemployment—tax categories increased to 12 by 2022, and the federal government got more tasks which led to rapidly rising Federal tax incomes.

The cantons and municipalities continued to raise taxes¹ and, because of the overlap among federal, cantonal, and municipal taxes,² the Swiss Federal Constitution empowered federal authorities to harmonize the basis of these

¹ The assessment and collection of direct federal taxes are also the responsibility of the cantons, with the Federal Tax Administration retaining supervisory powers.

² This overlap is with direct taxes and not indirect taxes.

taxes. In 1993, the *Federal Tax Law*³ was passed to achieve horizontal harmonization, and on January 1, 1995, further legislation at the federal level was implemented to achieve vertical harmonization.⁴

These harmonization efforts allowed for better statistical comparisons. Unlike the stories of a tax paradise, these comparisons⁵ show that the total tax burden in Switzerland is only slightly below the OECD's European average and is only achieved because defense expenditures had been cut dramatically.

However, these cuts were more than offset by Social Security expenditures, with the federal government's share growing to one-third of the tax pie, and the cantons and municipalities accounting for the remaining one-third each.⁶ By international standards, Switzerland cannot be called a tax haven.⁷ Furthermore, Switzerland raised most of its revenue through individual and social insurance taxes. These revenue sources contrast with OECD countries, where consumption taxes are most important.⁸

Figure 12.1 shows Swiss corporate tax rates from 1981 to 2019. During the 24 years between 1981 and 2005, they trended downward from about 33% to approximately 21%, where they remained fairly constant until 2019. With the introduction of a patent box, the Swiss government reduced the corporate tax rate marginally in 2020 (not shown in Figure 12.1) to incentivize R&D expenditures.

Switzerland raises most of its revenue through individual and social insurance taxes. Figure 12.2 shows how these revenue sources contrast with OECD countries, where consumption taxes are most important:

Just as there are tax laws at the federal level, parallel ones exist for each of the 26 cantons. Because of Switzerland's federalist structure, federal, cantonal, and municipal governments receive tax income in roughly equal proportions. However, these one-third averages do not reflect equal tax charges in the 26 cantons and 2,148 municipalities. Significant differences depend on where a person lives or a company is registered. As a result, the after-tax return an

³ https://www.fedlex.admin.ch/eli/cc/1991/1256_1256_1256/de.

⁴ Horizontal integration aligns tax codes among the cantons; vertical harmonization aligns them between the federal and cantonal levels.

⁵ <https://www.oecd.org/tax/tax-policy/revenue-statistics-switzerland.pdf>.

⁶ The flow of tax income from different sources to different levels of power in municipalities, cantons, and the federal government is a major factor in the country's political stability.

⁷ For instance, based on OECD statistics of total tax revenues as a percentage of gross domestic product, this ratio increased by 0.6% in 2020 compared to its 2000 level from 27 to 27.6%. This ratio developed similarly in all OECD countries, though on a somewhat higher level, as they increased from 32.9 to 33.5% during the same period. The discrepancy between the ratios of Switzerland and OECD countries isn't high enough to justify the label "tax haven". See <https://www.oecd.org/tax/tax-policy/revenue-statistics-switzerland.pdf> (Accessed August 22, 2022).

⁸ Source: Tax Foundation, Taxes in Switzerland, <https://taxfoundation.org/country/switzerland/#sources> (Accessed on August 31, 2022).

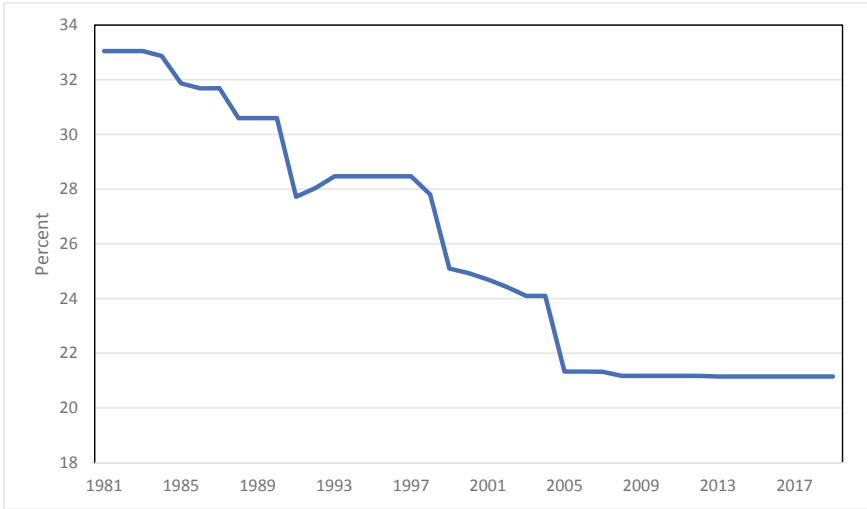


Fig. 12.1 Switzerland’s Top Corporate Tax Rates: 1981 to 2019 (Source: Tax Foundation, Taxes in Switzerland, <https://taxfoundation.org/country/switzerland/#corporate> [Accessed on September 13, 2022])

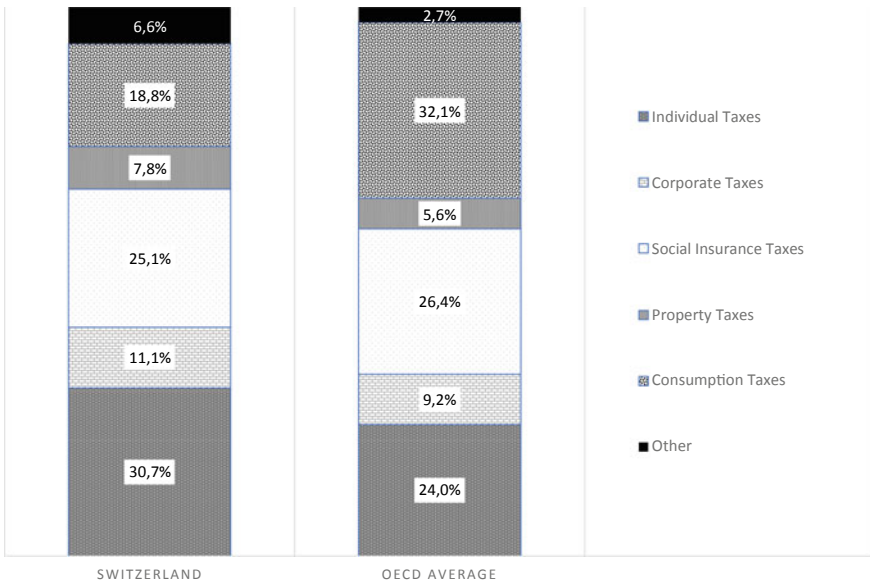


Fig. 12.2 How Does the Swiss Government Raise Revenues Relative to OECD Nations: 2020 (Source Tax Foundation, Sources of Revenue in Switzerland, <https://taxfoundation.org/country/switzerland/#sources> [Accessed on September 13, 2022])

investor or company earns relies on the choice of cantonal and municipal residence.

Table 12.1 provides an overview of the Swiss tax system. It shows how taxes are imposed on three levels: federal, cantonal, and municipal. Individuals pay taxes, such as personal income and wealth taxes, while corporations pay corporate income tax, capital tax, VAT, and capital gains tax.

The tax imposed depends on the nature of the transaction or the type of assets considered. A good example is the difference between withholding taxes, which are imposed on earned income, and stamp duties, which are raised on the issuance or transfer of securities. Whereas Table 12.1 gives an overview of all Swiss taxes, this chapter focuses on those taxes that are most relevant to Switzerland's financial markets and are typically paid by investors.

Federal Withholding Tax

The federal government imposes a 35% withholding tax on certain Swiss capital income, such as dividends of domestic companies, qualifying interest payments of domestic borrowers, bonus shares, interest on Swiss bank accounts,⁹ domestic collective investment schemes, and even lottery prizes.¹⁰ There is no withholding tax on revenues from foreign sources, such as foreign bonds and notes. In 2022, the 35% federal withholding tax on Swiss-earned, capital market income was the only Swiss duty applied at the source level.¹¹ Its primary purpose is to ensure that individuals, who should pay taxes, actually pay them, hence, the avoidance of tax evasion.

For Swiss taxpaying residents (both individuals and corporations), Swiss withholding tax payments are not lost because they are either reimbursed by the government or paid for personal tax liabilities. In fact, a complete 100%

⁹ Unlike many countries, Switzerland taxes the income on Swiss-domiciled savings accounts regardless of currency denomination.

¹⁰ Lottery winners have to pay tax on the gains, but have benefited from the amended law since January 1, 2019: winnings of up to CHF 1 million are tax-free (or up to a higher amount of money determined by cantonal law). Only the amount exceeding this sum must be taxed.

¹¹ Salaries and wages of foreign labor are also subject to withholding taxes. According to Article 83ff of the Direct Federal Tax Law, foreign employees without long-term residence permits from the immigration control authorities are subject to a withholding tax on all income from their employment relationship. The employer is liable for the tax and must deduct it from the employee's earnings. Based on economic affiliations, persons domiciled abroad are subject to a withholding tax on earned income if they are engaged in a gainfully employed activity in Switzerland as a border commuter or with a weekly residence permit. A withholding tax is also levied on Swiss income paid to artists, athletes, lecturers, members of corporate boards, pensioners, and employees in connection with international transport. Furthermore, it is also withheld on interest payments on loans secured by Swiss real estate, and on pension and capital payments from financial security institutions.

Table 12.1 Overview of swiss taxes

I. Taxes on the federal level	
<i>Taxes on income and other direct taxes</i>	<i>Taxes on consumption and other indirect taxes</i>
Direct federal tax	<i>Value added tax</i>
on individual income	Federal withholding tax
on corporate income	Federal stamp duty
Federal tax on gambling houses	Taxes on tobacco and beer
Federal tax for military service	Petroleum tax
	Motorcar tax
	Tax on spirituous beverages
	Customs duty
	Traffic duty
II. Taxes on the cantonal level (26 cantons)	
<i>Taxes on income and wealth and other direct taxes</i>	<i>Taxes related to ownership and excise duties</i>
Income and wealth tax	Motorcar tax
Per capita, personal, or household taxes	Dog tax
Corporate income and capital taxes	Amusement tax
Inheritance tax and gift duty	Cantol stamp duty
Cantonal stamp duty	
Tax on lottery prizes	Lottery tax
Property gains tax	Waterworks tax
Property tax	Other taxes
Property transfer tax	
Cantonal tax on gambling houses	
Other houses	
III. Taxes on the municipal level (2,148 municipalities)	
<i>Taxes on income, wealth, and other direct taxes</i>	<i>Taxes related to ownership and excise duties</i>
Income and wealth tax	Dog tax
Per capita, personal, or household taxes	Amusement tax
Corporate income and capital taxes	Other taxes
Inheritance tax and gift duty	
Cantonal stamp duty	
Tax on lottery prizes	
Property gains tax	
Property tax	
Property transfer tax	
Business tax	
Other taxes	

(*Note Those taxes most relevant for investors are in *italics*.)

Source ESTV, "Geltende Steuern," June 2022 See (<https://www.estv.admin.ch/estv/de/home/die-estv/steuersystem-schweiz/dossier-steuerinformationen.html> [Accessed August 22, 2022])

refund (or offset) can be claimed when income taxes are declared. Relief from withholding taxes must be applied for and is given by means of refunds, or in specific cases, by means of withholding tax relief at the source.¹²

By contrast, non-Swiss residents cannot reclaim any part of this tax unless their country of residence has a *Double Taxation Agreement (DTA)* with Switzerland or a bilateral agreement, such as the one between the European Union (EU) and Switzerland governing the automatic exchange of information. In most nations, this unrecoverable portion of the withholding tax can be deducted from gross income for tax purposes.

In 2022, Switzerland had DTAs with over 100 countries and was seeking to extend its agreement network further. Switzerland also has agreements for the avoidance of double taxation with respect to inheritance and estate taxes.¹³

Regardless of their existence, the real value for investors of these DTAs depends critically upon how rapidly and reliably the authorities refund taxes. Experience has taught many investors that it is preferable to avoid, or at least carefully structure, investments where withholding taxes are involved.

The Federal Council published a dispatch on reforming the withholding tax for the attention of the Swiss Parliament on April 14, 2021. Under the proposal, the withholding tax would continue to apply (unchanged) to the interest paid on bank accounts held by private individuals in Switzerland, but it would no longer apply to interest (coupons) paid on bonds or to individuals outside Switzerland. In respect of the latter, the international system of automatic exchange of information in tax matters has established itself as a safeguard, removing one of the main purposes of a withholding tax.¹⁴ The Federal Council published a report by BAK Economics in June 2019 that

¹² Withholding tax relief at the source level is unavailable for interest income of corporations and for all incomes of individuals. In contrast, firms can obtain withholding tax relief in some circumstances after a notification procedure.

¹³ A current overview of Switzerland's international taxation can be found on the Federal Department of Finance website, <https://www.efd.admin.ch/efd/en/home/taxes/international-taxation/exchange-tax-related-information.html> (Accessed August 22, 2022). The effective tax rate on foreign recipients of Swiss-based investment income, who are residents in countries having double tax treaties with Switzerland is as follows: (1) For portfolio dividend income, the rate in most cases amounts to 15%; with some countries, other rates apply (between 5 and 35%). The last DTT with zero WHT on portfolio holdings was between CH-DK, amended in 2010/2011. 5% is India. (2) For substantial participations, the effective tax rate in most cases adds up to 0, 5, 10, or 15%. In a few countries, other rates, varying between 0 and 35%, apply. Substantial participations depend on the specific treaty and vary between 10 and 80%. They may be holdings of a Swiss company's capital or voting power. (3) Interest income is effectively taxed at a rate between 0 and 15%, but typically it is set at 10%. See SIF, Double Taxation Agreements (DTA), <https://www.sif.admin.ch/sif/en/home/bilateral-relations/tax-agreements/double-taxation-agreements.html>. (Accessed August 22, 2022)

¹⁴ See Abolition of Stamp Duty and Reform of Withholding Tax, <https://www.swissbanking.ch/en/topics/tax/abolition-of-stamp-duty-and-reform-of-withholding-tax> (Accessed August 24, 2022).

looked at the economic impact of abolishing the stamp duty and comprehensively reforming the withholding tax.¹⁵ The report concludes that these reforms would boost gross domestic product by 1.4% within ten years, which equates to around 22,000 new jobs on a full-time equivalent basis.

Federal and Cantonal Stamp Duties

There is hardly any transaction with securities that is not taxed on the federal level, starting with the issuance of securities, the transfer of securities ownership, and insurance premiums. These Swiss stamp duties are imposed at the federal level, and they have been the most counterproductive taxes of Switzerland's financial market, because they have prevented the development of a competitive money market by increasing Switzerland's transaction costs above average international levels, forcing financial transactions abroad. They are generally being cited among the most important reasons for the nation's anemic money market development.

Critics often mention these duties as responsible for Switzerland's significant loss of mutual fund business to Luxembourg and the loss of major portions of the equity and Eurobond businesses to London from the 1970s to the 1990s. For these reasons, the Swiss electorate voted, in a September 1992 referendum, to abolish the stamp duty on money market transactions¹⁶ and replace it with a tax that varies with the maturity of domestic notes and bonds. To reduce or reverse outflows of capital and to mitigate the loss of businesses to countries with lower taxes, Switzerland repealed, among other things, its securities transfer stamp tax on:

- Transfers related to the issuance of bonds by foreign borrowers in currencies other than Swiss francs and Swiss-franc bonds of foreign borrowers¹⁷;
- Transfers (i.e., secondary market) of Eurobonds and Swiss-franc bonds of foreign investors to the extent that a foreign seller or purchaser is a party to the transaction;
- The issuance and transfer of money market papers (i.e., collective fundraising debt instruments with maximum fixed terms of 12 months);

¹⁵ See Volkswirtschaftliche Auswirkungen einer Reform der Stempelabgaben und Verrechnungssteuer, https://www.bak-economics.com/fileadmin/documents/reports/BAK_Economics_Wirkungsanalyse_Reform_Stempelabgabe_Verrechnungssteuer.pdf (Accessed August 24, 2022).

¹⁶ Money market instruments included under this heading are mutual funds certificates, investment certificates, and security trading positions of dealers.

¹⁷ Please note that each issuance also involves a security transfer. In the cases listed above, this transfer is exempt from the securities transfer stamp tax.

- Transfers related to the issuance of Swiss mutual fund certificates; and
- Corporate relocations to Switzerland.

As a consequence of these tax-reduction measures, liquidity in the Swiss capital markets increased immediately. Within a few weeks of the referendum, Swiss share trading volume doubled on the Swiss markets. At the same time, trades of Swiss shares in London fell by half.¹⁸ Increased transactions involving bank Nostro dealings were especially noticeable.

There are many exceptions to the securities issuance stamp tax. One such exemption applies to mergers and changes in corporate structure. There are also exceptions for individuals who are counterparties to foreign banks, brokers, and exchanges, but, with exchanges, these exceptions only apply if they acquire or deliver securities as counterparties to transactions involving standardized derivative instruments. Further exceptions may apply for certain institutional investors, such as mutual funds and foreign-regulated life insurance companies.¹⁹

In December 2011, the Swiss Federal Council abolished stamp duties on the issuance of debt instruments (bonds and money market papers) and shares issued upon exercise of contingent convertible bonds (coco bonds). This change was implemented,²⁰ and immediately thereafter, the Swiss Federal Tax Administration prepared to reform Switzerland's corporate tax laws, with the ultimate goal of abolishing all stamp duties on the issuance of equity. As of 2022, it was clear that these changes would not take effect because, in the public vote of February 2022, the Swiss population rejected the abolishment of stamp duties on the issuance of equity. As mentioned above, on April 14, 2021, the Federal Council published a dispatch on reforming withholding tax for the attention of the Swiss Parliament, in which it also proposed abolishing the transfer stamp tax on Swiss bonds.

1. Stamp duty on the issuance of new securities.

A one percent issuance stamp tax is imposed on corporations wishing to tap the Swiss capital market by either issuing new shares or increasing the nominal capital.

¹⁸ See Economic Intelligence Unit (EIU), "Stamp duty changes increase securities trading in Switzerland," *Country Report*, United Nations, August 3, 1994.

¹⁹ ESTV, *Geltende Steuern*, Juni 2022 <https://www.estv.admin.ch/estv/de/home/die-estv/steuersystem-schweiz/dossier-steuerinformationen.html>).

²⁰ <https://www.estv.admin.ch/estv/de/home/die-estv/steuerpolitik/parlamentsgeschaefte/3-12.html>.

2. Stamp duty on secondary market trading of securities.

The stamp duty on security trading accounts for more than half of the annual federal stamp tax revenues, which were about CHF 2.6 billion in 2021.²¹ This stamp duty must be paid for any transaction that involves a change in security ownership against remuneration between any party to the transaction and a Swiss security dealer acting as either a counterparty or intermediary. For the purchase or sale of foreign securities, a rate of 0.3% is imposed on the Swiss franc value of the security, and a rate of 0.15% is imposed on the transfer of domestic securities. Under the law, the securities dealer owes the tax for both parties, which means the dealer pays each half owed by the buyer and seller, assuming neither party is exempt from the tax. Both equity and debt securities, such as bonds, cash bonds, and mortgage bonds, are subject to this tax. As an anomaly to the system, stamp duty on securities trading also applies to issuances of foreign collective investment schemes (i.e., to a primary market transaction) to the extent that a Swiss securities dealer, acting as either a counterparty or intermediary, is involved in the transaction.

3. Stamp duty on insurance premiums.

In general, a 5% duty is levied on insurance premiums, mainly for liability, fire (unless the item covered by the insurance is located outside Switzerland), damage, and household insurance. In each case, the insurer is held responsible for paying the tax. Special regulations, for life insurance policies, include a 2.5% stamp duty on life insurance policies that have cash-surrender value and were purchased paying a single premium. Similarly, life insurance policies with periodic premium payments are exempt from the duty, as are reinsurance, health, accident, disability, and unemployment insurance policies.

Cantons and municipalities can levy stamp duties as well, but are limited to areas where the federal stamp taxes are not applicable, such as the Ticino cantonal stamp duty on specific contracts and banking documents issued/signed in the canton.

²¹ See Federal finances at a glance. Receipts. https://www.efv.admin.ch/efv/en/home/finanzberichterstattung/bundeshaushalt_ueb/cinnahmen.html.

Personal Income Taxes

Personal income is taxable on the federal, cantonal, and municipal levels. Apart from the special case of labor income, which will not be discussed further in this chapter, taxation depends on the type of investments and, therefore, the source of income. In particular, saving by Swiss residents for old-age retirement generally is tax-deductible, so long as the funds are invested in certified, restricted-access accounts. In 2022, the maximum deductible savings amount per year was CHF 6,883 for individuals with an employee benefit scheme and CHF 34,416 for self-employed savers.²² Moreover, these funds are not subject to wealth taxes and, until they are paid out, their returns are free from Swiss income taxes. These funds must remain invested until at least five years before applicants reach the qualifying age for state, old-age pension benefits, but can be withdrawn in case of emigration to an approved country, for self-use-housing, or leave for self-employment.

Deductions from taxable income are limited and depend on whether an individual already belongs to an occupational pension plan. For saving in unrestricted accounts, both cantons and the federal government provide some relief in the form of deductions. By contrast, the income from free-access savings is taxable at ordinary income tax rates, unless it is part of a retirement plan, in which case, a lower special tax rate is applied at the time of payout.

Personal Capital Gains Tax

Neither the Swiss Confederation nor any of the 26 cantons²³ imposes a capital gains tax on security trades by private individuals (i.e., the capital gains associated with moveable property), and, in 2001, Swiss voters rejected an initiative to re-launch the tax. By contrast, capital gains are taxed as regular income if earned from a business activity. This difference is important because private investors who trade securities on a regular basis and earn profits on such trades might be classified as professional traders by the tax authorities and hence become subject to this tax. Similarly, these earnings are heavily taxed if they involve short-term gains associated with real estate.

²² See *Vorsorge-3a*^{ch}, <https://www.vorsorge-3a.ch/meine-situation/selbstaendig-erwerbstaetig-gebundene-saule-3a.html> (Accessed August 24, 2022).

²³ ESTV, *Geltende Steuern*, June 2022, <https://www.estv.admin.ch/estv/de/home/die-estv/steuersystem-schweiz/dossier-steuerinformationen.html>); The canton of Graubünden maintained its capital gains tax for the longest period, but in 1997 it joined Switzerland's other 25 cantons by abolishing it.

Capital Gains Taxes on Real Estate

In contrast to securities transactions, Switzerland imposes a capital gains tax on real estate equity at the cantonal and municipal levels, and individuals and corporations must pay this tax. Depending on the cantonal law, either a special real estate capital gains tax applies, or these gains are taxed according to regular corporate income tax regulations. The canton of Basel-Stadt, for example, generally takes 60% of the profits if real estate is sold within three years of its purchase. This rate is reduced by 0.5% for each additional month thereafter and reaches a floor at 30% starting in the ninth year after a property's purchase.²⁴

In addition to the capital gains tax, cantons impose other taxes on the transfer of real estate, depending on the purchase price. The rate is usually in the range of 1 to 3%. They also impose a wealth tax on real estate, which varies between 0.03 and 3%. Therefore, even if no official capital gains tax exists, there are many areas and situations in which an effective capital gains tax is actually imposed.

Corporate Income Tax

For all Swiss-domiciled corporations, profits are taxed at the federal, cantonal, and municipal levels. The tax rates for Swiss-domiciled companies are based on worldwide income, except for earnings from non-domestic real estate and permanent foreign establishments. Because rates in each canton and municipality vary, a corporation's tax burden depends heavily on the company's domicile. To avoid conflicts, specific rules apply to the allocation of taxing powers if a corporation maintains a presence in more than one canton, such as a company with its domicile in Zurich and a permanent establishment in Geneva. In general, the maximum statutory rates on before-tax income vary between 11.9 and 21.04%,²⁵ including a federal income tax, which is imposed at a flat rate of 8.5%²⁶ and assorted cantonal and municipal rates.

²⁴ In terms of taxable capital gains (i.e., profits from a real estate sale), the canton of Basel-Stadt has special rules for lowering this basis, which are conditioned on the holding period elapsed (e.g., minus 3% beginning in the sixth year after purchase and for each of the following years, reducing the maximum rate by a cumulative 60%). Also, reduced rates may apply to building investments.

²⁵ KPMG, Clarity on Swiss Taxes, 23, <https://assets.kpmg/content/dam/kpmg/ch/pdf/clarity-on-swiss-taxes-2022-en.pdf> (Accessed August 24, 2022).

²⁶ OSEC, Switzerland Handbook for Investors 2020, 97, <https://www.s-ge.com/sites/default/files/publication/free/handbook-for-investors-s-ge-2020-09.pdf> (Accessed August 24, 2022).

Switzerland's corporate income tax rates were significantly lowered during the past fourteen years. In 2008, the average tax rate was 19.44% which was lowered to 14.68% in 2022.²⁷ The lowest effective corporate income tax (including the federal income tax) is on corporations located in the cantons of Zug, Nidwalden, Lucerne, and Glarus. In each of these cantons, the tax rate is about 12%. The highest tax rate among all Swiss cantons (approximately 21%) is in Bern.²⁸

Certain stakes that one company has in another may qualify for participation relief. In such cases, capital gains are exempt from taxation, in proportions corresponding to the ratio between the net earnings²⁹ on such participations and total net profit. Since January 2011, capital gains have qualified for such an exemption in cases of participations of at least 10%³⁰ (20% before 2011), given that the selling corporation or cooperative has owned the share for a minimum period of one year and the capital gain exceeds the historical acquisition costs of the participation. In general, the cantons and municipalities are free to decide whether or not to introduce legislation that provides for participation relief on capital gains.

On January 1, 2020, Swiss tax reform entered into force and the previously available special tax statuses at cantonal level (e.g., holding status, mixed company status, or principal company status) for Swiss corporate entities fulfilling certain requirements were abolished. For companies previously benefiting from such special tax statuses, specific transitional rules were introduced to mitigate the impact of tax reform. The abolishment of the special tax statuses was also cushioned by a general reduction of the cantonal and municipal income tax rates and by the introduction of new tax measures aimed at increasing the tax competitiveness and attractiveness of Switzerland while introducing measures widely accepted abroad. The newly introduced measures provide for a patent box, a R&D super-deduction, and for a notional interest deduction and are capped with a maximum relief percentage. The cantons are free within some boundaries provided by the Swiss tax reform to implement the mentioned measures and relief capping.³¹

²⁷ KPMG, *Clarity on Swiss Taxes*, 24, <https://assets.kpmg/content/dam/kpmg/ch/pdf/clarity-on-swiss-taxes-2022-en.pdf> (Accessed August 24, 2022).

²⁸ KPMG, *Clarity on Swiss Taxes*, 25, <https://assets.kpmg/content/dam/kpmg/ch/pdf/clarity-on-swiss-taxes-2022-en.pdf> (Accessed August 24, 2022).

²⁹ Net earnings are after administration costs and interest on associated debts.

³⁰ This is articulated in Article 69 of the direct federal tax law (*Bundesgesetz über die direkte Bundessteuer, DBG*). The 10% share applies to share capital or profits plus reserves of the subsidiary.

³¹ As an example, the canton of Basel-Stadt has lowered the cantonal corporate income tax rate to a statutory rate of 6.5% which leads to an overall corporate income tax rate on profit before tax for federal, cantonal, and municipal purposes of 13.04% (before the maximum progressive tax rate was of 22.18%). Besides introducing the possibility of a step-up mechanism as a transitional rule, the

With these measures, Switzerland retained its international attractiveness and was able to safeguard the inter-cantonal tax competition.

Taxes may also be rescinded if a company agrees to operate in one of Switzerland's eligible regional areas. To qualify for this tax benefit, cantons usually have additional conditions, which are often connected to innovation, investments, and job creation. The Appendix to this chapter, entitled *Statutory Top Corporate Rates around the World, 2021*, provides a comparison for 2021 of global corporate tax burdens, showing that Swiss corporate tax rates were still below the international average.

Cantons are free to define their own individual tax rates. As a result, some cantons have flat-rate taxes on profits while others tax them on a proportional basis. Municipal taxes are typically a fixed multiple of the cantonal tax.

Each corporation in Switzerland is taxed as a separate legal entity, which means the parent and affiliates are taxed separately, and there is no group consolidation for tax purposes. A parent company is taxed only on its own income and the dividends it receives from affiliates.³² As long as the transactions between a Swiss branch and foreign head office are at arm's length, Switzerland imposes no withholding taxes on profit transfers abroad.

At the federal, cantonal, and communal levels in Switzerland, corporate losses may be carried forward for as many as seven business years and deducted from future net profits.³³ For many start-ups, this period is overly restrictive.³⁴ Loss carryback provisions are not permitted by Swiss tax authorities, except for the canton of Thurgau, which allows a one-year carryback on the cantonal and municipal levels.

Corporate Capital Tax

In Switzerland, only the cantonal/municipal tax authorities impose capital taxes on a company's net equity, which is defined as the sum of nominal capital, paid in surplus, retained earnings, other equity reserves, and,

canton of Basel-Stadt introduced the patent box with a 90% exemption of qualifying income and an overall maximum relief percentage for all measures of 40%. The R&D super-deduction and the notional interest deduction were discarded. In an ideal case and with the implemented measures, the lowest applicable tax rate on profit before tax would be 11.03%.

³² An entity subject to taxation, with a registered office, and place of effective management abroad pays taxes on the profits earned in Switzerland.

³³ Article 52, *Bundesgesetz über die direkte Bundessteuer, DBG*, and Article 25 paragraph 2 of the *Tax Harmonization Act (StHG)*.

³⁴ This seven-year period has been criticized to disadvantage start-ups for being too short. Start-ups invest 10 to 15 years in new technologies at the frontier of technological development and can't make use of a tax credit that is valid only for seven years.

according to Swiss thin capitalization rules, potentially existing deemed or hidden equity. Tax rates vary depending on the place of business but are typically below 0.5%. As a result of Switzerland's relatively recent corporate tax reforms,³⁵ which became effective in 2009, cantons are allowed to deduct the cantonal corporate capital taxes from the cantonal corporate income taxes. In practice, this means that only the higher of the two rates has to be paid. In addition, Swiss corporate tax reform allows the cantons as of January 1, 2020, to introduce an adaptation of the capital tax base for participations, patents, and loans to group companies, which typically lowers the impact of capital tax provided that qualifying assets are held.

Value-Added Tax (Vat)

The Swiss value-added tax (VAT) has been in force since 1995, when it replaced the nation's turnover tax. Unless an activity is expressly exempted from the tax, such as medical services and cultural offerings, this tax is imposed on all transactions in Switzerland involving the exchange of goods and services. Business owners whose revenues exceed CHF 100,000 are liable for the VAT. Since January 1, 2018, the standard tax rate was 7.7%, but the tax on basic goods, such as water, food, books, and newspapers, was 2.5%. Moreover, a special rate of 3.7% was applied to hotels.

VAT is a tax on domestic consumption. As a result, it is also imposed on all imports but not on exports. Therefore, domestic products are able to compete in the international markets without the added tax burden, and foreign producers must bear the same VAT burden as domestic Swiss companies.

Corporate Capital Gains Tax

Capital gains earned by corporations are classified as direct income and subject to taxation at the standard rates described above. As mentioned above, the tax on real estate capital gains is often treated differently from canton to canton and within a canton. The rate can also vary depending on how long the asset has been held.

³⁵ Article 30, paragraph 2 of the *Tax Harmonization Act (StHG)*.

Special Aspects of Corporate Taxation

Taxation of income, capital, and capital gains may differ depending on the particular situation and structure of a company. Of particular interest here are the tax treatments of dividends, and foreign income.

1. Taxation of dividends and stock dividends.

Since 2011, corporations and cooperatives owning at least 10% (20% before 2011) of a dividend-paying corporation's share capital or owning participations with a current market value of at least CHF 1 million (CHF 2 million before 2011) receive a profit-tax abatement. The abatement is without regard to any minimum holding period and in proportions that correspond to the ratio between the net earnings on such participations and total net profit. Tax relief on such significant shareholdings in other firms is mandatory at all levels. Relief is mandatory at all levels of taxation (federal, cantonal, and municipal) to avoid triple taxation of the same profits. Without such relief, each Swiss franc profit would be taxed at the corporate, holding company, and individual levels. Stock dividends are subject to taxation at the federal level in the same manner as cash dividends. Cantons also tax stock dividends, but they are not homogeneous with respect to the timing. Some cantons levy the tax directly when a stock dividend is issued, while others wait until the stake is sold.

2. Taxation of foreign income.

Income from domestic and foreign sources generated by a Swiss resident corporation is subject to income taxation in Switzerland, except for income from foreign real estate or income allocated to a foreign permanent establishment. Such foreign income would be unilaterally allocated abroad and not be taxed with corporate income tax. Cantons with progressive corporate income tax rates may, however, consider such income for the assessment of the applicable corporate income tax rate (i.e., consider for tax rate progression). Unrecoverable foreign withholding taxes in countries with which Switzerland has double tax treaties typically can be indirectly credited against the taxes due considering a tax credit capping mechanism. If no Swiss income taxes are due by the Swiss resident company (e.g., due to a loss or offsetting of income with tax losses carried forward), no tax credit is granted and the foreign suffered tax is lost. The withholding taxes of non-treaty countries cannot be offset against

corporate income taxes, but there is an allowance for income tax purposes, i.e., a net taxation of the income.

Conclusion

Switzerland is neither a tax haven nor a tax dungeon. Tax rates are about equal to the international average, but if Switzerland's special tax measures are considered, they often fall somewhat below this level. Because taxes are a crucial element of business (and business decisions) and because Switzerland has many exceptions and three levels of taxation (i.e., federal, cantonal, and local), professional tax advice is a must.

Generally speaking, Switzerland's tax structure has not been particularly kind to capital market transactions. In fact, it has driven some businesses to offshore markets and to nations with more benevolent rates and treatment. Switzerland's tax system strongly favors debt over equity, and for young capital-intensive companies that are at the frontier of technological development and facing long development horizons, it has been (and is) a clear obstacle.

Appendix: Statutory Top Corporate Tax Rates around the World, 2021

ISO3	Country	Continent	Corporate Tax Rate (%)
AFG	Afghanistan	AS	20.00
ALA	Aland Islands	EU	20.00
ALB	Albania	EU	15.00
DZA	Algeria	AF	26.00
ASM	American Samoa	OC	34.00
AND	Andorra	EU	10.00
AGO	Angola	AF	25.00
AIA	Anguilla	NO	0.00
ATG	Antigua and Barbuda	NO	25.00
ARG	Argentina	SA	35.00
ARM	Armenia	AS	18.00
ABW	Aruba	NO	25.00
AUS	Australia	OC	30.00
AUT	Austria	EU	25.00
AZE	Azerbaijan	AS	20.00
BHS	Bahamas	NO	0.00

(continued)

(continued)

ISO3	Country	Continent	Corporate Tax Rate (%)
BHR	Bahrain	AS	0.00
BGD	Bangladesh	AS	32.50
BRB	Barbados	NO	5.50
BLR	Belarus	EU	18.00
BEL	Belgium	EU	25.00
BLZ	Belize	NO	25.00
BEN	Benin	AF	30.00
BMU	Bermuda	NO	0.00
BTN	Bhutan	AS	25.00
BOL	Bolivia (Plurinational State of)	SA	25.00
BES	Bonaire, Sint Eustatius and Saba	NO	25.00
BIH	Bosnia and Herzegovina	EU	10.00
BWA	Botswana	AF	22.00
BRA	Brazil	SA	34.00
VGB	British Virgin Islands	NO	0.00
BRN	Brunei Darussalam	AS	18.50
BGR	Bulgaria	EU	10.00
BFA	Burkina Faso	AF	28.00
BDI	Burundi	AF	30.00
CPV	Cabo Verde	AF	22.00
KHM	Cambodia	AS	20.00
CMR	Cameroon	AF	33.00
CAN	Canada	NO	26.47
CYM	Cayman Islands	NO	0.00
CAF	Central African Republic	AF	30.00
TCD	Chad	AF	35.00
CHL	Chile	SA	15.00
CHN	China	AS	25.00
HKG	China, Hong Kong Special Administrative Region	AS	16.50
MAC	China, Macao Special Administrative Region	AS	12.00
COL	Colombia	SA	31.00
COM	Comoros	AF	50.00
COG	Congo	AF	28.00
COK	Cook Islands	OC	20.00
CRI	Costa Rica	NO	30.00
CIV	Cote d'Ivoire	AF	25.00
HRV	Croatia	EU	18.00
CUB	Cuba	NO	35.00
CUW	Curacao	NO	22.00
CYP	Cyprus	EU	12.50
CZE	Czechia	EU	19.00

(continued)

(continued)

ISO3	Country	Continent	Corporate Tax Rate (%)
COD	Democratic Republic of the Congo	AF	30.00
DNK	Denmark	EU	22.00
DJI	Djibouti	AF	25.00
DMA	Dominica	NO	25.00
DOM	Dominican Republic	NO	27.00
ECU	Ecuador	SA	25.00
EGY	Egypt	AF	22.50
SLV	El Salvador	NO	30.00
GNQ	Equatorial Guinea	AF	35.00
ERI	Eritrea	AF	30.00
EST	Estonia	EU	20.00
ETH	Ethiopia	AF	30.00
FLK	Falkland Islands (Malvinas)	SA	26.00
FRO	Faroe Islands	EU	18.00
FJI	Fiji	OC	20.00
FIN	Finland	EU	20.00
FRA	France	EU	28.41
PYF	French Polynesia	OC	25.00
GAB	Gabon	AF	30.00
GMB	Gambia	AF	27.00
GEO	Georgia	AS	15.00
DEU	Germany	EU	29.90
GHA	Ghana	AF	25.00
GIB	Gibraltar	EU	12.50
GRC	Greece	EU	24.00
GRL	Greenland	NO	26.50
GRD	Grenada	NO	28.00
GUM	Guam	OC	21.00
GTM	Guatemala	NO	25.00
GGY	Guernsey	EU	0.00
GIN	Guinea	AF	35.00
GNB	Guinea-Bissau	AF	25.00
GUY	Guyana	SA	25.00
HTI	Haiti	NO	30.00
HND	Honduras	NO	25.00
HUN	Hungary	EU	9.00
ISL	Iceland	EU	20.00
IND	India	AS	30.00
IDN	Indonesia	AS	22.00
IRN	Iran (Islamic Republic of)	AS	25.00
IRQ	Iraq	AS	15.00
IRL	Ireland	EU	12.50
IMN	Isle of Man	EU	0.00

(continued)

(continued)

ISO3	Country	Continent	Corporate Tax Rate (%)
ISR	Israel	AS	23.00
ITA	Italy	EU	27.81
JAM	Jamaica	NO	25.00
JPN	Japan	AS	29.74
JEY	Jersey	EU	0.00
JOR	Jordan	AS	20.00
KAZ	Kazakhstan	AS	20.00
KEN	Kenya	AF	30.00
KIR	Kiribati	OC	30.00
XKX	Kosovo, Republic of	EU	10.00
KWT	Kuwait	AS	15.00
KGZ	Kyrgyzstan	AS	10.00
LAO	Lao People's Democratic Republic	AS	20.00
LVA	Latvia	EU	20.00
LBN	Lebanon	AS	17.00
LSO	Lesotho	AF	25.00
LBR	Liberia	AF	25.00
LBY	Libya	AF	20.00
LIE	Liechtenstein	EU	12.50
LTU	Lithuania	EU	15.00
LUX	Luxembourg	EU	24.94
MDG	Madagascar	AF	20.00
MWI	Malawi	AF	30.00
MYS	Malaysia	AS	24.00
MDV	Maldives	AS	15.00
MLI	Mali	AF	30.00
MLT	Malta	EU	35.00
MRT	Mauritania	AF	25.00
MUS	Mauritius	AF	15.00
MEX	Mexico	NO	30.00
FSM	Micronesia (Federated States of)	OC	30.00
MCO	Monaco	EU	26.50
MNG	Mongolia	AS	25.00
MNE	Montenegro	EU	9.00
MSR	Montserrat	NO	30.00
MAR	Morocco	AF	31.00
MOZ	Mozambique	AF	32.00
MMR	Myanmar	AS	25.00
NAM	Namibia	AF	32.00
NRU	Nauru	OC	25.00
NPL	Nepal	AS	25.00
NLD	Netherlands	EU	25.00

(continued)

(continued)

ISO3	Country	Continent	Corporate Tax Rate (%)
NCL	New Caledonia	OC	30.00
NZL	New Zealand	OC	28.00
NIC	Nicaragua	NO	30.00
NER	Niger	AF	30.00
NGA	Nigeria	AF	30.00
NIU	Niue	OC	30.00
MNP	Northern Mariana Islands	OC	21.00
NOR	Norway	EU	22.00
OMN	Oman	AS	15.00
PAK	Pakistan	AS	29.00
PAN	Panama	NO	25.00
PNG	Papua New Guinea	OC	30.00
PRY	Paraguay	SA	10.00
PER	Peru	SA	29.50
PHL	Philippines	AS	30.00
POL	Poland	EU	19.00
PRT	Portugal	EU	31.50
PRI	Puerto Rico	NO	37.50
QAT	Qatar	AS	10.00
KOR	Republic of Korea	AS	27.50
MDA	Republic of Moldova	EU	12.00
ROU	Romania	EU	16.00
RUS	Russian Federation	EU	20.00
RWA	Rwanda	AF	30.00
BLM	Saint Barthelemy	NO	0.00
SHN	Saint Helena	AF	25.00
KNA	Saint Kitts and Nevis	NO	33.00
LCA	Saint Lucia	NO	30.00
MAF	Saint Martin (French Part)	NO	35.00
VCT	Saint Vincent and the Grenadines	NO	30.00
WSM	Samoa	OC	27.00
SMR	San Marino	EU	17.00
STP	Sao Tome and Principe	AF	25.00
SAU	Saudi Arabia	AS	20.00
SEN	Senegal	AF	30.00
SRB	Serbia	EU	15.00
SYC	Seychelles	AF	33.00
SLE	Sierra Leone	AF	30.00
SGP	Singapore	AS	17.00
SXM	Sint Maarten (Dutch part)	NO	35.00
SVK	Slovakia	EU	21.00
SVN	Slovenia	EU	19.00
SLB	Solomon Islands	OC	30.00

(continued)

(continued)

ISO3	Country	Continent	Corporate Tax Rate (%)
ZAF	South Africa	AF	28.00
SSD	South Sudan	AF	25.00
ESP	Spain	EU	25.00
LKA	Sri Lanka	AS	24.00
PSE	State of Palestine	AS	15.00
SDN	Sudan	AF	35.00
SUR	Suriname	SA	36.00
SWZ	Swaziland	AF	27.50
SWE	Sweden	EU	20.60
CHE	Switzerland	EU	19.70
SYR	Syrian Arab Republic	AS	28.00
TWN	Taiwan	AS	20.00
TJK	Tajikistan	AS	23.00
THA	Thailand	AS	20.00
MKD	The former Yugoslav Republic of Macedonia	EU	10.00
TLS	Timor-Leste	OC	10.00
TGO	Togo	AF	27.00
TKL	Tokelau	OC	0.00
TON	Tonga	OC	25.00
TTO	Trinidad and Tobago	NO	30.00
TUN	Tunisia	AF	15.00
TUR	Turkey	AS	20.00
TKM	Turkmenistan	AS	8.00
TCA	Turks and Caicos Islands	NO	0.00
UGA	Uganda	AF	30.00
UKR	Ukraine	EU	18.00
ARE	United Arab Emirates	AS	0.00
GBR	United Kingdom of Great Britain and Northern Ireland	EU	19.00
TZA	United Republic of Tanzania	AF	30.00
USA	United States of America	NO	25.75
VIR	United States Virgin Islands	NO	23.10
URY	Uruguay	SA	25.00
UZB	Uzbekistan	AS	7.50
VUT	Vanuatu	OC	0.00
VEN	Venezuela (Bolivarian Republic of)	SA	34.00
VNM	Viet Nam	AS	20.00
WLF	Wallis and Futuna Islands	OC	0.00
YEM	Yemen	AS	20.00
ZMB	Zambia	AF	35.00
ZWE	Zimbabwe	AF	24.72

Notes Continent abbreviations are as follows: "AF" is Africa, "AS" is Asia, "EU" is Europe, "OC" is Oceania, "NO" is North America, and "SA" is South America.

Countries are assigned to continents based on ISO standards; see DataHub.io, "Comprehensive country codes: ISO 3166, ITU, ISO 4217 currency codes and many more," https://datahub.io/core/country-codes#resource-country-codes_zip Source Tax Foundation, Tax Foundation, Corporate Tax Rates around the World, 2021 (<https://taxfoundation.org/publications/corporate-tax-rates-around-the-world/>) Accessed on September 13, 2022.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.





13

Summary and Outlook

The size, growth, and global importance of Swiss financial markets result from their ability to exceed the expectations of investors with primary needs, such as safety from political prosecution, currency losses, and excessive taxation. The nation's reputation and stability have benefitted from a reliable legal system, trustworthy public institutions, and freedom from political, economic, and social uncertainty.

Financial Center Switzerland

At the center of the “Finanzplatz Schweiz” is the SIX Group, a leading financial infrastructure provider that offers a fully integrated and automated platform for electronic securities and post-trading activities. The SIX Group's self-regulatory structure and private ownership allow it to stay at the forefront of technological developments and react decisively to fast-changing ecosystems in its four business units, exchanges, securities services, financial information, and banking services.

The SIX Group manages Switzerland's entire securities and payment value chain. It disseminates financial information, provides reporting services, processes card-based and interbank payments, offers services for retail payments, and is breaking new ground with the world's first end-to-end exchange for digital assets. The SIX Group competes in a global environment, where success depends on effective risk management and state-of-the-art handling of financial instruments.

These strengths form the basis for the Swiss financial industry's value-added services, most notably in private banking. The capital-intensive infrastructure and harmonized regulatory environment enable Swiss financial institutions to compete internationally despite their home country's diminutive geographical size. Continued success of the SIX Group is essential for Switzerland's financial center and deserves all the political support it can gather.

Swiss Banking Secrecy

Banking secrecy is inevitably prone to misuse, and the press regularly reports financial improprieties connected to the activities of Swiss bankers. Switzerland is not the only country with bank secrecy laws. It is fair to say that all nations with developed financial markets have laws protecting bank customers' confidentiality. The difference is that, for years, Switzerland has been one of the most steadfast enforcers of its bank secrecy laws. Like other countries, Switzerland takes a tough stand on illegal activities, such as money laundering, tax fraud, and financing terrorism. Illegal acts do not enjoy Swiss banking secrecy rights, and perpetrators are prosecuted, just as they would for any criminal offense.

Switzerland continues to be the largest administrator of private funds globally, and many of these funds still benefit from traditional Swiss banking secrecy, as do all Swiss residents. Although privacy protection remains an essential element of Switzerland's investment offerings, the efficiency of private banking services, continued improvements of Switzerland's value chain, and adherence to the basics of financial safety and prudence will be the most crucial factors for Switzerland's future role in banking.

Switzerland's banking secrecy practices have been shaped by the interplay of three major forces: the nation's constitution, laws governing the disclosure of bank customer information, and forceful international pressure toward transparency. Switzerland has taken significant steps to exchange information with other countries automatically. Most recently, the invasion of Ukraine by Russia has led to a massive increase in cooperation among Western countries, resulting in Switzerland adopting all European sanctions against the aggressor, with interesting implications for the future of Swiss banking secrecy. It remains to be seen how Switzerland will continue to balance these trade-offs and whether the country can stay true to its heritage as a defender of privacy amidst ever-increasing international pressures.

Swiss Banking

Historically, Switzerland's universal banking system developed mainly as a service to clients, but that development changed dramatically with the acquisition of American investment banks by Swiss financial institutions. During the past three decades, these acquisitions, along with rapid movements into derivatives and securitization, have changed the institutions' risk profiles and cultures, leading to massive losses among investment banks, also in Switzerland. Big Swiss banks had to cut their investment banking exposures and refocus their activities on their traditional strengths, chiefly global wealth management, based on a state-of-the-art market infrastructure.

More than 13 years after the US-led financial crisis hit home, some banks are still in the middle of this transition, with no end in sight. Despite this, the industry seems to have found its footing, with a diverse ecosystem of banks servicing increasing levels of healthy business activity.

Strong global trends, such as digitalization, sustainability, and recently rising inflation constantly change the banking ecosystem and its competitive landscape. Digitalization will not only lead to significant changes in how traditional banking services are provided but also introduce new kinds of assets and competitors with the ever-present need for cybersecurity. Sustainability is a global issue that cannot be solved in a small country, compounding the need for Switzerland to stay open and access international markets while doing what it can to contribute to productive solutions.

A major driver of the banking sector has been massive regulation, resulting from the financial crisis of 2008. The Basel III capital standards became effective in 2012 and were gradually implemented into Swiss law. They require banks to keep sufficient capital to back credit, market, operational, and other risks. For systemically important banks (SIBs), the standards contain additional requirements regarding capital and liquidity provisions. Many banks maintain capital and liquidity buffers substantially higher than the legal minimum.

SNB and the Swiss Franc

The Swiss franc's solidity has made the nation's capital markets attractive. The franc has remained strong for over a hundred years, thanks to the Swiss National Bank's independence. The combination of Switzerland's direct democracy and the SNB's responsible management make it highly unlikely that this precious asset will be sacrificed to the playgrounds of politicians.

For a century, the SNB has been tested by many challenges. Repeatedly, the central bank has proven its willingness and ability to design and implement innovative solutions when it mattered most and focus on its primary mandate of keeping inflation low. The COVID-19 pandemic provides an ideal example. Within just a few days, in March 2020, joint efforts of the SNB, Swiss banks, the federal government, and the FINMA resulted in a financial aid package that ensured liquidity to companies hard hit by the crisis. Their efforts helped rescue the Swiss economy.

The franc's strength and stability have been essential to Swiss and international capital markets, but this strength has come at a cost, with the export industry feeling its brunt. The Swiss franc's strength motivated the SNB to temporarily defend a minimum exchange rate of 1.20 Swiss francs per euro between September 2011 and January 2015. Given its special nature and small home country size, the SNB walks a razor's edge between controlling exchange rates and the money supply. It also has an open eye toward the future, actively researching digital assets and their applicability to central banking.

Looking to the future, it remains uncertain how the SNB will handle the massive increase in its balance sheet in times of rapidly rising inflation rates. With huge foreign currency reserves, a sovereign wealth fund is being discussed to manage currency risk and effectively solve this problem. Given the track record since its foundation in 1906, there is every reason to believe the central bank will succeed in its mission to manage the currency effectively.

Financial Digitalization

Digitalization has been one of the strongest currents in Swiss financial markets, and there seems to be no end in sight for the revolutionary changes it has in store. The primary job of financial markets, to transfer information, is more efficient with digital tools, which will further revolutionize financial operations. Although financial intermediaries in Switzerland are sophisticated in digitalizing their processes, it is an open question how the digital transformation of business models will shape the future ecosystem of clients, banks, insurance companies, and non-bank service providers.

The value chains of incumbent market players will be increasingly challenged by new technologies and competitors, many of whom have non-finance backgrounds. Since around 2010, open banking has cleared the way for integrating third-party applications and outsourcing services, creating

ecosystems and collaborations with technology providers, such as FinTech companies in banking and InsurTech companies in insurance.

Switzerland has been one of the very few early movers globally in providing a comprehensive and solid DLT regulation. The Swiss framework furnishes a modern financial market infrastructure, transparent rules for distributed ledger technologies, new DLT securities and trading systems, transparent processes for segregating digital assets, and rules for transacting cryptocurrencies and crypto assets. These elements are an essential basis for new business models and digital innovation, and they will fuel Switzerland's ability to keep its cutting edge in financial services.

Debt Markets

The Swiss debt market is the largest segment of the Swiss capital market. It provides a liquid and rich universe of long-term financial instruments, profiting from a stable home currency, favorable tax treatment, and reflecting the average volatility-aversion of investors. Contrary to medium- to long-term maturities, the short-term debt market is shallow compared to other developed financial marketplaces.

While the Confederation was the largest provider of new issues on the domestic bond market until the implementation of the Debt Break in 2007, this has changed. Despite the cyclicity of public issues, the aggregate volume of federal debt since 2007 suggests that the Swiss Debt Break has been successful. Yet, as the COVID-19 pandemic demonstrated, additional expenditures are possible in extraordinary situations. Since 2008, growth in the Swiss bond market has been driven mainly by mortgage bonds and issues from banks because of a booming real estate market, based on the unique safety structure of Swiss covered bonds. After 2014, new instruments for sustainable investing have continuously enriched the Swiss bond market. Although the number of these instruments has been growing considerably, their aggregate volume is still small compared to other bond market segments.

Equity Markets

From an economic perspective, Swiss equity markets are the weakest link in the country's financial system. From their beginning, equity markets were meant to provide economies with risk capital. But the Swiss public-equity market, as reflected by stock exchange statistics, has returned more money

to investors for decades than it has raised from them. The listing of foreign shares has declined massively since 2001. Despite this, the number of trades on the Swiss equity markets has increased eightfold.

Switzerland's equity market is still young relative to others. Deregulation, automation, consolidation, and the emergence and rapid growth of derivatives have all contributed to the development of this market into one of the world's most efficient and integrated. While there is a risk that Switzerland's economy will decline in relative importance, that does not mean there will be less need for the country's financial services and know-how. Switzerland is a financial turntable whose speed and capacity to function are tied to financial leaders' ingenuity and strategic decisions, in business and government.

Like Anglo-Saxon countries and in contrast to many others, Switzerland's wealth is strongly invested in public equities, but this is not the case for venture capital, a critical portion of this market. It may come as a surprise to learn that foreigners finance most of Switzerland's venture capital investments. Considering the country's high labor costs, its ability to maintain income levels will only be possible by investing in cutting-edge technological developments. Doing so will require enormous investments in the form of risk capital. Venture capital measured relative to GDP increased from around 0.5 per mill (0.05%), on average, before 2010, to about 3 per mill (0.3%) in 2021. There are strong reasons to believe that current levels of risk-capital investments will be insufficient to boost future economic growth and provide a fertile ground for leveraging Switzerland's excellent research output into marketable products.

Derivatives Markets

Due to their high growth rates, derivative markets have become central to today's financial markets. There are lengthy discussions about structured products. Do they effectively provide needed services, such as hedging, access to specific products, and yield enhancement, or are they used mainly as a conduit to generate fees while simultaneously increasing systemic risks?

As a significant financial contributor to worldwide listings of derivative instruments, Switzerland has a vested interest in ensuring that these markets develop smoothly and provide necessary transparency and risk management tools, especially regarding over-the-counter (OTC) derivatives. The country's success in this sector stems mainly from its ability to offer structured products at competitive prices.

Since 2016, derivatives trades have been regulated by the *Financial Market Infrastructure Act (FinMIA)*. It introduced mandatory trading via specific venues, organized trading facilities, and made clearing via a central counterparty mandatory for trades not conducted at a trading venue (i.e., OTC trades). An ongoing issue in the future will be the extent to which insured or guaranteed financial institutions will be permitted to take proprietary risks using derivative instruments.

Institutional Investors

Unfortunately, funds accumulated in Swiss social security programs are invested mainly in low-risk financial assets, such as government bonds, notes, and real estate. These investments are considered to be safe in nominal terms but earn only modest returns and do little or nothing to increase the long-term value-creation of the Swiss economy. A job-creating economy needs future-oriented investments, which is why Switzerland's relatively meager venture capital investments, compared to other leading countries, are disconcerting.

Investments by Switzerland's institutional investors vary considerably. For example, pension funds hold approximately 30% of their assets in shares and an equal portion in bonds. Insurance companies have only 13% in shares and 42% in bonds. The assets of collective investment schemes, a rapidly growing institutional investor sector, allocate 34% of their assets to shares and 27% to debt instruments. Since 2005, their aggregate volume has increased by more than 10% per year. The message is clear. How these institutions invest their funds will significantly affect Switzerland's long-term economic health and vitality. Focusing inordinate attention on the volatility of a particular asset class rather than the long-term potential of a diversified portfolio of productivity-enhancing investments is a recipe for secular economic decline. Defining "safety" with the strictest and narrowest legal interpretations will accelerate the fall.

Swiss Tax System

Shaped by innumerable internal and external political pressures, Switzerland's current tax and Social Security systems are slightly tilted away from younger, growth-generating age groups in favor of their retired elders. Like many nations, Switzerland's tax laws favor debt over equity financing by allowing

interest charges to be deducted from tax bills. Losses for ten years or more are typical of many innovative start-up companies. By limiting tax deductions on their losses to only seven years, Switzerland reduces the chances these companies will ever start and once started, survive the decade or more needed to bring them to fruition. Intended or not, an intergenerational transfer of assets and opportunities occurs when seeds for the future are consumed before they are planted.

For Switzerland to unharness its potential, it needs to make thoughtful reforms to its stamp tax, which has had a corrosive impact on young capital-intensive companies at the frontier of technological developments. These are the companies Switzerland should be going out of its way to encourage. They are the nation's future, and, for years, the stamp duty has driven these lucrative businesses offshore. The damage does not stop there. For more evidence, one only needs to look at euro-bond issues, once a leading business in Switzerland, and Swiss-franc bonds, which have been driven offshore by the stamp tax.

Outlook

Switzerland's finance markets have prospered by adapting to strong internal and external forces, among which have been many counterproductive laws and regulations. To succeed in the future, Swiss capital markets need the productive support of authorities. Ultimately, it is not the capital markets that generate wealth but entrepreneurs. Those policies that reduce barriers to competition and support entrepreneurial risk-taking, ideally at the forefront of technological innovation, are the ingredients for future prosperity and high living standards. Currently, they are highly desirable, but they may soon be indispensable.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.



Index

0–9

- 1Malaysia Development Berhad (1MDB) 189
- 5G computing 66
- 2050 Net Zero Initiative 92

A

- Abacha Affair 184
- Accelerators 71
- Accenture 78, 398
- Access 1, 4, 5, 9, 11, 12, 17, 20, 24, 25, 28, 30, 33, 34, 36, 37, 43, 46, 48, 49, 52, 55, 65, 69, 73–76, 79–84, 93, 105, 122, 137, 147, 162, 167, 172, 174, 176, 195, 199, 237, 238, 240, 244, 249, 261, 271, 281, 297, 316, 333, 355, 363, 378, 393–395, 397, 398, 400, 403, 428, 477, 484, 494, 498, 516, 524, 526, 529, 531, 533, 544, 558, 573, 576
- Account-based CBDC 79, 80, 394
- Account-based retail CBDCs 394

- Account databases 241
- Administrative assistance 209, 220–222, 224
- Administrative assistance under double tax treaties 224
- Admission of securities to trading and ongoing listing 20
- Age of enlightenment 1
- Aggregator role 534
- Agreement on the Observance of Care in Accepting Funds and Practice of Banking Secrecy of the SBA 213
- Agreement on the Swiss Banks' Code of Conduct with Regard to the Exercise of Due Diligence (CDB 20) 186, 214, 253
- Allfinanz 315, 318
- Alphonse D'Amato 239, 245
- Alternative asset 306, 462, 523
- Alternative trading venues 31
- Amazon 74, 533
- American Depository Receipt (ADR) 477, 478
- Amsterdam 71

- Anonymity 29, 79, 394, 401, 404, 506, 524
- Anonymous tax solution 196
- Anti-Money Laundering Act (AMLA) 71, 87, 182–185, 256, 260, 262, 267, 272, 277, 293, 294, 544
- Anti-Money-Laundering Ordinance (AMLO) 185–187
- Appenzell Ausserrhoden 134
- Apple 74, 533
- Appleby 205
- Apple Pay 74
- Application Programming Interface (API) 74, 530
- Article 2 (Definitions) of the SESTA 167
- Article 2 (Scope and Limits of Legal Relationships) of the Swiss Civil Code 167
- Article 7 (General Provisions of the Code of Obligations) 167
- Article 13 (Right to Privacy) of the Swiss Constitution 165
- Article 26 (Exchange of Information) of the OECD's Model Tax Convention on Income and Capital 193, 221, 223
- Article 27 (Economic Freedom) of the Swiss Constitution 165
- Article 28 (Against Infringements) of the Swiss Civil Code 167
- Article 28a (Actions: In General) of the Swiss Civil Code 167
- Article 28b (Violence, Threats, or Harassment) of the Swiss Civil Code 168
- Article 29 (Exceptions to Pre-Trade and Post-Trade Transparency) of the FinMIO 177
- Article 33e (Exploitation of Insider Information) of the SESTA 174
- Article 40 (Exploitation of Insider Information) of the SESTA 174
- Article 40a (Price Manipulation) of the SESTA 177
- Article 46 of the Federal Act on Stock Exchanges and Securities Trading (Stock Exchange Act, SESTA) 173
- Article 47 of the BA 168, 179, 208, 216, 235
- Article 57 (Return and Disposal of Assets) of the United Nations Convention against Corruption (UNCAC) 181
- Article 72 (Forfeiture of Assets of a Criminal or Terrorist Organization) of the SCC 180
- Article 94 (Principles of the Economic System) of the Swiss Constitution 165
- Article 123 (Buyback of Own Equity Shares) of the FinMIO 177
- Article 125 (Content of Buyback Notices) of the FinMIO 177
- Article 126 (Price Stabilization after a Public Placement) of the FinMIO 177
- Article 127 (Other Permissible Securities Transactions) of the FinMIO 177
- Article 128 (Admissible Communication of Insider Information) of the FinMIO 177
- Article 142 (Exploitation of Insider Information) of the FinMIA 175
- Article 143 (Market Manipulation) of the FinMIA 178
- Article 146 (Fraud) of the SCC 172
- Article 147 (Computer Fraud) of the SCC 172

- Article 154 (Exploitation of Insider Information) of the SCC 175, 176
- Article 158 (Criminal Mismanagement) of the SCC 170
- Article 161^{bis} of the SCC (Repealed by No II 3 of the FA of 28 Sept. 2012) 173
- Article 162 (Breach of Manufacturing or Trade Secrecy) of the SCC 170
- Article 260^{quinquies} paragraph 1 (Financing Terrorism) of the SCC 263
- Article 260^{ter} (Criminal or Terrorist Organization) of the SCC 179
- Article 271 (Unlawful Activities on Behalf of a Foreign State) of the SCC 208, 223
- Article 273 (Industrial Espionage) of the SCC 170
- Article 299 (Violation of Foreign Territorial Sovereignty) of the SCC 224
- Article 305^{bis} (Money Laundering) of the SCC 179
- Article 305^{ter} (Insufficient Diligence in Financial Transactions and Right to Report) of the SCC 179
- Article 321 (Breach of Professional Confidentiality) of the SCC 170
- Article 321a (Duty of Care and Loyalty) of the Commercial Code of Obligations 166
- Article 322^{novies} (Accepting Bribes) of the SCC 191
- Article 322^{octies} (Bribery of Private Individuals) of the SCC 191
- Article 322^{septies} (Bribery of Foreign Public Officials) of the SCC 191
- Article 322^{sexies} (Acceptance of an Advantage) of the SCC 191
- Article 322^{ter} (Bribery of Swiss Public Officials) of the SCC 191
- Article 364 (Contractor's Obligations: In General) of the Commercial Code of Obligations 166
- Article 398 (Faithful Performance) of the Commercial Code of Obligations 166
- Artificial Intelligence (AI) 9, 529, 531, 534, 536, 537, 540, 541
- Asian Financial Crisis of 1997 422, 437
- Assets under Management (AuM) 122, 123, 155, 329
- ATM Monitoring Services 38
- Audit 54, 86, 169, 199, 214, 239, 295, 543, 544
- Audit Board 347
- Audit Board-SNB 347
- Auto-filling forms 73
- Automatic Exchange of Information (AEOI) 35, 84, 85, 94, 123, 159, 194, 195, 209–212, 219, 223, 554
- Automation 32, 215, 497, 525, 528, 531, 536, 537, 539–541, 576
- Auto-saving identity details 73
- Available Stable Funding (ASF) 101
- B**
- Bad bank portfolio 382
- Baer, Julius 205
- Bancassurance 318–320
- Banco Santander 132
- Bank for International Settlements (BIS) 78, 80, 82, 87, 177, 255, 257, 342, 347, 356, 360, 373, 380, 390, 396, 403, 412,

- 413, 430, 431, 438, 501,
507–509, 512–515, 521
- Bank for International Settlements
Innovation Hub 78, 79,
396–400
- Banking Act of 1934 (BA) 6, 64,
109, 161, 168, 225, 235, 257,
262
- Banking as a Service (BaaS) 530–532
- Banking Commission 168
- Banking Ombudsman 238
- Banking secrecy 6, 73, 159–162,
168, 170, 194, 196, 203, 211,
225–229, 232–235, 249, 572
- Banking secrecy laws 64, 162, 163,
194, 200, 201, 203, 204, 218,
225, 237, 249
- Banking services 5, 14, 17, 20, 37,
43, 49, 55, 56, 61, 73, 129,
136, 199, 203, 336, 342, 528,
542, 571–573
- Banking structure 66, 108, 110
- Bank of Canada 79, 369, 377, 390
- Bank of England 79, 369, 377, 390
- Bank of Japan 79, 377
- Bank of Sweden (Sveriges Riksbank)
79, 390
- Banque Cantonale Vaudoise 131,
134, 445, 517
- Banque d'Escompte Suisse 230, 231
- Banque de France (BdF) 78, 396,
398–400, 546
- Banque de Genève 134
- Banque Pictet and Cie 131
- Base Erosion and Profit Shifting
Project (BEPS) 95, 210
- Basel III standards 101, 425
- Basler Handelsbank Affair 168, 233
- Basler Kantonalbank 200, 202, 459,
517
- Battle of Marignano 1, 217, 249
- Baumann and Cie. 144, 145
- Bearer share 8, 455, 458–461
- Bergier, Jean François 244
- Berner Kantonalbank 134–136, 445,
477
- Big banks 13, 100, 108–111, 113,
116, 118, 120, 125, 127–136,
149, 151, 240, 244, 318, 329,
378, 380, 381, 517
- Big data 9, 529, 531, 536, 537
- Bilateral Agreements II (European
Union and Switzerland) 195,
554
- Billing and payments 37, 41, 61
- Binance Coin (BNB) 76
- Binding orders 21
- Biometrics 9, 85, 528, 540
- Birkenfeld, Bradley 200, 207, 215,
216
- Bitcoin (BTC) 71, 76, 77, 391, 395,
406, 539, 543
- Blackmail Trojan 69
- bLink 43, 61
- Blockchain 3, 9, 23, 65, 72, 79,
392, 394, 511, 528, 531, 539,
542, 544–546
- Blockchain assets 4, 11
- Blockchain platform 511
- Blockholdings 462, 463
- Block trades 21
- BME Exchange 24, 58
- BNP Paribas 132, 515
- Bolsa de Madrid Exchange (BME)
13, 15, 18–20, 24, 25, 60
- Bolshevik Revolution 229
- Bonds 35, 50, 92, 126, 131, 154,
242, 245, 328, 342, 432, 433,
435, 436, 438–440, 448–452,
455, 457, 458, 462, 470, 471,
473, 478, 479, 481, 501, 545,
575, 578
- Bordier and Cie. 144
- Boston Consulting Group 92
- Botnets 67, 68
- Branches of foreign banks 110, 112,
113, 127–130, 142, 143, 151,
378

- Bretton Woods Agreement 337
 Brexit 3, 81, 82, 99, 261, 376
 Bribery 86, 171, 190, 191, 232
 Brokerage services 131
 Brüning government in Germany 233
 Bulk orders 21
 Business areas 5, 13, 14, 19, 20, 24, 56, 536, 538
 Business cycle 258, 414, 415
 Business model 9, 71, 315, 317, 527, 528, 530–533, 538, 539, 542, 544, 545, 547, 574, 575
 Business unit 14, 17, 18, 20, 37, 571
 Business unit profit 17, 18
 Buy Now, Pay Later 74
 BX Swiss 477
- C**
- Cantonal banks 13, 109–111, 113, 114, 116, 118, 128–131, 133–136, 149, 151, 272, 318, 336, 337, 403, 443, 445, 449, 517, 533
 Cantonal taxes 96, 553, 561
 Cantons 31, 65, 96, 111, 128, 133, 134, 145, 159, 165, 167, 169, 177, 195, 217, 242, 336, 337, 340, 343–345, 378, 387, 403, 416–418, 420, 425, 450, 549, 550, 553, 557–563
 Capital Adequacy Ordinance (CAO) 102, 273, 275, 280, 287, 425, 427, 544
 Capital adequacy requirements 71, 102
 Capital gains tax 10, 552, 558, 559, 562
 Capital market 2, 4, 5, 8, 9, 21, 44, 82, 90–95, 115, 126, 129, 137, 142, 218, 299, 309, 325, 326, 333, 335, 373, 411, 422, 424, 439, 453, 456–459, 461, 471, 477, 497, 556, 564, 573–575, 578
 Capital protection 471, 473, 518–520
 Capital tax 552, 553, 561, 562
 Carlos Salinas de Gortari 184
 Cashless payments 14, 40, 43, 78, 336, 341, 392, 402
 Cash market 20
 Casino-like mindsets 4
 Casino-like gamble 526
 Casino mentality 2
 Categories of technological approaches 9
 Central bank 2, 3, 7, 9, 17, 30, 38, 45, 65, 76–79, 90, 97, 100, 105, 177, 217, 225, 228, 237, 244, 259, 335, 336, 338, 339, 342, 343, 347–350, 354, 355, 357, 362, 364, 365, 369, 370, 372, 376, 377, 381, 383, 386, 388, 389, 391–400, 403–408, 422, 444, 501, 574
 Central bank digital currency (CBDC) 78, 391, 392
 Central Claims Office 238, 270
 Central Counterparty (CCP) 26–29, 44, 45, 47, 52, 258, 524, 577
 Central Offices for Criminal Police Matters 180
 Changing asset and liability structures 7
 Chiasso Affair 213
 China 3, 131, 161, 261, 374, 495, 496, 565
 CH Repo 30, 258
 Cie. Banquiers 144
 Citibank 78, 184, 397
 Citizens' Rights Directive (CRD) 83, 84
 Claims against insurance companies-Holocaust 245
 Claims Authority 237

- Claims Process Guidelines for Insurance Claims 249
- Claims Resolution Tribunal Special Master (CRT Special Master) 245
- Clearing 5, 11, 12, 19, 20, 24–30, 38–40, 43–47, 49, 52, 57, 58, 61, 231, 244, 258, 259, 342, 503, 504, 506, 507, 510, 521–525, 545, 577
- Clearstream Banking Luxembourg Ltd 49
- Clientis Group 137
- Closed-end collective investment scheme 331
- Code of Obligations (CO) 166, 167, 284, 435
- Coins 3, 72, 125, 257, 342, 356, 357, 405
- Collaborative economy 9
- Collateral 19, 26, 28, 119, 348, 351–355, 378, 432, 434, 444, 446, 522–525
- Collateral eligibility policies-SNB 354
- Collateral eligible for SNB repos 354
- Collateralization 445
- Collective Investment Schemes Act (CISA) 264, 265, 268, 275, 289–291, 330–332, 436, 517
- Collective Investment Schemes for Qualified Investors 264
- Commercial and Investment Banks 13
- Commercial Code of Obligations (CCO) 164, 166, 168
- Commoditization 534
- Commodity derivatives 507
- Commodity Futures Trading Commission (CFTC) 504, 524
- Commodity prices 501
- Common Reporting Standards (CRS) 35, 59, 85, 210, 211
- Competence Center for Security 67
- Competitiveness 21, 37, 54, 55, 81, 109, 268, 335, 349, 526, 560
- Concentration risks 103
- Conditional inflation forecasts 366, 371
- Conditional orders 21
- Constitution 1, 6, 159, 165, 338, 341, 440, 549, 572
- Consumer Credit Act (Federal Law on Consumer Credit, FLCC) 260, 263
- Consumer payment behavior 14
- Consumer Price Index (CPI) 366, 380
- Contingent convertible bonds (cocos) 381, 556
- Continuous Linked Settlement (CLS) 351
- Convention 108 on the Protection of Individuals with Regard to Automatic Processing on Personal Data 83
- Convention between the United States of America and the Swiss Confederation for the Avoidance of Double Taxation with Respect to Taxes on Income (Double-Tax Treaty of 1996) 197
- Convention Implementing the Schengen Agreement (CISA) 185, 188, 220, 260, 275
- Conventions 66, 83, 108, 109, 160, 179, 191, 198, 211, 220
- Convergence 5
- Convertible bond 420, 438, 439, 459
- Cooperation 83, 85, 134, 146, 160, 173, 194, 195, 208, 210, 222, 224, 241, 256, 257, 319, 340, 346, 347, 400, 408, 504, 505, 533, 572
- Corporate income tax 552, 559, 560, 562–564

- Corporate strategy 21
- Correlation 339, 364, 365, 457, 458, 488
- Corruption 86, 87, 162, 171, 178, 181, 186, 187, 190, 191, 215
- Corruption (bribery) 6, 161
- Council of States 83, 94, 215, 235, 271
- Countercyclical capital buffers 102, 103, 105, 378
- Counterparty 30, 38, 39, 45, 80, 175, 353, 392, 507, 517, 521, 522, 524, 557
- Counterparty risks 39, 355, 447, 503, 506, 545
- Country-by-Country (CbC) Reports 210
- Coupon 234, 342, 434, 439, 519, 554
- Coutts Bank 189
- Covered bond 423, 448, 575
- COVID-19 3, 14, 104, 105, 190, 212, 298, 377, 378, 417, 428, 473, 497
- COVID-19-crisis 428
- COVID-19 Joint and Several Guarantee Act 105
- COVID-19 loans 428, 429
- COVID-19 pandemic 14, 50, 99, 104, 116, 190, 261, 377, 378, 383, 407, 411, 415, 417, 428, 440, 452, 497, 527, 529, 574, 575
- COVID-19 Refinancing Facility (CRF)-SNB 105, 378, 429
- Credit Agricole 132
- Credit checks 73, 429
- Credit lines 115, 131
- Credit ratings 74, 138, 354, 370, 422, 423, 444, 501, 516, 517
- Credit risk 9, 45, 423, 425, 429, 507, 516, 518, 519, 525
- Credit Suisse 13, 64, 78, 100, 103, 108, 111, 125, 131–133, 180, 200, 203, 204, 213, 218, 231, 235, 245, 257, 315, 317–319, 329, 378, 380, 397, 399, 400, 439, 444, 446, 462, 478, 490, 494, 517
- Credit Suisse Switzerland Ltd 13, 108, 111, 113, 133, 256
- Credit transactions-SNB 352, 353
- Criminal mismanagement 86, 171
- Crisis Organization 67
- Cross-agency coordination 504
- Cross-selling 9, 318
- Crowd-funding 70
- Crypto assets 539, 543–547, 575
- Crypto-banking 77
- Cryptocurrencies 3, 7, 20, 46, 65, 68, 70, 71, 74, 77, 78, 391, 406, 408, 523, 539, 546, 547, 575
- Crypto-jacking 67, 68
- Crypto products 20, 46
- Crypto-structured products 5
- Crypto Valley 70
- Currency data 31
- Currency peg 341, 375
- Currency risk 344, 349, 375, 384, 389, 413, 421, 574
- Custodian 28, 29, 43, 48, 110, 133, 326, 327, 331, 332, 460, 544
- Custody 5, 12, 19, 22, 23, 28, 43, 48, 49, 72, 108, 110, 122, 123, 146, 172, 259, 342, 511, 542, 543, 545, 546
- Custody Cover Account-SNB 348, 352
- Custody services 19, 28, 131, 348, 542
- Customer identity verification 73
- Customized contracts 8
- Cyberattacks 3, 66–68, 70, 392, 404
- Cybercriminals 66, 68
- Cybersecurity 65–67, 69, 540, 573
- Cyprus 261, 370, 565

- D**
- Data analytics 9, 528, 531
 - Data feeds 32, 34
 - Debt brake 105, 414–418, 427, 440, 448
 - Debt instruments 5, 9, 23, 126, 318, 411, 412, 420, 430, 433, 437, 444, 452, 511, 546, 555, 556, 577
 - Debt markets 8, 411–413, 420, 423, 424, 451–453, 510, 512, 575
 - Decentralized Finance (DeFi) 531, 539
 - Default risk 45, 80, 392, 402
 - Delisting 8, 22, 464, 479
 - Delivery-versus-Payment (DvP) 29, 46, 48, 355, 399, 400
 - Denial of service (DoS) 67, 68
 - Department of Finance (FDF) 269, 340, 521
 - Department of Foreign Affairs 191
 - Deposited assets class 246, 248
 - Deposit insurance 66, 110, 280
 - Deposits 38, 40, 41, 45, 71, 72, 79, 97, 100, 102, 109–111, 118, 119, 123, 124, 131, 134–138, 144, 145, 154, 159, 178, 182, 190, 213, 228, 230, 231, 236, 239, 240, 242, 253, 258, 259, 262, 317, 342, 348, 352–354, 356, 357, 359, 374, 376, 377, 393, 394, 399, 400, 402, 403, 405, 461, 507, 517, 536, 538
 - Deregulation 108, 314, 320, 497, 503, 576
 - Derivative contracts 502, 505, 507
 - Derivative markets 8, 26, 501–503, 505, 507, 509, 511, 525, 576
 - Derivative purchases and sales-SNB 353
 - Derivatives 5, 8, 9, 11, 24, 81, 116, 126, 127, 131, 140, 156, 172, 174–176, 188, 209, 266, 267, 286, 331, 332, 352, 353, 382, 470, 497, 501–510, 512–515, 518, 520–526, 556, 573, 576, 577
 - Deutsche Börse AG (DTB) 49, 471, 510, 523
 - Diem 391
 - Digital asset 12, 13, 23, 24, 71, 396, 397, 511, 542, 544–547, 571, 574, 575
 - Digitalization 2, 3, 7, 9, 66, 68, 95, 108, 147, 271, 318, 390, 527–529, 531, 533, 534, 536, 537, 539–541, 547, 573, 574
 - Digital money 65, 66, 76
 - Digital payments 15, 41
 - Digital player 532, 533
 - Digital tokens 79, 394, 406
 - Digital transformation 44, 527, 528, 540, 547, 574
 - Dilemma 4, 179, 208, 235, 360
 - Direct democracy 8, 84, 335, 573
 - Direct investment 7, 87, 335
 - Directive on Information Relating to Corporate Governance (DCG) 469, 470
 - Disability Insurance (DI) 299, 302–304, 323
 - Discounting 131
 - Display and Delivery Capabilities 33, 60
 - Distributed denial of Service (DDoS) 68
 - Distributed Ledger Technology (DLT) 23, 44, 70–72, 172, 175–177, 266, 392, 395–397, 400, 537–547, 575
 - Distribution Reserve-SNB 343, 345, 372, 384, 385
 - Dividend 33, 36, 108, 198, 199, 207, 209, 329, 336, 343, 385, 458, 464, 478, 486–488, 490, 491, 523, 552, 561, 563
 - DLT platforms 5, 56, 65, 70, 80, 175, 392, 394, 395, 397, 398

- DLT Securities 544
- DLT Trading Facilities License 72
- Dodd-Frank Wall Street Reform and Consumer Protection Act 503
- Domestic banks 64, 92, 100, 110, 153, 230, 326, 355, 378, 379, 404, 421, 517
- Domestic market 309, 315, 329, 383, 407, 427, 495, 505
- Domestic Systemically Important Banks (D-SIBs) 100, 104, 257
- Dormant accounts 237–240, 242, 244, 247, 249, 270
- Dormant accounts controversy 161, 236, 237, 249, 270
- Double-spending 395
- Double Taxation Agreement (DTA) 220, 222, 224, 433, 554
- Double Tax Treaties 197, 201, 554, 563
- Dow Jones Industrial Average (DJIA) 485
- Draghi, Mario 3
- Dual criminality 173, 222, 223
- E**
- Earnings Before Interest and Taxes (EBIT) 16
- Earnings before Interest, Taxes, Depreciation, and Amortization (EBITDA) 14, 16
- Earnings before Taxes (EBT) 16
- eBill 17, 37, 41, 42, 55, 61
- Economiesuisse 469
- Ecosystem 80, 315, 318, 400, 402, 530–534, 546, 547, 571, 573–575
- Effective tax rate 554
- Efficiency 3, 7, 12, 23, 26, 29, 43, 44, 55, 70, 78, 80, 108, 126, 210, 241, 248, 313, 342, 393, 396, 400–402, 408, 503, 506, 509, 512, 524, 572
- Egmont Group of Financial Intelligence Units 172
- Eizenstat report 242, 243, 245
- Eizenstat, Stuart 243, 244
- Electricity derivatives 20
- Electronic payments 38, 258
- Electronic transaction platform 503
- Eligible counterparties-SNB 354
- Eligible settlement currency 17
- Elmer, Rudolf 202, 207, 215, 216
- Embedded finance 9, 65, 73–76, 529, 530, 547
- Emergency Liquidity Assistance-SNB 355
- Employee structure 13, 15
- End-user exemptions 504
- Enlarged Governing Board 347
- eNotes 9, 23, 55, 511, 546
- Entris Holding AG 137
- Environmental, social, and governance (ESG) 19, 34, 36, 60, 65, 87–93, 96, 449, 487, 488, 523
- Environmental sustainability 7, 342, 408
- Equity 15, 21, 26, 35, 36, 43, 49, 65, 71, 89, 94, 100–103, 111, 116, 127, 139, 146, 154, 156, 177, 207, 209, 228, 254, 258, 289, 306, 308, 322, 343, 369, 375, 376, 378, 381, 383, 386, 418, 420, 422, 428, 430, 437–439, 443, 447, 455–465, 468, 469, 471, 473, 475, 477–480, 484, 485, 487, 490, 495, 496, 498, 501, 507, 509, 510, 515, 517, 518, 520, 523, 525, 543, 544, 546, 555–557, 559, 561, 564, 575–577
- Equity-linked derivatives 508
- Equity market 49, 50, 126, 455, 456, 465, 475, 575

- Equity-SNB 372, 375, 376, 385, 386
 - ESG Data and Services 34
 - ESG regulatory data 19, 35, 60
 - Esisuisse 109, 110, 140
 - Estate tax 554
 - Estera and Asiaciti Trust 205
 - Ethereum (ETH) 76, 539
 - EU Directive on Alternative Investment Fund Managers (AIFMD) 35, 59, 332
 - EU Directive on Taxation of Savings Income in the Form of Interest Payment 194
 - Eurex 8, 510, 522–524
 - Eurex Repo GmbH 525
 - Eurobonds 48, 126, 418, 448, 555
 - EuroCCP 26, 27, 47, 58
 - Euroclear 17, 29, 48, 49, 217
 - Euroclear Bank 47–49
 - Euro crisis 3, 428, 496
 - Eurofima 431
 - Euromarket 412, 420
 - European Central Bank (ECB) 3, 79, 87, 177, 337, 369, 371, 374, 377, 389, 525
 - European Convention on Judicial Assistance in Criminal Matters 224
 - European Convention on Laundering, Search, Seizure and Confiscation of the Proceeds of Crime 224
 - European countries 17, 64, 97, 168, 192, 194, 461, 541
 - European Court of Justice (ECJ) 84
 - European debt crises 3, 64, 99, 101, 127, 175, 383
 - European Economic Area (EEA) 83, 314
 - European Exchange Rate Mechanism 363
 - European Market Infrastructure Regulation (EMIR) 520, 522, 524
 - European Union (EU) 24, 32, 35, 38, 40, 75, 81–84, 94, 101, 194–196, 212, 217, 222, 261, 269, 271, 314, 316, 323, 327, 331–333, 371, 376, 424, 425, 435, 469, 501, 522, 554, 564–569
 - European Union Savings Directive (EUSD) 194
 - EuroSIC 37–40, 61
 - EU's restrictions 17
 - EU Sustainable Finance Action Plan 87
 - Excess cash 15
 - Exchange data 66, 174
 - Exchange rates 2, 7, 99, 124, 231, 257, 337, 344, 349, 355, 357–361, 365–367, 372, 374–376, 379, 384, 390, 407, 408, 421, 422, 501, 509, 574
 - Exchange rate targeting 375
 - Exchange-traded 8, 503, 505, 506
 - Exchange-traded financial derivatives 5, 8
 - Exchange-traded funds (ETFs) 5, 11, 12, 20, 36, 47, 48, 50, 56, 57, 455, 478, 481, 483–485, 496, 514
 - Exchange-traded products (ETPs) 20, 46, 56, 57, 481, 484
 - Exchange-traded-products (ETPs) 503
 - Execute trades 12, 53
- F**
- Facebook 74, 391, 530, 533
 - Factoring 131, 182
 - Falciani, Hervé 202, 207, 215, 216
 - Fascism in Italy 230

- Federal Act on Banks and Savings
Banks (i.e., Banking Act of
1934) 168, 262
- Federal Act on Collective Investment
Schemes (Collective
Investment Schemes Act,
CISA,) 264, 328, 331
- Federal Act on Combating Money
Laundering and Terrorist
Financing (Anti-Money
Laundering Act, AMLA) 181,
182, 262, 293, 294
- Federal Act on Data Protection
(FADP) 83, 85, 86, 271, 279
- Federal Act on Financial Institutions
(*Financial Institutions Act*,
FinIA) 267
- Federal Act on Financial Institutions
(Financial Institutions Act,
FinIA) 52, 81, 188, 267, 282,
286, 291, 293
- Federal Act on Financial Market
Infrastructures and Market
Conduct in Securities and
Derivatives Trading (Financial
Market Infrastructure Act,
FinMIA) 22, 26, 169, 175,
266, 286, 521
- Federal Act on Financial Services
(Financial Market Services Act,
FinSA) 81, 189, 268, 293, 518
- Federal Act on International Mutual
Assistance in Criminal Matters
(IMAC) 220, 221, 224
- Federal Act on Stock Exchanges and
Securities Trading (Stock
Exchange Act, SESTA) 173
- Federal Act on the Adaptation of
Federal Law to Developments
in Distributed Ledger
Technology 542
- Federal Act on the International
Automatic Exchange of
Information in Tax Matters
(AEOIA) 6, 211
- Federal Act on the Reduction of
Greenhouse Gas (CO2 ACT)
92
- Federal Act on the Swiss Financial
Market Supervisory Authority
(Financial Market Supervision
Act, FINMASA) 54, 221, 252,
253, 260, 265, 266, 272, 273,
276, 295
- Federal Act on the Swiss National
Bank (National Bank Act,
NBA) 336
- Federal and cantonal stamp taxes
555
- Federal Bond Issues 30, 258
- Federal Constitution 64, 165, 261,
262, 265, 267, 272, 273, 337,
338, 387, 549
- Federal Council 81, 104, 105, 110,
215, 272, 337–339, 346, 347,
380, 381, 416, 521, 522, 554,
556
- Federal Data Protection and
Information Commissioner
(FDPIC) 85, 86
- Federal Department of Finance
(FDF) 191, 195, 269, 340
- Federal government 2, 8, 65, 105,
192, 205, 227, 231, 235, 238,
242, 253, 337, 340, 387, 417,
418, 427–430, 440, 441, 457,
497, 549, 550, 552, 558, 574
- Federal income tax income 202,
559, 560
- Federal Office for the Environment
(FOEN) 90
- Federal Office of Private Insurance
(FOPI) 265
- Federal Reserve 239, 377
- Federal stamp taxes 418, 557
- Federal Tax Administration (FTA)
211

- Federal Tax Law 550
- Federal Technical School (ETH)
Zurich 1, 13, 23, 37, 63, 70,
125, 566
- Federal withholding tax 10, 552
- Fiduciary accounts 116, 120, 123,
124, 131, 142
- Finance Center Switzerland 5, 11,
21, 41, 43
- Finance dashboards 73
- Financial Action Task Force (FATF)
183, 190, 205, 255
- Financial crime 76, 81, 86, 172,
393, 394, 402, 404
- Financial derivatives 116, 319, 522
- Financial digitalization 527, 574
- Financial disasters 4
- Financial evolution 5
- Financial information 5, 17, 19, 21,
24, 31–34, 37, 56, 73, 75,
162, 167, 172, 187, 196, 226,
249, 571
- Financial infrastructure 12, 55, 403,
510, 571
- Financial institution 4–7, 9, 13, 20,
26, 32, 37–40, 42, 43, 45, 55,
63, 65, 66, 69, 71, 73, 74,
77–80, 82, 86–89, 93, 97, 98,
100–102, 104, 105, 108–111,
116, 118, 128, 131–133,
136–140, 142, 144, 145, 147,
162, 184–186, 188, 190, 194,
199, 207, 208, 211, 218,
225–227, 230, 237, 246,
252–254, 256, 257, 265, 267,
269–271, 280, 283, 287, 290,
295, 297, 300, 317, 333, 340,
341, 350–352, 354, 355, 369,
390, 393–396, 398, 402, 403,
442, 448, 468, 505, 513, 517,
518, 528, 529, 538, 572, 573,
577
- Financial Institutions Act (FinIA)
81, 188, 256, 260, 267, 274,
275, 277, 282, 286, 289, 291,
293, 331, 332
- Financial Institutions Ordinance
(FinIO) 274–276, 283, 286,
290–292
- Financial instruments 9, 11, 31, 33,
49, 72, 89, 124, 126, 268,
270, 279, 292, 331, 400, 438,
453, 456, 471, 473, 517, 526,
571, 575
- Financial Market Auditing
Ordinance (FINMA-PV) 277,
295
- Financial Market Infrastructure Act
(FinMIA) 72, 175, 260, 266,
275, 286, 330, 332, 467, 577
- Financial Market Infrastructures and
Market Conduct in Securities
and Derivatives Trading
(Financial Market
Infrastructure Ordinance,
FinMIO) 177, 522
- Financial Markets Supervisory
Authority (FINMA) 6, 13, 22,
23, 30, 46, 51, 52, 54, 71, 72,
89, 90, 101, 104, 112, 133,
134, 136, 138, 139, 145, 146,
174, 178, 182, 186, 187, 189,
190, 201, 214, 221, 251–257,
259, 264–272, 288, 293, 324,
326–328, 340, 377, 378, 381,
406, 425, 428, 444, 447, 499,
519–522, 542, 544, 545, 574
- Financial services 18, 32, 46, 48, 51,
70, 71, 73–75, 82, 106–108,
121, 131, 144, 147, 189, 253,
268–270, 272, 279, 292, 318,
346, 498, 527–534, 536, 540,
541, 547, 575, 576
- Financial Services Act (FinSA) 35,
59, 81, 189, 252, 260,
268–270, 273, 276, 277, 279,
291, 293, 331, 332

- Financial Services Ordinance (FinSO) 273, 276, 279, 292, 544
- Financial stability 80, 81, 336, 340, 341, 343, 355, 384, 393, 401, 402, 404, 407, 408, 540
- Financial Stability Board (FSB) 82, 255, 257, 342, 347, 401
- Financial system 2, 4–7, 11, 24, 30, 38, 56, 64, 65, 77, 81, 93, 100, 105, 115, 145, 161, 175, 203, 226, 228, 234, 251, 257, 259, 261, 262, 271, 272, 280, 287, 343, 369, 370, 380, 381, 390, 393, 394, 402, 403, 405, 408, 429, 503, 521, 526, 575
- Financial Technology (FinTech) 7, 9, 23, 65, 66, 70–72, 74, 253, 255, 390, 408, 467, 528, 534, 536–542, 547, 575
- Financing terrorism 6, 86, 161, 162, 171, 185, 189, 572
- Finanzplatz Schweiz 5, 11, 12, 21, 43, 56, 571
- Fininfo 32
- FINMA Accounting Ordinance (FINMA-AO) 274, 282
- FINMA Anti-Money Laundering Ordinance, AMLO-FINMA) 182, 186, 187, 277, 294
- FINMA audit firms 256
- FINMA Banking Insolvency Ordinance (BIO-FINMA) 274, 275, 281, 288
- FINMA board of directors 254, 255, 266
- FINMA Code of Conduct 266
- FINMA Collective Investment Schemes Bankruptcy Ordinance (CISBO-FINMA) 276, 291
- FINMA Collective Investment Schemes Ordinance (CISO-FINMA) 276, 290
- FINMA divisions 255, 256
- FINMA Financial Institutions Ordinance (FinIO-FINMA) 274, 276, 283, 291, 292
- FINMA Financial Market Infrastructure Ordinance (FinMIO-FINMA) 275, 288, 522
- FINMA Foreign Banks Ordinance (FBO-FINMA) 274, 281
- FINMA Insurance Bankruptcy Ordinance (IBO-FINMA) 285
- FINMA-licensed and regulated financial market infrastructure (FMI) 23, 511
- FINMA Ordinance on Data Processing 271, 273, 278, 279
- FINMA Ordinance on the Financial Market Supervision Act 266, 278
- FINMA Ordinance on the Levying of Supervisory Fees & Levies (FINMA-GebV) 273
- FINMA Organizational Regulations 266
- FINMA Personnel Data Ordinance 273, 279
- FINMA Personnel Ordinance 273, 279
- FINMA's organizational structure 254
- FINMA's Chief Executive Officer (FINMA CEO) 255
- Firm orders 21
- First pillar 299, 300, 323
- Fiscal policy 414, 440
- Fixed-income 95, 517, 519, 524
- Flight to safety 376
- Fonseca, Mossack 205
- Foreign Account Tax Compliance Act (FATCA) 35, 198, 207–209, 221
- Foreign Bank and Financial Accounts (FBAR) 198

- Foreign banks 13, 112, 114, 117, 124, 128, 129, 141–143, 149, 199, 207, 211, 253, 556
- Foreign bond 108, 429, 430, 433, 480, 552
- Foreign-controlled banks 110, 112, 113, 117, 128–130, 140–143, 151, 253, 448
- Foreign currency 131, 342, 344, 351, 361, 371–373, 384, 390, 407, 408, 420, 574
- Foreign exchange 74, 97, 108, 116, 120, 127, 131, 156, 174, 261, 342, 343, 349, 351, 356, 360, 361, 371–373, 375, 377, 380, 384, 385, 387, 390, 400, 407, 420, 483, 492, 507–509, 512–515, 517, 518, 520, 523
- Foreign exchange market purchases, sales, and swaps 349
- Foreign market 147, 221, 271, 349, 457, 477, 505
- Foreign shares 47, 462, 479–481, 483, 484, 492, 494, 498, 576
- Forfeiting 131
- Forwards 4, 23, 44, 55, 125, 131, 171, 197, 209, 318, 349, 350, 353, 421, 509, 512, 513, 515, 525, 561, 563
- France's Digital Asset Registry (DAR) 398, 399
- Franco-Prussian War 217
- Fraud Prevention Agreement 220
- Frauds against seizure 171
- Free-market ideology 503
- French kings 164
- Fund Data and Services 33
- Fund for Needy Victims of the Holocaust/Shoa (the Swiss Humanitarian Fund, aka, Holocaust Fund) 247
- Funds 1, 7, 8, 20, 27, 30, 41, 46, 49, 63, 68, 71, 73, 75, 77, 89, 91, 94, 110, 117, 119, 123, 124, 126, 138, 178, 184–187, 190, 194, 204, 207, 213, 231, 232, 237, 238, 240, 242, 243, 245–247, 256, 268, 281, 284, 297–299, 302, 304, 306, 317, 319, 320, 326–329, 331, 332, 337, 351, 352, 355, 356, 378, 385, 400, 404, 408, 414, 421, 432, 434, 447, 456, 460, 464, 467, 511, 532, 558, 572, 577
- Futures 125, 209, 472, 507, 510, 523
- G**
- G20-FSB Task Force on Climate-Related Financial Disclosures (TCFD) 89
- Gadhafi, Moammar 184
- Gamification 9, 528
- Gbagbo, Laurent 184
- Gearing 358, 458
- Gender Equality 488
- General Clearing Members 26, 45
- General collateral (GC) 525
- General Data Protection Regulation 83
- Global Corporate Actions Data and Services 32
- Global Financial Markets Association (GFMA) 92
- Global inflation 3, 379
- Global minimum tax (GMT) 65, 95, 96
- Global minimum tax-Pillar I 95, 96
- Global minimum tax-Pillar II 95
- Global Reporting Initiative (GRI) 90
- Global systemically important banks (G-SIBs) 100, 257
- Going private 8, 464
- Gold 2, 125, 244, 345, 384, 386–390, 395
- Gold-exchange standard 2

- Gold holdings - SNB 342, 344,
387–390
- Goldman Sachs 78, 397, 517
- Gold trading 116, 120, 125
- Google 74, 467, 530, 533
- Governance 5, 12, 80, 185, 188,
252, 393, 469, 470, 484
- Government bond market 440
- Government debt 335, 413, 417,
420, 442
- Graber Motion 7
- Gray list of the OECD 223
- Great Council of Geneva 159
- Great Depression 64, 168, 229, 230
- Great Recession 64, 97, 99, 101,
115, 175, 261, 369, 370, 383
- GRECO 191
- Greece 97, 261, 298, 370, 371, 374,
566
- Green bond 89, 449, 450
- Gross domestic product (GDP) 7,
106, 132, 230, 309, 325, 345,
363, 374, 379, 380, 385, 414,
416, 417, 441, 455, 467,
496–498, 550, 555, 576
- Gross positions 504
- Gross size 506, 507
- Group Net Profit 16
- Group Net Profit Adjusted for the
Effects from the Participation
in Worldline 16
- Group of 7 (G-7) 183
- Guidelines of the Swiss National
Bank on Monetary Policy
Instruments 347–349, 352
- Guidelines on the Combating and
Prevention of Money
Laundering 180
- Guidelines on the Treatment of
Dormant Accounts, Custody
Accounts, and Safe-Deposit
Boxes Held in Swiss Banks 238
- Gutzwiller, E. 144
- H
- Hague Convention 222, 224
- Health insurance 300, 311, 323, 533
- Hedging 137, 344, 384, 389, 501,
504, 505, 576
- Herriot government in France 233
- Hitler, Adolf 64, 168, 229, 230,
232, 233, 242
- Holocaust 236, 237, 239, 241–243,
246–248
- Hong Kong 71, 94, 210, 565
- Horizontal harmonization 550
- House of cards 506
- HSBC Holdings 132
- HSBC Private Bank (Suisse) Geneva
202, 207
- Human rights 160, 162, 224, 342
- Hybrid securities 103, 438
- Hypothekarbank Lenzburg 78, 397
- I
- Illiquidity 104, 115, 403
- Impairment charge 17
- Impossible Trinity 349
- Incentive Award 248
- Income statement 14, 16, 143, 146,
192, 340
- Income tax 17, 203, 209, 220, 549,
554, 558, 560, 563, 564
- Income verification 73
- Incubators 71
- Independence 145, 189, 252, 265,
268, 337–339, 357, 376, 386,
408, 573
- Independent Asset Managers (IAMs)
188, 267, 268
- Independent Commission of
Eminent Persons (ICEP)
239–242
- Independent Commission of
Experts: Switzerland–Second
World War (ICE) 243
- Indicative orders 21

- Indices 19, 31, 34–36, 46, 60, 91, 156, 377, 471, 481, 484–489, 496, 504, 515, 523
- Indirect investment 484
- Industrial espionage 3
- Industrial revolution 1, 2
- Inflation 3, 7, 65, 78, 99, 165, 226, 227, 305, 335, 339, 341, 349, 359–368, 370, 374, 379, 380, 406, 407, 411, 428, 452, 453, 474, 491, 573, 574
- Inflationary threats 4, 362
- Information duty 435, 436
- Infrastructure services 21, 37
- Ingenico 17
- Inheritance tax 553
- Initial Coin Offerings (ICOs) 72
- Initial Public Offering (IPO) 8, 18, 46, 56, 463, 464, 467
- Innovation 4, 5, 12, 24, 74, 78, 80, 84, 313, 365, 392, 400, 402, 408, 422, 436, 471, 527, 528, 530, 533, 534, 539–541, 544, 546, 561, 575, 578
- Insider trading 6, 86, 161, 162, 171–174, 177, 286, 332, 521
- Insolvency 100, 104, 110, 253, 262, 280, 287, 386, 516
- Institutional Framework Agreement (InstA) 83, 84
- Institutional investors 7, 55, 121, 269, 297, 299, 333, 444, 467, 507, 556, 577
- Insurance 5, 8, 9, 30, 70, 74, 106, 109, 110, 139, 140, 206, 247, 248, 255, 264, 267, 268, 270, 271, 284, 298–300, 304, 308–320, 323, 324, 333, 475, 490, 516, 529–531, 533, 535, 540, 547, 550, 557, 575
- Insurance Awards 248
- Insurance company 1, 2, 4, 5, 7, 54, 70, 91, 100, 182, 185, 188, 206, 245, 248, 249, 252, 255, 264, 265, 267, 269, 284, 285, 297, 299, 300, 303, 306, 309–320, 323, 324, 329, 333, 342, 351, 528, 530, 533, 534, 541, 545–547, 556, 574, 577
- Insurance Contract Act (ICA) 270, 274, 284
- Insurance premium 94, 418, 555, 557
- Insurance Supervision Act (ISA) 260, 264, 274, 284, 285
- Insurance Supervision Ordinance (ISO) 274, 275, 284, 285, 570
- InsurTech 541, 542, 547, 575
- Integrated cybersecurity solutions 70
- Integrated insurance solutions 70
- Integrated risk management solutions 70
- Interest on banks' sight deposits-SNB 352
- Interest rates 7, 65, 93, 97, 99, 119, 124, 126, 127, 147, 165, 174, 226, 257, 261, 263, 312, 325, 335, 344, 350–353, 355–359, 363, 365, 366, 369, 370, 376, 377, 403, 421, 425, 428, 439, 442, 452, 471, 501, 507–509, 512–514, 520, 523–525
 - negative 65, 97, 105, 374
 - rising 99
- Internal bank rules 163, 164
- International agencies 32
- International Center for Asset Recovery (ICAR) 181
- International Central Securities Depository (ICSD) 28, 49
- International Commission on Holocaust Era Insurance Claims (ICHEIC) 248
- International Committee of the Red Cross 237, 241
- International competition 4, 11, 311

- International Consortium of Investigative Journalists (ICIJ) 205
 - International expansion 17, 21
 - International financial flows 4
 - Internationalization 66, 108, 127, 315
 - International trade flows 231
 - Internet of Things (IoT) 66, 541
 - Interoperability 70, 80, 393, 395–397, 401–403, 408
 - Intraday (liquidity) facility 348, 351
 - Invasion 65
 - Investment banks 5, 112, 140, 142, 399, 573
 - Investment fund 35, 37, 50, 88, 302, 319, 326, 327, 329, 330, 444, 478, 484, 496
 - Investment Policy Guidelines of the Swiss National Bank 347, 348
 - Investment products 312, 518, 519
 - Investor Protection Services 35, 59
 - Ireland 261, 298, 370, 371, 566, 569
 - Issuance 252, 265, 350, 351, 395, 397–399, 405, 420, 421, 424, 433, 436, 438, 439, 447, 477, 544, 545, 552, 555–557
 - Issuer 21, 22, 28, 37, 41, 71, 78, 174, 176, 337, 351, 354, 406, 412, 423–425, 427, 428, 432, 436, 449, 450, 467–470, 477, 484, 511, 514, 516–519, 543, 544
 - Italy 194, 228, 249, 261, 298, 363, 370, 371, 376, 390, 423, 567
- J**
- Jewish World Congress 237
 - John Doe Summons 200
 - Joint-stock company 1
 - Judicial assistance 161, 173, 219, 221–224
 - Julius Baer (Switzerland) 131
 - Junz, Helen 233
- K**
- Key product areas 9, 536, 537, 541
 - Know-Your-Customer (KYC) 213, 214, 253, 406, 504
- L**
- Laissez-fair 503
 - Large orders 21, 269
 - Latin Currency Union 2
 - Law on Distributed Ledger Technology (DLT-Law) 72
 - Law on Occupational Benefit (LOB) 303, 305, 308
 - LCH Ltd 26, 27, 58
 - Ledger-based securities 72, 543
 - Leverage 36, 184, 230, 381, 407, 423, 458, 464, 467, 471, 472, 506, 518–520
 - Leverage ratio 102, 103, 253, 458
 - Liabilities 71, 101, 109, 111, 114, 116, 118–123, 127, 128, 134, 137, 144, 154, 170, 179, 180, 206, 253, 258, 262, 265, 266, 268, 284, 299, 301, 304, 317–319, 323–325, 344, 348, 356, 357, 359, 382, 386, 395, 399, 405, 407, 414, 441, 443, 447, 448, 453, 552, 557
 - Libra White Paper 391
 - Licensed bank 28, 30
 - Liechtenstein 39, 40, 146, 162, 200, 213, 228, 378, 407, 485, 486, 541, 567
 - Life insurance 196, 208, 285, 308, 309, 312, 314, 318–320, 557
 - Limited partnership 144, 264, 331, 382
 - Limited Qualified Investor Fund (L-QIF) 264, 332

- Liquidity Coverage Ratio (LCR)
 - 101, 102, 253
 - Liquidity Ordinance (LiqO) 101,
 - 274, 281
 - Liquidity requirements 65, 100,
 - 132, 258, 304, 362, 380, 408
 - Liquidity risks 30, 80, 392, 393, 447
 - Liquidity Shortage Financing Facility
 - 30, 258
 - Listing 8, 20, 22, 46, 49, 463, 464,
 - 466–468, 470, 471, 477, 479,
 - 481, 483, 484, 492–495, 498,
 - 576
 - Listing and Enforcement
 - Department 22
 - Lit-book 20
 - Lombard Odier (Switzerland) 131
 - London 71, 125, 319, 418, 555, 556
 - London Declaration 236
 - London Interbank Offered Rate
 - (Libor) 97, 364, 366–368,
 - 370, 372–376, 507
 - London Stock Exchange (LSE) 29,
 - 46, 495
 - Looted Assets Class 246–248
 - LSV+ and BDD 37, 42, 61
- M**
- M1 361, 362, 365, 380, 388
 - M2 361, 362, 365, 380, 388
 - M3 361, 362, 380, 388
 - Machine learning 9, 529
 - Malware 67–69
 - Management structure 19
 - Mandatory occupational pension
 - scheme 7
 - Marcos, Ferdinand 184
 - Margin 17, 18, 26, 27, 45, 47, 65,
 - 126, 379, 506, 507, 517, 534
 - Margin accounts 504
 - Margining requirements 504
 - Margin loans 506
 - Market and price manipulation 6,
 - 161, 177
 - Market Data and Services 33
 - Market demand 21
 - Market infrastructure 12, 23, 30, 37,
 - 43, 188, 252, 286, 521, 547,
 - 573, 575
 - Market manipulation 174, 177, 178,
 - 286, 332, 521
 - Market or price manipulation 86
 - Market risks 297, 425
 - Markets and tradable financial
 - instruments 49
 - Markets in Financial Instruments
 - Directive II (MiFID
 - II)/Markets in Financial
 - Instruments Directive
 - (MiFID)-European Union 32,
 - 82, 269
 - Markets in Financial Instruments
 - Regulations (MiFIR)-European
 - Union 82, 83, 261
 - Market supply 21
 - Market surveillance and enforcement
 - 13
 - Maturity 297, 317, 349, 370, 371,
 - 377, 378, 398, 414, 418, 420,
 - 423, 432, 433, 438, 441, 443,
 - 446, 447, 470, 505, 506, 516,
 - 521, 555
 - Maximum deductible amount 558
 - Medium-to-long investments 8
 - Memorandum of Understanding
 - (1982) 173
 - Memorandum of Understanding
 - (2011) 340
 - Merger 9, 12, 17, 33, 55, 113, 129,
 - 133, 172, 245, 318, 456, 469,
 - 502, 556
 - Merger Act (MerA) 469
 - Meta Platforms Inc 391
 - Mexican Tequila Crisis 363
 - Minimum reserve requirements 98,
 - 356, 357, 359

- Minimum reserves 137, 356
 Minimum threshold 21
 Misdemeanors 87, 171, 174, 176,
 179, 183, 192, 197
 Model II agreement 208
Model Tax Convention of the OECD
 221
 Monetary base 3, 30, 97, 99, 119,
 338, 344, 349, 350, 353, 359,
 361–365, 370, 371, 373, 386,
 395, 398, 403, 407, 420
 Monetary policy instruments 7, 337,
 350
 Monetary targets-SNB 7, 358
 Money laundering 6, 81, 86, 87,
 136, 160–162, 171, 172,
 178–183, 185–187, 189, 190,
 193, 196, 205, 206, 252, 263,
 294, 393, 394, 404, 572
 Money Laundering and Terrorist
 Financing (Anti-Money
 Laundering Act, AMLA) 181,
 185, 187, 214
 Money Laundering Reporting Office
 of Switzerland (MROS) 171,
 172, 182, 190, 192
 Money supply 257, 337, 349,
 357–365, 370, 372, 380, 388,
 403, 405, 407, 574
 Monitor 13, 22, 36, 40, 53, 86,
 138, 162, 180, 185, 186, 188,
 190, 191, 214, 235, 255, 267,
 278, 340, 341, 352, 377, 395,
 397, 444–446
 Mortgage bond 147, 261, 281, 288,
 320, 447, 557, 575
 Mortgage Bond Act (PfG) 260, 261,
 277, 295
 Mortgage Bond Bank of the Swiss
 Mortgage Institutes 147
 Mortgage Bond Institute of the
 Swiss Cantonal Banks 147
 Mortgage Bond Ordinance (PfV)
 277, 295
 Mortgage funding institutes 147
 Mortgages 31, 74, 92, 101, 105,
 111, 118, 119, 131, 134–139,
 141, 147, 252, 261, 265, 306,
 320, 329, 369, 377, 378, 381,
 425, 442–446, 448, 473, 533
 Mubarak, Hosni 184
 Multi Commodity Exchange of
 India Ltd. (MCX) 125
 Multilateral Convention on Mutual
 Administrative Assistance in
 Tax Matters (AEOI) of the
 OECD 160, 196, 209, 220,
 223
 Municipalities 336, 353, 416, 420,
 425, 549, 550, 553, 557, 559,
 560
 Municipal taxes 9, 549, 561
 Mutual assistance 219–221
 Mutual fund 4, 7, 56, 57, 269, 297,
 301, 326, 328, 331, 418, 555,
 556

 N
 National Bank Act 336, 434, 435
 National Bank Ordinance
 (Ordinance to the Federal Act
 on the Swiss National Bank,
 NBO) 522
 National Council 79, 83, 94, 235,
 271, 387
 National Socialist Party 64, 168, 232
 National Strategy for the Protection
 of Switzerland against Cyber
 Risks (NCS) 67
 Natixis 78, 398–400
 Nazi 64, 239, 241, 243, 246–248
 Nazi victims 237, 247–249
 Negative interest rates 97–99, 352,
 374, 375, 378, 403
 Negative-sum game 526
 Negligence 169, 183, 184, 284
 Neobank 534

- Net positions 39
- Net Stable Funding Ratio (NSFR) 101
- Netting 29, 39, 45, 506, 507, 517, 524
- Network for Greening the Financial System (NGFS) 90, 347
- Net-Zero Banking Alliance 90
- Neue Aargauer Bank 113
- Neue Zuercher Bank 202
- Neutrality 1, 6, 8, 160, 217, 227, 228, 249, 335
- New Federal Act on Data Protection (nFADP) 260, 271
- New Insurance Contract Act (nISA) 260, 271
- New world paradigm 4
- New York City 71, 204, 238, 244, 363
- New York Commodity Futures Exchange (COMEX) 125
- New York Stock Exchange (NYSE) 470, 478, 495
- Nixon, Richard 2
- Non-CBDC cryptocurrencies 406
- Non-displayed pool 20
- Non-fungible tokens (NFTs) 23, 511
- Non-life insurance 265, 300, 312, 314
- Non-SIFIs 102, 103
- Non-voting Equity Securities (NES) 459, 460
- Non-voting equity share 8
- Nostro 556
- Notional value 501, 507
- Numbered account 163
-
- Occupational pension scheme 252, 268, 299
- Off-balance-sheet activities 6
- Official special audit 240
- Offshore 194, 196, 199, 200, 202–207, 578
- Old Age and Survivor's Insurance (OASI) 303
- On-balance sheet activities 114, 115
- Online payments 73
- Open banking 9, 65, 66, 73–76, 529, 530, 534, 547, 574
- Open-end collective investment scheme 326, 331
- Open finance 9, 65, 73–76, 529
- Open market operations 30, 258, 344, 348, 349, 351, 355, 356, 398
- Operating income 14, 17–18
- Operating profit 16, 18
- Operational risks 175, 425
- Options 50, 125, 195, 209, 318, 323, 374, 382, 465, 471, 472, 502, 504, 507, 509, 510, 513–515, 523, 525, 533
- Orchestrator role 534
- Order book 21
- Ordinance 83, 96, 101, 232, 251, 252, 255, 259, 271, 272, 443, 444, 521, 544
- Ordinance of the Swiss Financial Market Supervisory Authority on the Prevention of Money Laundering and Terrorist Financing (FINMA Anti-Money Laundering Ordinance, AMLO-FINMA) 182
- Ordinance on Banks and Savings Banks (BankO) 273, 280
- Ordinance on Collective Investment Schemes (CISO) 276, 289
- Ordinance on Combating Money Laundering and Terrorist Financing (AMLO) 182
- Ordinance on the Financial Market Supervision Act 278

- Ordinance on the International Automatic Exchange of Information in Tax Matters (AEOI Ordinance) 211
 - Ordinance on the Lifting of Restrictions on the Freedom of Contract in Insurance Contracts 274, 285
 - Organizational structure 6, 100, 109, 180, 337, 346
 - Organizational structure-SNB 338
 - Organization for Economic Cooperation & Development (OECD) 441
 - Organization for Economic Cooperation & Development (OECD) 65, 84, 94–96, 123, 160, 173, 191, 193, 196, 209–212, 219, 220, 222–224, 342, 347, 404, 550, 551
 - Organized crime 6, 161, 170–173, 178, 180, 183
 - OTC Spot 30, 258
 - OTC-traded 505, 512, 513, 522, 524
 - OTC-X 477
 - Other banking institutions 110, 112, 113, 129, 140, 149, 151
 - Ottoman Empire 229
 - Outsourcing 9, 88, 113, 530, 532, 540, 547, 574
 - Overcollateralization 446
 - Over-the-counter financial derivatives 126, 503–505, 507
 - Over-the-counter (OTC) 5, 8, 26, 27, 47, 125, 126, 329, 478, 501, 503–508, 512–514, 518, 520–525, 576, 577
 - Own shares 13, 54, 133
- P**
- Panama Papers 205
 - Pandemics 3, 65, 378
 - Pandora Papers 205, 206
 - Paradise Papers 205
 - Paris Affair 234
 - Paris Agreement Capital Transition Assessment (PACTA) 90
 - Paris Climate Protection Agreement 87
 - Paris Reparations Agreement 236
 - Participation certificate 8, 133, 459–461, 464, 519
 - Patent approvals 172
 - Payment services provider 17
 - PaymentStandards.CH 43
 - Payment systems 5, 11, 38–40, 42, 43, 55, 56, 257, 259, 266, 365, 381, 390, 392, 393, 397, 399, 402, 408
 - Payment token 71, 543, 544
 - Payment transactions 5, 12, 21, 41, 42, 71, 348, 402, 544
 - Payment-versus-payment (PvP) settlement 400
 - Payoff 4, 439, 471–473, 515
 - Peer Review of the Global Forum on Transparency and Exchange of Information 210
 - Pension fund 4, 7, 74, 91, 99, 267, 269, 297, 299, 300, 302, 306, 308, 309, 320, 325, 326, 333, 356, 440, 444, 462, 516, 577
 - Performance 8, 34, 35, 46, 91, 166, 167, 306, 342, 368, 378, 401, 452, 473, 484, 485, 487, 489–491
 - Personal income and capital gains taxes 10
 - Personal income tax 204, 558
 - Pfandbrief 425, 427, 428, 431, 442–449, 451, 453, 525
 - Pfandbriefbank schweizerischer Hypothekarinstitute, PBB 147, 428, 442
 - Pfandbrief institutions 354, 442, 444–447

- Pfandbriefzentrale der schweizerischen Kantonalbanken AG, PBZ 147, 428, 442
- Phishing 67, 68
- Pictet 491
- Pictet (Switzerland) 131
- Policy rate 99, 352, 353, 366, 370, 375–379
- Politically exposed person (PEP) 184, 185
- Portfolio diversification 411
- Portfolio management 32, 36, 109, 115, 131, 142, 145, 255
- Portfolio managers 145, 146, 256, 260, 265, 267, 272, 283, 284, 286, 287, 290, 292, 293, 325
- Portugal 243, 245, 261, 298, 370, 371, 568
- Position and activity limits 504
- Positive-sum game 526
- PostFinance 41, 100, 103, 257, 319
- Post-trade services 12, 20, 26, 28, 49, 524
- Precious Metals Control Act (PMCA) 252, 265, 293
- Predicate offense 193
- Premium Fund Data 33
- Price slippage 21
- Private banks 13, 49, 55, 63, 78, 110, 112–114, 117, 122, 129, 144, 145, 149, 203, 205, 240, 315, 330
- Private debt 436
- Private equity 465, 467
- Private issues 436–438
- Private placement 351, 432–438, 443, 447
- Private savings 7, 299, 302, 304
- Procedural rights 163
- Product offering 20, 24, 75, 81, 131, 318, 319, 530, 546, 547
- Product specialist 532
- Profitability 6, 7, 17, 18, 66, 108, 126, 231, 304, 343, 378, 382, 526
- Prohibited assets 185, 188
- Project financing 131
- Project Helvetia 78, 396–398
- Project Jura 396, 398
- Proof-of-concept 397
- Proportionality 222, 223
- Proposed Plan Allocation and Distribution of Settlement Proceeds 245
- Protocol (United States and Switzerland) 173
- Provisions 22, 72, 81, 83, 84, 109, 169, 182, 185–189, 198, 206, 222, 228, 229, 235, 262, 269, 284, 285, 290, 314, 319, 343–345, 348, 384, 385, 415, 440, 445, 468, 522, 529, 532, 533, 561, 573
- Provisions for Currency Reserves 343, 345, 384, 385
- Proxy voting 485
- Public debt 20, 416, 417, 423, 435, 436
- Public issues 8, 427, 430, 436, 438, 439, 443, 575
- Q**
- QR-bill 41, 42, 55, 61
- Qualified Intermediary Agreement 198, 199
- Qualified Intermediary Program (QIP) 198–200, 207
- Qualified Intermediary (QI) 198
- Quantitative easing 371
- Quantum computing 66, 69, 537
- Questionable and deceitful actions 242

R

- R3 78, 398, 511
- Rahn and Bodmer Co. 144
- Raiffeisen banks 103, 110, 111, 113, 114, 116, 118, 128–130, 138, 139, 149, 151, 421, 449
- Raiffeisen Switzerland Cooperative 138
- Ransom Software 69
- Ransomware 67, 69
- Raúl Salinas de Gortari 184
- Razak, Najib 189
- RBA-Central Bank 137
- RBA-Finance 137
- RBA-Service 137
- Real estate 7, 31, 35, 36, 99, 103, 118, 200, 214, 261, 300, 306, 320, 325, 326, 328, 329, 342, 359, 362, 369, 379, 427, 428, 442, 443, 448, 449, 462, 465, 484, 552, 558, 559, 562, 563, 575, 577
- Real-time-gross settlement (RTGS) 396
- Reasonable grounds 87, 183
- Reasonable suspicions 171, 198
- Recalcitrant Account Holders 208
- Reciprocity 222, 223
- Recognized overseas clearing house (ROCH) 29
- Redemption 395, 397, 398, 400, 439
- Reference and Pricing Data 32, 59
- Reference issuer 518, 519
- Refugee Class 246, 248
- Regional and Raiffeisen banks 13, 129, 143
- Regional and savings banks 110, 111, 113, 117, 118, 127–129, 136–138, 149
- Regional banks 111, 114, 136–138, 421, 449, 533
- Registered share 8, 336, 455, 458–460, 480
- Registration Decree 237
- RegTechs 9, 528
- Regulations 2, 11, 13, 21, 22, 32, 54, 57, 64, 65, 82, 93, 109, 110, 113, 133, 163, 165, 174, 187, 191, 203, 211, 218, 219, 223, 225–232, 235, 251, 252, 259, 261, 264–269, 271, 272, 275, 285, 289, 313, 316, 320, 323, 326–328, 330–333, 337, 340, 404, 436, 497, 503, 504, 507, 522, 528, 536, 540, 542–545, 547, 557, 559, 573, 575, 578
- Regulators 6, 7, 11, 54, 78, 81, 87, 89, 90, 132, 134, 205, 235, 251, 252, 255, 256, 261, 265, 272–277, 315, 324, 333, 444, 455, 503, 547
- Regulatory black-hole 503
- Regulatory board 22, 54, 467, 468
- Regulatory Data and Services 34
- Reichmuth and Co. 144, 145
- Reinsurance 265, 300, 311, 312, 316, 319, 557
- Reinsurance companies 5, 313, 314, 316, 320–322, 516
- Relevant liabilities 356
- Reporting services 12, 35, 59, 571
- Repo transactions 19, 28–30, 348, 354, 355, 370, 377, 384, 432, 434, 444, 525
- Repurchase agreements repos 525
- Repurchase agreements-Repos-SNB 30, 258, 350
- Required Stable Funding (RSF) 101
- Reserve requirements 258, 342, 356
- Residence 9, 86, 195, 211, 293, 484, 494, 552, 554
- Resident 4, 6, 111, 112, 125, 141, 142, 163, 186, 194–196, 199, 203–205, 207–209, 211, 212, 227, 231–233, 239, 240, 246,

- 302, 361, 398, 442, 459, 462,
497, 552, 554, 558, 563, 572
- Restricted-access account 558
- Retail CBDC (r-CBDC) 78, 79, 396
- Returns on average equity 15
- Reverse repurchase
 - agreements-Reverse repos-SNB
350
- Ripple effects 505
- Ripple (XRP) 76, 539
- Risk 3, 4, 8, 9, 11, 28–31, 33, 37,
39, 41, 45, 53, 64, 70–72,
76–81, 85–87, 89, 93, 98, 99,
101, 108, 115, 116, 118, 119,
121, 123, 125, 132, 136–139,
146, 147, 162, 178, 181, 185,
186, 188, 206, 225–227, 230,
237, 252, 254, 255, 265,
267–269, 280, 284, 287,
297–300, 312, 314, 315,
317–320, 323–325, 329, 336,
343, 346, 348, 384, 385, 389,
393, 396, 400, 402–405, 408,
421, 425, 439, 442, 444, 446,
447, 453, 455, 457, 458, 464,
465, 484, 491, 498, 502,
504–507, 513, 516, 517, 521,
524, 526, 529, 531, 571, 573,
575–577
- Risks for banks 93
- Risk-weighted assets (RWAs) 102,
103, 258, 381
- Rivalry 66, 108
- Robo-advice 70
- Robotics 9, 528, 536, 537, 539, 541
- Rules of the Takeover Board
(R-TOB) 275
- Russia 6, 17, 160, 217, 229, 298,
440, 459
- Russian civil war 229
- Russian invasion of Ukraine 3, 17,
97, 99, 160, 261, 379, 428,
474, 572
- S
- Safehaven Program 236
- Sanctions 17, 22, 85, 160, 168, 173,
178, 190, 205, 209, 217, 237,
245, 252, 253, 266, 572
- San Francisco 71
- Sarbanes-Oxley Act (SOX) 470, 478
- Savings bank 262, 449
- Schengen/Dublin Agreement 195,
222
- Schwyz 159, 165
- Scoach 471, 510, 511
- Scoach Europa AG 511
- Scoach Schweiz AG 471, 511
- SDX Test Platform 397–401
- SDX Trading AG 22, 23, 72
- Seasoned equity offering (SEO) 463
- SEBA Crypto AG 72
- Secondary issues 8
- Second pillar 299–301, 305, 308,
323
- Secure Swiss Finance Network
(SSFN) 37, 38
- Securities 5, 8, 12, 20, 21, 23, 25,
26, 28–30, 32, 38, 43, 45–49,
52, 71, 72, 81, 94, 95, 103,
109, 110, 117, 118, 122, 123,
125, 126, 129, 133, 139, 146,
172, 174–178, 185, 188, 199,
236, 252, 254, 255, 259, 260,
265–267, 280–283, 286–292,
320, 332, 342, 344, 350,
353–355, 359, 369, 382, 384,
394, 396, 401, 412, 413, 420,
429, 430, 433, 435, 436,
441–448, 451, 452, 456,
458–461, 467–469, 471, 478,
480, 494, 498, 504, 507,
515–517, 519, 521, 523, 525,
543–547, 552, 555–559, 571,
575
- Securities-based swaps 504
- Securities listing 13, 19, 20

- Securities services 12, 17, 19, 28, 56, 571
- Securities trading 5, 11, 12, 23, 129, 174, 254, 557
- Securitization 8, 115, 573
- Securitized derivatives 20
- Security administration 5
- Security firm 255, 282, 288, 521
- Security services 5, 300
- SEGA Aktienregiser AG 238
- Segregation of digital assets 544
- Self-regulated organization 20
- Sellers 21, 45, 46, 48, 392, 456, 506, 524
- Service architecture 530
- Service for the Exchange of Information in Tax Matters (SEI) 221
- Service revenues 20
- Settlement 5, 11, 12, 19, 20, 22–24, 27–30, 38, 39, 41, 43–45, 47–49, 57, 58, 79, 80, 84, 200, 204, 245, 246, 259, 393–398, 400, 401, 511, 523–525, 531, 545
- Settlement Communication System (SECOM) 45, 48, 259
- Settlement Fund 245, 249
- Shanghai Futures Exchange (SHFE) 125
- Shanghai Gold Exchange (SGE) 125
- Share capital 24, 133
- Shareholder structure 5, 12
- Shares 8, 13, 20, 24, 33, 45, 46, 49, 55, 57, 90, 94, 111, 114, 116, 117, 119, 133, 138, 144, 146, 172, 173, 192, 232, 270, 306, 314, 315, 317, 319, 320, 327–329, 336, 369, 382, 385, 401, 412, 413, 418, 420, 423–425, 427, 429, 430, 439, 443, 448, 455, 456, 459–465, 470, 471, 473, 477–480, 485, 486, 491, 492, 494, 495, 497, 498, 503, 515, 528, 556, 560, 563, 577
- Short-term liquidity 30, 101
- SICAF 331
- SICAV 264, 291, 331, 436
- SIC Payment System 45
- Singapore 71, 94, 210, 336, 568
- SIS 352, 354, 355
- SIS Group 12
- SIX Card Solutions 41
- SIX Digital Exchange (SDX) 20, 22, 23, 36, 44, 46, 55, 58, 396–399, 511, 545–547
- SIX exchange member 521
- SIX Exchange Regulation (SER) 21, 22, 54, 468, 517
- SIX Financial Information 12, 31–36
- SIX Group 5, 11–15, 17, 19–22, 24, 25, 36, 37, 41–44, 55, 56, 390, 471, 510, 511, 545, 571, 572
- SIX Interbank Clearing Ltd (SIC) 37, 47, 48
- SIX Repo 30, 258
- SIX Securities Services Ltd. 47
- SIX SIS Ltd (SIS) 45, 48, 352, 546
- SIX Structured Products 511
- SIX Swiss Exchange 19–21, 27, 29, 37, 44, 46, 47, 49, 50, 52, 53, 56, 255, 258, 377, 429, 434, 443, 449–451, 456, 463, 464, 467, 469–471, 473, 477, 478, 480, 484–486, 491, 495, 498, 499, 510, 511, 517, 523
- SIX Terravis 31
- SIX x-clear 26, 29, 30, 258
- Slaney, William 243, 249
- Slave Labor Class I 246, 248
- Slave Labor Class II 246, 248
- Smart budgeting 73
- Smart contracts 9, 76, 397
- Smart onboarding 73

- Smithsonian Agreement 343, 358, 359, 509
- SNB Bank Council 339, 346
- SNB Bills 30, 258, 350, 351, 370
- SNB Exemption Threshold 98
- SNB Governing Board 339
- SNB monetary policy instruments 347
- SNB Sight deposit accounts 348
- SNB StabFund Limited Partnership for Collective Investment (StabFund) 382
- SNB Swiss franc security sales and purchases 353
- SNB Terms of Business and Instruction Sheets 348
- Social Bond 450, 451
- Social engineering 67–69
- Social security system 7, 300, 308, 320, 323, 333, 577
- Software as a service (SaaS) 530, 531
- Solothurn 134
- Solutions & Services (TSS) business 17
- Solvency ratio 324
- Source of income 558
- Sovereign debt crisis 370, 371
- Sovereign-The Sovereign 225
- Spain 5, 13, 15, 18, 20, 24, 28, 132, 243, 261, 298, 370, 371, 425, 569
- Special Drawing Rights 342
- Specificity 222, 531
- Speculation 501, 503
- Spin-off 33, 46, 113, 463, 467
- Sponsored Access (SA) 25, 28, 53, 57
- Sponsored funds 5, 20, 29, 50
- Spyware 67, 69
- Stablecoin 72, 77, 78, 406, 511
- Stamp tax 94, 420, 437, 452, 498, 555–557, 578
- Standardized contracts 506, 507
- Standing facilities-SNB 349, 351, 355, 398
- Start-ups 4, 300, 467, 561
- State-run basic benefit plan 7
- Stock dividends 563
- Stock exchange 2, 24, 25, 31, 36, 43, 46, 54, 72, 82, 255, 265, 266, 329, 456, 458, 460, 465, 469, 477, 484, 494, 495
- Stock exchange banks 110, 112, 113, 116, 128–130, 139, 140, 145, 149, 151
- Stock exchange laws and regulations 54
- Stolen Assets Recovery Initiative (StAR) 181
- Store of value 401
- Strategic positioning 9, 534
- Strategies 7, 69, 76, 78, 87–89, 108, 136, 407, 480, 503, 511, 534
- Strong Customer Authentication (SCA) 75
- Structured products 8, 9, 20, 36, 46, 49, 50, 56, 57, 94, 196, 209, 455, 471, 478, 480, 506, 511, 514–518, 525, 532, 576
- Structure of SNB's assets 383
- Suasion power 355
- Substantive rights 163
- Supervisory Organizations
Ordinance (SOO) 277, 293
- Supervisory organizations (SOs) 146, 252, 260, 265, 267, 293
- Sustainability 13, 36, 57, 87, 89, 90, 93, 342, 450, 487, 489, 528, 529, 533, 573
- Sustainability-linked bonds 450, 451
- Sustainable bonds 449, 450, 452
- Sveriges Riksbank (Bank of Sweden) 79, 369, 390
- Swaps 126, 127, 209, 318, 349, 350, 370–372, 377, 378, 447, 503, 504, 507, 508, 513–515, 523–525

- SWIFT 17, 217
- Swiss All Share Index 474, 485
- Swiss and global equities 20
- SwissAtMid 21, 56
- Swiss Average Rate Overnight Rate (SARON) 36, 60, 352, 376, 377
- Swiss Bankers Association (SBA) 67, 76, 82, 83, 86, 89, 91–95, 98–100, 104–107, 109, 110, 112–115, 119, 121, 122, 127, 138, 150, 154–156, 186, 213, 228, 237–240, 255, 257, 270, 425, 521, 529, 530, 534
- Swiss banking 106, 108, 109, 112, 131, 134, 141, 195, 202, 229, 230, 328, 447, 532, 540, 573
- Swiss Banking Ombudsman (SBO) 238, 249, 270
- Swiss banking secrecy 4, 159, 161, 163, 164, 201, 210, 226, 231, 233, 235, 572
- Swiss Bank Program 206, 207
- Swiss Civil Code 85, 166, 167, 303
- Swiss Code of Obligations (SCO) 72, 228, 303, 435, 469, 543
- Swiss Confederation 67, 94, 97, 102, 104, 165, 167, 173, 182, 187, 195, 197, 198, 201, 217, 220, 222, 264, 265, 272, 336, 338, 340, 342, 343, 378, 405, 440, 451, 521, 558
- Swiss Criminal Code (SCC) 85, 87, 169, 170, 172, 173, 178–180, 182, 183, 191, 208, 216, 263
- Swiss Debt Break 575
- Swiss debt markets 411, 422, 430, 442, 451, 575
- Swiss derivatives markets 126
- Swiss Digital Exchange (SDX) 395, 396, 510
- Swiss Euro Clearing Bank (SECB) 38–40
- Swiss Federal Act on Banks and Savings Banks (Banking Act, BA) 64, 133, 134, 168, 169
- Swiss Federal Administrative Court (SFAC) 201, 202, 219
- Swiss Federal Audit Office (SFAO) 171
- Swiss Federal Banking Commission (SFBC) 133, 174, 180, 181, 239–242, 252, 265, 381
- Swiss Federal Finance Market Supervisory Authority (FINMA) 13
- Swiss Federal Office of Justice (SFOJ) 201
- Swiss Federal Tax Administration (SFTA) 201, 422, 437, 556
- Swiss Financial Market Infrastructure Act (FinMIA) 13, 83
- Swiss Financial Market Supervisory Authority (FINMA) 54, 71, 178, 182, 187, 221, 265, 266, 272, 281, 282, 288, 290, 291, 293, 294, 315, 340
- Swiss Financial Market Supervisory Authority on Financial Market Infrastructures and Market Conduct in Securities and Derivatives Trading (FINMA Financial Market Infrastructures Ordinance, FinMIO-FINMA) 288, 522
- Swiss Finish 380, 381
- Swiss franc 2, 7, 12, 37, 42, 43, 47, 49, 63, 66, 78, 80, 81, 92, 97, 99, 107, 115, 119, 122–124, 126, 127, 147, 148, 151, 152, 154–156, 165, 178, 212, 215, 231, 305, 316, 335–337, 341, 343, 344, 349, 351–354, 356, 358–363, 365, 367–377, 382, 384–387, 389, 390, 393, 394, 398, 399, 406, 407, 411–413, 418, 421, 423–425, 427–433,

- 435–439, 442, 446, 448,
 450–452, 455, 471, 480,
 511–516, 518, 520, 523, 555,
 557, 563, 573, 574
- Swiss franc appreciation 123
 Swiss franc domestic market 429
 Swiss franc-eurocurrency peg 375
 Swiss Fund Data 37
 Swiss Humanitarian Fund 247
 Swiss Interbank Clearing (SIC) 17,
 37–40, 43, 45, 48, 61, 258,
 259, 351, 355, 362, 378, 391,
 396, 397, 399
 Swiss-IRS Agreement 201
 SwissLeaks 202
 Swiss Life 206, 299, 303, 312, 314,
 490
 Swiss Market Index (SMI) 35, 36,
 60, 475, 476, 486–490, 496,
 497
 Swiss National Bank (SNB) 2, 29,
 30, 38, 39, 77, 79, 97, 98,
 105, 107, 113, 115, 119, 124,
 127–132, 134–145, 148–156,
 161, 231, 237, 251, 257–259,
 328, 329, 336–338, 340, 341,
 343, 345–353, 356, 358, 361,
 372, 375, 382, 387, 388, 390,
 396, 397, 399–401, 413, 419,
 420, 426–428, 430, 432,
 434–439, 441, 449, 465, 479,
 521, 573
 Swiss Options and Financial Futures
 Exchange (SOFFEX) 502,
 509, 510
 Swiss parliament 54, 95, 183, 201,
 202, 243, 252, 305, 336, 345,
 381, 405, 542, 554, 556
 Swiss Performance Index (SPI) 486,
 492
 Swiss Pfandbrief Institutes 442
 Swiss Rubik Agreements 195, 196
 Swiss Solvency Test (SST) 323, 324
 Swiss Sovereign Money Initiative
 (Vollgeld Initiative) 405
 Swiss Stock Exchange 21, 22, 25,
 26, 28, 47, 51, 53, 54, 89,
 178, 336, 440, 459, 467, 474,
 479–481, 483, 484, 492, 494,
 495, 516
 Swiss Structured Products
 Association (SSPA) 516–520
 Swiss Supreme Court sequestration
 decision 168
 Swiss taxes 4, 192, 195, 211, 224,
 225, 418, 552, 553, 560, 561
 Swiss value chain 2, 29, 43, 44
 Swiss Volksbank (SVB) 230, 231
 Switzerland and Refugees in the
 Nazi Era 244
 Switzerland's central securities
 depository (CSD) 24, 27, 28,
 45, 48
 Switzerland-United States Double
 Taxation Treaty 220
 SWXess 22, 44, 46
 SWX Group 12, 510
 SWX Swiss Exchange 12, 510, 511
 Sygnum Bank AG 72
 Systemically important banks (SIBs)
 100, 103, 258, 262, 280, 573
 Systemically Important Financial
 Institutions (SIFIs) 65, 100,
 102–104, 133, 257, 258, 271,
 341
 Systemic problems 506
- T**
- Tailor-made exposure 506
 Takeover Ordinance (TOO) 275,
 288
 TARGET2 399
 Tax and Compliance 35, 59
 Tax burden 9, 226, 227, 418, 550,
 559, 561, 562
 Tax categories 549

- Tax evasion 6, 81, 86, 94, 160–162, 171, 189, 192–197, 199, 200, 203, 205, 207, 210, 213–215, 234, 394, 404, 552
- Tax fraud 86, 161, 171, 172, 189, 192–195, 197–201, 203–205, 210, 213, 220, 234, 404, 572
- Tax haven 196, 200, 201, 205, 223, 550, 564
- Tax Haven Banks and US Tax Compliance 200
- Tax rate 11, 95, 96, 147, 227, 228, 414, 453, 550, 558–564
- Tax services 20, 28, 58
- Tax services for equities 5
- Technical innovation 21
- Technical trading and settlement infrastructure 20
- Technology-neutral 71
- Tether (USDT) 76
- The Hague Convention on the Taking of Evidence Abroad in Civil or Commercial Matters 224
- Third pillar 299, 308
- Thirty-Years War 217
- Three pillars 7, 181, 299
- Tier 1 capital 102, 103
- Tier 1 capital (AT 1) 103
- Tier 1 (CET 1) 103
- Tokenized assets 22, 393, 395, 397, 398, 532, 539, 543
- Tokens 3, 71, 395, 398, 511, 544
- Too big to fail (TBTF) 7, 100, 132, 133, 257, 378, 380
- Toronto 71
- Total loss-absorbing capacity (TLAC) 102
- Traded quantities 21
- Trade repository 18, 59, 519–521
- Traders 20–22, 25, 27, 51, 52, 57, 180, 294, 421, 506, 516, 519, 558
- Trading 2, 5, 8, 11, 12, 18–20, 22–24, 26, 28–30, 32, 43–47, 49, 50, 52, 53, 56, 57, 72, 79, 115, 120, 125, 131, 139, 144, 172, 174–178, 258, 266–268, 332, 368, 371, 394, 398, 418, 420, 436, 456, 468, 478, 479, 484, 492, 496, 503–505, 507, 510, 511, 523–525, 543–547, 556, 557, 571, 575, 577
- Trading commissions 115
- Trading participant 25, 26, 28, 30, 45, 51–53, 57, 286, 516
- Trading platform 22, 44, 57, 266, 477, 502, 504, 510, 511
- Trading venue 26, 28, 52, 172, 174–177, 288, 577
- Transaction costs 47, 396, 402, 403, 457, 497, 555
- Transactions 2, 3, 8, 11, 12, 14, 17, 20, 24, 27, 29, 31, 37–41, 43, 45, 47–49, 70, 73, 76–80, 108, 116, 117, 125, 126, 129, 131, 136, 147, 152, 160, 177–179, 181, 182, 185–188, 190, 193, 204, 205, 213–215, 217, 230, 244, 246, 258, 259, 263, 266, 291, 317, 318, 336, 342, 348–352, 354, 355, 373, 382, 387, 390, 392–402, 405, 418, 447, 464, 469, 480, 498, 504–511, 513, 517, 518, 520, 521, 524, 527, 528, 530, 532, 543, 552, 555–557, 559, 561, 562, 564
- Transfer 13, 38, 39, 41, 45, 73, 74, 77, 79, 133, 173, 178, 182, 186, 190, 195, 202, 204, 207, 216, 220, 224, 228, 233, 236, 237, 242, 258, 280, 293, 297, 314, 337, 382, 392, 394, 395, 398, 399, 403, 404, 418, 420, 422, 437, 460, 468, 479, 543,

552, 555–557, 559, 561, 574, 578

Transparency 6, 36, 37, 54, 88, 89, 93, 159, 160, 189, 198, 218, 226, 252, 264, 268, 269, 271, 279, 288, 289, 292, 331, 339, 366, 390, 396, 404, 408, 455, 469, 503–506, 544, 572, 576

Treasury Bills 30, 258

Treaty of Vienna 217

Tremonti, Giulio 194

Troy 69

Trusted advisor 532, 533

Trustworthiness 3, 78, 406

Turnover 39, 40, 49–51, 96, 478–480, 492–494, 496, 498, 499, 501, 509, 512–515, 517, 518, 562

Two-factor authentication (2FA) 75

Two pillar solution 95, 96

U

UBS 13, 36, 64, 78, 100, 103, 108, 111, 131–134, 136, 180, 200–205, 207, 214, 215, 231, 245, 256, 257, 318, 319, 326, 329, 349, 378, 380–383, 397–400, 439, 440, 447–449, 461, 480, 490, 494, 515, 517

UBS Switzerland AG 13, 108, 111, 113, 133, 256

Ukraine 6, 100, 160, 213, 217, 374, 569

Underlying 36, 267, 315, 339, 344, 353, 444, 447, 472, 473, 481, 484, 485, 505, 516, 518, 521

Undertakings for Collective Investments in Transferable Securities (UCITS) 331

Underwriting 108, 116, 120, 122, 126, 131, 144, 254, 255, 434, 447, 541

UN Framework Convention on Climate Change (Paris Agreement) 90

United Nations (UN) 67, 191

United Nations' 2030 Agenda for Sustainable Development 87, 90

United Nations Environment Programme–Finance Initiative (UNEPFI) 90

Unit of account 401

Universal banking 6, 66, 71, 109, 115, 129, 254, 573

Unlawful association 86, 171, 178

UN Principles for Responsible Banking (PRB) 90

UN Principles for Responsible Investment (PRI) 90

Unterwalden 159, 165

Uri 31, 159, 165

U.S. and Allied Efforts to Recover and Restore Gold and Other Assets Stolen or Hidden by Germany during World War II–Preliminary Study 243

U.S. Commodity Futures Modernization Act of 2000 (CFMA) 503

Use it or lose it 70

User-governed 5, 12, 13

U.S. financial crisis 503

U.S. House Committee on Banking and Financial Services 243

U.S. Internal Revenue Service (IRS) 35, 59, 173, 198, 199, 206, 208, 209

U.S. Justice Department 203, 204

U.S. Securities and Exchange Commission (SEC) 435

U.S. Senate Permanent Subcommittee on Investigations 200

U.S. Subprime crisis 496

US-subprime mortgage collapse 64,
97, 99, 127
Utility bank 532

V

Value-added tax (VAT) 10, 195,
364, 549, 552, 562
Value-based CBDC 78, 79, 394
Value-Based Retail CBDCs 394
Value chain 5, 9, 12, 23, 41, 43, 44,
74, 88, 511, 527, 528, 531,
534, 547, 571, 572, 574
Venture capital 1, 4, 7, 8, 300, 332,
462, 465, 467, 576, 577
Verband Schweizer Regionalbanken
(VSRB) 138
Vertical harmonization 550
Vesting and Marshalling Decree 236
Victim List Programs 248
Victims or Targets of Nazi
Persecution 245
Viruses 67, 69, 70
Vladimiro Ilyich Montesinos Torres
184
Volatility 3, 77, 97, 99, 115, 118,
127, 251, 260, 331, 344, 371,
374, 379, 406, 407, 487, 491,
501, 502, 515, 523, 534, 575,
577
Volcker Commission 239–241, 246,
249
Vontobel 139, 319, 341, 515, 517

W

Wall-Street Transparency and
Accountability Act of 2010
504
Warrants 20, 50, 93, 94, 101, 171,
221, 345, 430, 437–439, 471,
472, 478, 480, 504, 514, 515,
519
Washington Agreement 389

Wealth management 83, 90, 91,
112, 121, 140, 573
Wegelin and Co. 203
Wermuth Postulate 79
Whatever it takes 3
Whistleblower 6, 202, 215, 216
Whistleblowing-three-step process
215
Whistleblowing website 171
Wholesale CBDC (wCBDC) 78, 79,
392, 394, 397, 399, 400
Wholesale trades 125
WikiLeaks 202
Withholding tax 8, 65, 94, 95, 124,
126, 172, 192, 194–196, 199,
200, 207, 209, 221, 224, 448,
484, 518, 552, 554–556, 561,
563
Wolfsberg Anti-Money Laundering
Principles for Private Banking
180
World Jewish Restitution
Organization 238, 239, 248
Worldline 17, 43
Worldline's Terminals 17
World War I 64, 217, 227–229, 232
World War II 2, 108, 142, 217, 236,
237, 240, 242–245, 248, 304,
461, 525, 549
Worms 67–69

Y

Yield enhancement 473, 506, 516,
518–520, 576
Yield extraction 515
Yield optimization 471, 473

Z

Zero-sum game 333
Zine al-Abidine Ben Ali 184
Zug 70, 77, 560

Zürcher Kantonalbank (ZKB) [100](#),
[103](#), [131](#), [134](#), [442](#), [517](#), [533](#)

Zurich Gold Exchange [125](#)