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Appendix

Table 3.8 Growth rate of natural capital and renewable resources from 1990–2014

Country	*Growth of natural capital*	*Growth of renewables*	*Growth of forest*	*Growth of fisheries*
Afghanistan	−0.1%	0.0%	0.0%	
Albania	−0.3%	−0.1%	0.0%	−3.4%
United Arab Emirates	−0.9%	−2.8%		−2.8%
Argentina	−0.3%	−0.2%	−0.3%	−5.2%
Armenia	2.5%	−0.5%	−0.5%	
Australia	−0.6%	−0.7%	−0.8%	−2.7%
Austria	−0.1%	0.2%	0.5%	
Burundi	−0.9%	−0.9%	−1.6%	
Belgium	1.6%	1.6%	1.5%	1.6%
Benin	−1.0%	−1.0%	−1.0%	−3.3%
Bangladesh	−0.8%	−0.7%	−0.2%	−1.5%
Bulgaria	−1.6%	−3.4%	−4.7%	0.6%
Bahrain	−5.5%	−1.6%	−6.4%	−1.6%
Belize	−0.5%	−0.5%	−0.6%	−0.4%
Bolivia	−0.5%	−0.4%	−0.5%	
Brazil	−0.4%	−0.4%	−0.4%	−0.9%
Barbados	−1.6%	−0.7%	−0.9%	0.2%
Botswana	−0.9%	−0.8%	−0.9%	
Central African Republic	−0.1%	−0.1%	−0.1%	
Canada	−1.2%	−1.6%	−2.0%	2.2%
Switzerland	−0.1%	−0.1%	0.3%	
Chile	−0.6%	−0.3%	0.1%	−2.8%
China	−0.8%	−0.2%	−0.8%	−3.2%
Côte d'Ivoire	1.2%	1.3%	1.7%	−1.3%
Cameroon	−6.2%	−6.4%	−7.3%	−3.8%
Democratic Republic of the Congo	−0.2%	−0.2%	−0.2%	
Congo	−0.3%	0.0%	−0.1%	1.7%
Colombia	−4.8%	−5.9%	−6.6%	−0.3%
Costa Rica	0.7%	0.7%	2.6%	−1.7%

Country	*Growth of natural capital*	*Growth of renewables*	*Growth of forest*	*Growth of fisheries*
Cuba	0.2%	1.7%	1.9%	−1.2%
Cyprus	0.0%	0.0%	0.3%	
Czech Republic	−1.4%	−1.8%	−1.8%	
Germany	−0.6%	0.3%	0.8%	0.8%
Denmark	−3.3%	−1.4%	1.2%	−1.8%
Dominican Republic	−0.3%	−0.3%	−0.2%	−0.9%
Algeria	−2.2%	−1.1%	−0.3%	−2.8%
Ecuador	−1.0%	−0.6%	−0.6%	−1.3%
Egypt	−2.6%	0.8%		−2.3%
Spain	0.2%	0.4%	1.2%	1.3%
Estonia	0.1%	0.1%	0.2%	−0.7%
Finland	−0.3%	−0.3%	−0.3%	−1.7%
Fiji	0.1%	0.1%	0.0%	0.4%
France	0.0%	0.0%	0.6%	−1.4%
Gabon	−0.1%	0.0%	0.0%	−1.6%
United Kingdom	−4.4%	−1.0%	−5.9%	−2.3%
Ghana	0.0%	0.1%	0.1%	−3.0%
Gambia	−1.2%	−1.2%	0.4%	−2.9%
Greece	−0.8%	−0.5%	0.8%	−2.1%
Guatemala	−1.0%	−1.0%	−0.9%	−2.4%
Guyana	0.6%	0.6%	0.7%	−3.1%
Honduras	−2.0%	−2.0%	−2.3%	−3.4%
Croatia	0.3%	0.5%	0.6%	−0.7%
Haiti	−1.8%	−1.8%	−1.8%	−1.7%
Hungary	−0.8%	−0.6%	0.8%	
Indonesia	−1.1%	−0.8%	−1.2%	−3.0%
India	−0.4%	−0.1%	0.1%	−2.3%
Ireland	−1.5%	−1.4%	−1.3%	−2.1%
Iran	−0.6%	−1.0%	−0.9%	−3.2%
Iraq	−0.4%	−0.2%	0.1%	−3.4%
Iceland	−0.3%	−0.3%	3.5%	−1.8%
Israel	−0.6%	−0.5%	0.5%	−1.1%
Italy	−0.2%	0.0%	1.1%	−0.4%
Jamaica	−0.3%	−0.2%	−0.1%	0.5%
Jordan	−0.5%	−0.1%	0.0%	−0.3%
Japan	−0.9%	−0.7%	0.2%	−0.8%
Kazakhstan	−0.1%	0.1%	0.1%	
Kenya	0.1%	0.1%	0.1%	0.0%
Kyrgyzstan	0.5%	1.4%	1.4%	
Cambodia	−1.3%	−1.3%	−1.3%	−5.3%
Republic of Korea	−0.3%	−0.1%	2.1%	−1.4%
Kuwait	−0.7%	−1.1%		−1.1%
Laos	0.0%	0.0%	−0.1%	

(*Continued*)

Table 3.8 (Continued)

Country	*Growth of natural capital*	*Growth of renewables*	*Growth of forest*	*Growth of fisheries*
Liberia	−0.7%	−0.7%	−0.7%	−2.2%
Sri Lanka	−0.9%	−0.9%	−0.9%	−2.7%
Lesotho	−0.2%	−0.2%	−0.2%	
Lithuania	0.1%	0.1%	0.2%	−2.3%
Luxembourg	0.7%	0.7%	0.7%	
Latvia	0.8%	0.8%	0.8%	−0.4%
Morocco	−0.5%	−0.5%	0.3%	−1.7%
Republic of Moldova	−5.5%	−5.5%	−5.5%	
Maldives	−1.9%	−1.9%	−6.5%	−2.0%
Mexico	−0.8%	−0.1%	−0.1%	−1.2%
Mali	−2.1%	−2.1%	−3.1%	
Malta	−0.7%	−0.7%	−6.5%	1.0%
Myanmar	−1.5%	−1.5%	−1.3%	−3.0%
Mongolia	−0.4%	−0.4%	−0.3%	
Mozambique	1.2%	−0.4%	−0.5%	−0.8%
Mauritania	−1.8%	−2.4%	−2.9%	−2.3%
Mauritius	−1.5%	−1.5%	−0.5%	−3.4%
Malawi	−0.5%	−0.5%	−1.3%	
Malaysia	−1.3%	−0.5%	−0.1%	−2.2%
Namibia	0.7%	0.5%	−0.9%	2.7%
Niger	−1.2%	−1.4%	−2.5%	
Nigeria	−1.3%	−0.3%	−2.9%	−3.8%
Nicaragua	−0.7%	−0.7%	−1.3%	−1.4%
Netherlands	−3.0%	−0.5%		−0.8%
Norway	−3.5%	0.3%	0.9%	−0.6%
Nepal	−1.1%	−1.1%	−1.2%	
New Zealand	0.3%	0.3%	0.5%	−3.0%
Pakistan	−2.7%	−2.9%	−3.3%	−2.7%
Panama	0.1%	0.1%	0.2%	−1.7%
Peru	−0.1%	0.0%	0.1%	−4.0%
Philippines	−0.1%	−0.1%	0.2%	−2.2%
Papua New Guinea	0.8%	0.9%	1.0%	−2.2%
Poland	−0.8%	−0.9%	1.4%	−2.8%
Portugal	−0.3%	−0.3%	−1.3%	0.9%
Paraguay	−0.6%	−0.6%	−1.2%	
Qatar	−1.0%	−0.5%		−1.8%
Romania	−0.7%	0.0%	0.2%	
Russian Federation	0.3%	0.0%	0.0%	−1.7%
Rwanda	1.6%	−0.4%	−1.1%	
Saudi Arabia	−0.2%	1.7%	0.0%	−2.2%
Sudan (former)	−2.9%	−3.3%	−3.3%	−0.8%
Senegal	−0.6%	−0.6%	−0.6%	−0.8%

Country	*Growth of natural capital*	*Growth of renewables*	*Growth of forest*	*Growth of fisheries*
Singapore	−0.7%	−0.7%	7.7%	−1.5%
Sierra Leone	−0.9%	−0.9%	−0.9%	−1.4%
El Salvador	0.3%	0.3%	−1.5%	1.0%
Serbia	1.5%	1.2%	1.2%	
Slovakia	−0.1%	0.5%	0.5%	
Slovenia	0.2%	0.9%	0.9%	−3.5%
Sweden	−1.3%	−1.3%	−1.4%	−1.2%
Swaziland	0.8%	1.3%	1.3%	
Syrian Arab Republic	−3.3%	−1.3%	−6.5%	−1.0%
Togo	−1.8%	−1.8%	−5.7%	0.1%
Thailand	−1.0%	−0.3%	0.2%	−2.0%
Tajikistan	0.1%	0.0%	0.0%	
Trinidad and Tobago	−3.9%	−3.1%	−4.0%	−0.3%
Tunisia	−2.1%	−0.1%	−0.5%	−2.3%
Turkey	−0.5%	−0.4%	−0.6%	−2.1%
United Republic of Tanzania	1.1%	1.1%	1.2%	−1.8%
Uganda	−1.0%	−2.9%	−2.9%	
Ukraine	0.1%	0.7%	0.8%	−0.5%
Uruguay	−0.3%	−0.3%	0.3%	−3.6%
United States of America	−0.6%	0.2%	0.3%	−0.1%
Venezuela (Bolivarian Republic of)	−0.3%	−0.2%	−0.3%	−4.5%
Viet Nam	−0.4%	0.0%	0.6%	−2.5%
Yemen	−0.4%	−0.4%	0.0%	−3.3%
South Africa	−1.2%	0.1%	−0.1%	0.5%
Zambia	−0.3%	−0.2%	−0.3%	
Zimbabwe	−1.7%	−1.8%	−1.8%	

4 Reconciling inclusive wealth and Piketty

Natural capital and wealth in the 21st century

Edward B. Barbier

Introduction

In his book *Capital in the Twenty-First Century*, Piketty (2014) documents the rise in the wealth-income ratios over 1970 to 2010 for eight high-income economies – the United States, Japan, Germany, France, the United Kingdom, Italy, Canada and Australia. For each of these countries, the wealth-income ratio has increased from 200–400% in 1970 to 400–600% in 2010. In addition, the rise in this ratio has been accompanied by another important trend. Over the past four decades, much of the accumulated capital in rich countries is predominantly private wealth, and it comprises largely financial and industrial capital and urban real estate (i.e. housing). The effect of these trends has contributed to what Piketty (2014, pp. 193–194) describes as the "financialization" of the global economy, and as a result, increasing wealth and income inequality:

> Broadly speaking, the 1970s and 1980s witnessed an extensive "financialization" of the global economy, which altered the structure of wealth in the sense that the total amount of financial assets and liabilities held by various sectors (household, corporations, government agencies) increased more rapidly than net wealth. In most countries, the total amount of financial assets and liabilities in the early 1970s did not exceed four to five years of national income. By 2010, this amount had increased to ten to fifteen years of national income (in the United States, Japan, Germany and France in particular) and to twenty years of national income in Britain, which set an absolute historical record.

To construct these measures of wealth and income for 1970 to 2010, Piketty (2014) uses official national accounts for each country, following the UN System of National Accounts (SNA). Wealth is defined conventionally as market value "national wealth," which can be decomposed into domestic capital (including land and real estate) and net foreign assets.[1] Income is "net-of-depreciation national income," which is the sum of gross domestic product and net foreign income, less any domestic capital depreciation. Similarly, the national saving flow that adds to wealth is also measured net of capital depreciation.

As pointed out by Barbier (2015, 2017), the SNA approach used by Piketty (2014) to estimate wealth, net income and net savings does not include the depreciation in natural resources essential to domestic production and income, such as

fossil fuels, minerals and forests. These resources are important sources of "natural" capital, and the value of their net depletion should also be deducted from annual income and savings (Arrow et al. 2012; Hamilton and Clemens 1999; Hartwick 1977, 1990; Solow 1986; Weitzman 1976; World Bank 2011). The rationale is intuitive: if we use up more of energy, mineral and forest resources to produce additional economic output today, then we have less natural capital for production tomorrow; thus, net national income and savings today should also account for any natural capital depreciation.

Accounting for natural capital depletion in wealth accounts is, of course, a key and familiar contribution of the inclusive wealth approach, as highlighted in previous Inclusive Wealth Reports (UNU-IHDP-UNEP 2012, 2014). Barbier (2017) has shown that it is possible to reconcile this approach of accounting for natural capital depreciation with Piketty's method of estimating net national income and saving. Specifically, this leads to two key indicators: the net national saving rate adjusted for natural capital depreciation, and the ratio of this saving rate with respect to the long-run average annual growth in adjusted net national income per capita. Using World Bank data, Barbier (2017) applies these two indicators to examine the impacts of depreciation of key natural resources, such as fossil fuels, minerals and forests, on the accumulation of adjusted net wealth over 1970–2013 for the same eight rich countries analysed by Piketty (2014) and Piketty and Zucman (2014), and for comparison, over 1979–2013 for 95 low and middle-income economies. Whereas in developing economies capital accumulation has largely kept pace with rising natural capital depletion, in the rich countries adjusted net savings have fallen to converge with the rate of natural capital depreciation, suggesting less compensation by net increases in other capital.

In sum, natural capital depreciation clearly matters for wealth accumulation and long-run wealth-income ratios in all economies, including rich countries. Moreover, the result has important implications for Piketty's explanation for growing global inequality. If overall wealth accumulation net of natural capital depreciation is slowing in rich countries, then the "financialization" of economies observed by Piketty (2014) will continue to worsen wealth and income inequality.

The purpose of this chapter is to explore further the implications of reconciling the inclusive wealth approach of Barbier (2017) to adjusting net income and savings for natural capital depreciation with Piketty's method of estimating long-run trends in wealth-income ratios. In addition, the analysis is extended from Piketty's original group of eight rich countries to 30 high-income economies that are members of the Organization for Economic Cooperation and Development (OECD) over 1970 to 2014. Evidence suggests that growing income and wealth inequality has been pervasive in all OECD economies (OECD 2011), and thus determining whether natural capital depreciation impacts long-run wealth accumulation in these economies may be an important factor underlying this trend.

This chapter also extends the analysis by Barbier (2017) of these natural capital depreciation, net income and net savings trends to 113 low and middle-income (developing) economies from 1970 to 2014. For comparison, the sub-group of 26 low-income countries is also analysed separately, which turn out to display different trends over 1970–2014 than either all developing or the rich OECD economies.

The main findings are that, although over the past four decades the rate of natural capital depreciation has been on average five times larger in developing countries than in the rich OECD economies, in low and middle-income economies other forms of capital investments have largely compensated for the rising natural capital depletion that has occurred since the late 1990s. In contrast, in the rich countries, the rate of adjusted net savings has converged to the rate of natural capital depreciation. For low-income economies, adjusted net wealth accumulation fell on average each year at a rate that is four times more than long-run growth, although since 2000 this trend may have been reversing. If this rising trend continues, then low-income countries could experience accumulation in net adjusted wealth at a faster pace than long-run per capita income growth.

Over the past 40 years there may have been substantial accumulation of wealth relative to income in rich economies, but as this accumulation has proceeded, natural capital depreciation is being compensated less and less each year by net increases in other forms of capital. The overall implications are that, given that stocks of natural resources are depleted for current production and wealth accumulation, a measure of national wealth that excludes natural capital depreciation likely exaggerates the actual increase in an economy's wealth over time, especially in those countries where accumulation of other forms of wealth is failing to compensate for diminishing natural capital. This suggests that income and wealth inequality may be worsening in rich countries, and in the global economy generally, as emphasized by Piketty (2014).

Conventional versus adjusted net income accounting

Because official national account statistics do not routinely account for changes in stocks of natural capital – even fossil fuels, minerals, forests and similar natural resources that can be bought and sold on markets – it is difficult to measure directly long-run trends in the natural capital / national income ratio for an economy. However, it is possible to indicate how natural resource depreciation affects wealth accumulation, through extending the approach to measuring national wealth developed by Piketty (2014) and Piketty and Zucman (2014).[2]

The appendix to this chapter outlines how this can be done, which is summarized here. Let W_t denote the market value of national wealth at time t, and Y_t be conventionally defined net national income (NNI), which is gross national income less any depreciation in domestic capital assets (e.g. factories, machines, equipment, buildings, etc.) that occurs in producing national income each year. Similarly, S_t is conventional net national savings (NNS) at time t, which is gross savings also adjusted for domestic capital depreciation. Consequently, Piketty (2014) and Piketty and Zucman (2014) focus on three important relationships among these conventional indicators:

- Net wealth accumulation: $W_{t+1} - W_t = S_t$
- Net national saving rate: $S_t / Y_t = s_t$
- Wealth-income ratio: $W_t / Y_t = \beta_t$.

However, as argued by Barbier (2017), an economy also contains a stock of available natural resources for production, with market value at time t of $\tilde{N}_t \geq 0$. This

suggests that the *adjusted net wealth* of the economy is $W_t^* = W_t + \tilde{N}_t$. As wealth now includes an endowment of natural capital, net national income Y_t and net national savings S_t need to be adjusted for natural capital depreciated through its use in production over t and t+1. Let Y_t^* and S_t^* represent the adjustments to net national income (ANNI) and savings (ANNS) for any natural capital depreciation, respectively. This leads to three additional indicators:

- Adjusted net wealth accumulation: $W_{t+1}^* - W_t^* = S_t^*$
- Adjusted net national saving rate: $S_t^* / Y_t^* = s_t^*$
- Natural capital depreciation rate: $\left(\tilde{N}_{t+1} - \tilde{N}_t\right) / Y_t^* = n_t^*$.

Figure 4.1 outlines how the conventional economic indicators of gross and net national income can be adjusted for natural capital depreciation to derive *adjusted net national income* (ANNI). Similarly, Figure 4.2 shows how conventional gross and net savings can be adjusted to determine *adjusted net national savings* (ANNS).

Barbier (2017) also suggests that the savings rate s_t^* can also be expressed as a ratio with respect to the long-run average growth in ANNI per capita, $\bar{g}^*$. This leads to another indicator:

- Saving-ANNI growth ratio: $s_t^* / \bar{g}^*$.

Trends in this ratio indicate how the rate of wealth accumulation over time, $W_{t+1}^* - W_t^* / Y_t^*$, compares with the long-run growth rate of an economy.

The rest of this chapter explores long-run trends in s_t^*, n_t^* and $s_t^* / \bar{g}^*$ for high-income OECD, developing and low-income economies and the implications of these trends for the wealth and income inequality arguments of Piketty (2014). However, first we show the key trends that lead Piketty to conclude that inequality has been worsening in the major rich countries and the global economy.

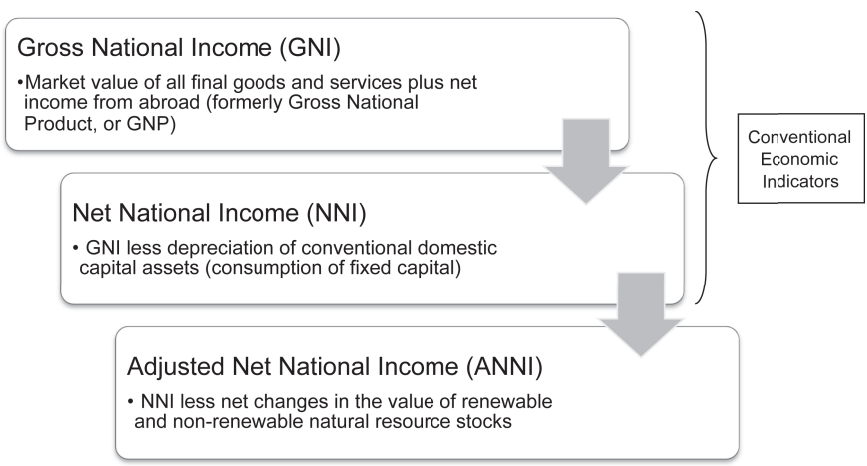

Figure 4.1 Net national income (NNI) adjusted for natural capital depreciation

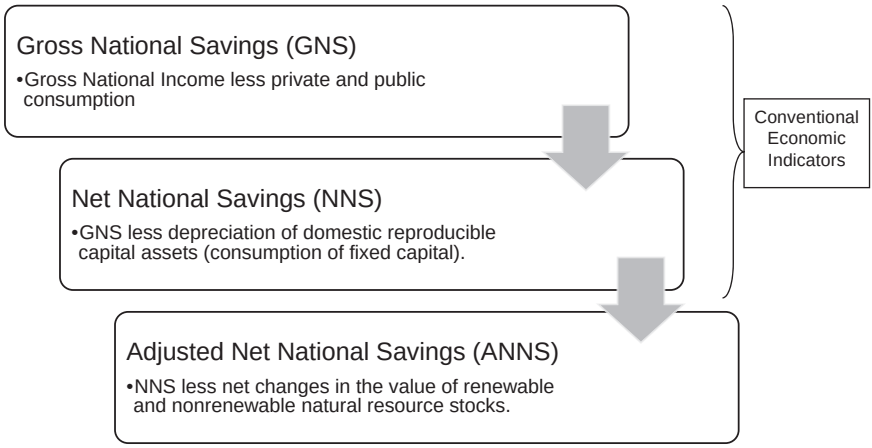

Figure 4.2 Net national savings (NNS) adjusted for natural capital depreciation

Financialization and inequality

Piketty (2014) argues that rising wealth and income inequality is attributed to several important features in the pattern of wealth accumulation in the world economy. First, the ratio of conventionally measured national wealth to income has increased steadily over 1970 to 2010 for the eight richest economies. Figure 4.3 recreates these trends in the wealth-income ratio $W_t/Y_t = \beta_t$ for these countries. For the past four decades the average trend in the wealth-income ratio (dotted line) for this group of wealthy economies has been rising. In 1970, wealth ranged from two to four years (200% to 400%) of national income for these countries, and by 2010 wealth was four to six years (400% to 600%) of income.

Piketty (2014) also notes that national wealth in rich countries is predominantly private wealth, and it comprises largely financial and industrial capital as well as urban real estate (i.e. housing). In contrast, agricultural land is no longer a significant share of wealth in these economies. In particular, the ratio of financial assets to national income has risen markedly, which Piketty calls the extensive "financialization" of rich countries and thus the global economy. Figure 4.4 replicates Piketty's trends in the financial asset-income ratio in rich economies from 1960–2010.[3]

Especially since the 1980s, the financial asset share of national income in all wealthy economies has risen sharply (see Figure 4.4). In 1980, this share amounted to four to nine years (400% to 900%) of income in these countries. By 2010, financial assets accounted for seven years (700%) of national income in Australia, ten to 15 years of income in the United States, Japan and Germany, and 20 years in the United Kingdom. As can be seen from comparing Figures 4.3 and 4.4, the financial asset share of national income has risen much more quickly than the overall wealth-income ratio in rich countries. It is this extensive and rapid "financialization" of the global structure of wealth that Piketty (2014) argues is the main cause of the jump in the growing income and wealth inequality in recent decades. In particular, the

Table 4.1 Increase in wealth of the world's rich, 1987–2013

	Wealth or income in:		*Average annual growth (%) 1987–2013*
	1980	*2013*	
The richest billionaires[a]	$3.4 billion	$32.3 billion	6.8%
Billionaires[b]	$1.6 billion	$14.0 billion	6.4%
Average world wealth per adult	$26,065	$76,628	2.1%
Average world income per adult	$7,759	$19,187	1.4%
World adult population	2.85 billion	4.68 billion	1.9%
World gross domestic product (GDP)	$22,119 billion	$89,719 billion	3.3%

Source: Thomas Piketty. 2014. *Capital in the Twenty-First Century*. Harvard University Press, Cambridge, MA, Table 12.1 and Supplementary Table S12.3 http://piketty.pse.ens.fr/capital21c.

All values are in US dollars, and adjusted net of inflation (2.3% per year from 1987 to 2013).

a About 30 adults out of 3 billion in the 1980s, and 45 adults out of 4.5 billion in 2010.
b About 150 adults out of 3 billion in the 1980s, and 225 adults out of 4.5 billion in 2010.

increasing gap between rich and poor is due to the increasing wealth of the world's rich, who benefitted most from the financialization of the world economy.

For example, based on estimates by Piketty (2014) compiled from data on billionaires' wealth in *Forbes* magazine, Table 4.1 indicates how the wealth of the very rich increased from 1987 to 2013 compared to average world wealth per adult. The richest billionaires in the world consisted of 30 adults out of 3 billion people in the 1980s, and their average wealth was US$3.4 billion in 1980. Their accumulated assets grew each year by 6.8% to 2013, totalling US$32.3 billion. Billionaires numbered 150 adults out of 3 billion in the 1980s, and their average wealth grew at 6.4% per year between 1987 and 2013, from US$1.6 billion to US$14.0 billion. In comparison, average world wealth per adult increased by only 2.1% annually from 1987 to 2013, and average income per person by just 1.4%. Thus, the wealth of the global rich appears to be growing much faster than that of the average individual.

Most analysts agree that, although data on long-run trends are available for only a handful of countries, the wealth of the super-rich – the wealthiest 1% of all adults – has been increasing since the early 1970s for some economies and since 1980 for others.[4] More importantly, worldwide:

- The top 1% today account for almost half of the all the wealth in the world,
- The richest 10% own 87% of all assets, and
- The lower half of the global population possess less than 1% of global wealth.[5]

Wealth inequality is not only continuing to rise but also spreading throughout the world economy. Table 4.2 depicts the level of inequality in 46 major economies and

Table 4.2 Trends in wealth inequality across countries, 2000–2014

	Change in wealth share of the top decile, 2000–2014						
	Rapid fall	*Fall*	*Slight fall*	*Flat*	*Slight rise*	*Rise*	*Rapid rise*
Top decile wealth share, 2014							
> 70% Very high inequality		Malaysia	Switzerland	Peru		*Brazil*	*Argentina*
(US ca. 1910)		Philippines		*South Africa*		*Indonesia*	Egypt
				Thailand			Hong Kong
				United States			*India*
							Russia
							Turkey
> 60% High inequality	Poland	Colombia	Denmark	Austria	Chile	Czech Republic	*China*
(US ca. 1950)	*Saudi Arabia*	*Mexico*	*Germany*	Norway		Israel	*South Korea*
				Sweden			Taiwan
> 50% Medium inequality		*Canada*		*Australia*	United Arab Emirates	*United Kingdom*	Spain
(Europe ca. 1980)		*France*		Finland			
		New Zealand		Greece			
		Singapore		Ireland			
				Italy			
				Netherlands			
				Portugal			
< 50% Low inequality			*Japan*	Belgium			

Source: Markus Stierli, Anthony Shorrocks, Jim Davies, Rodrigo Lluberas and Antonios Koutsoukis. 2014. *Global Wealth Report 2014*. Credit Suisse Research Institute, Zurich, Table 1, p. 30 and Table 2, p. 33.

Notes: The top decile is the wealthiest 10% of all adults.
Forty-six countries, with the Group of 20 (G20) countries indicated in italics. The members of the G20 include 19 countries (Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Turkey, the UK and the US), plus the European Union.

also indicates whether the level has been rising or falling from 2000 to 2014. Wealth inequality is high or very high in 30 of these countries. Moreover, since 2000, nine countries have experienced a rapid rise in inequality, five have seen a rise and three a slight rise. Of particular concern is that nine of these countries are members of the Group of 20, which comprises the largest and most populous economies. Wealth inequality also appears to be a problem for a number of developing economies, although for most of them it appears to be unchanged or falling.

If natural capital depreciation does matter for long-run wealth accumulation in all economies, including rich countries, then there may be further implications for Piketty's explanation of growing global inequality. Current measures of national wealth, income and saving that excludes natural capital depreciation likely exaggerate the actual increase in an economy's wealth over time, especially in those countries where accumulation of other forms of wealth is failing to compensate for diminishing natural capital. This suggests that income and wealth inequality may be even worse than in the global economy generally, as emphasized by Piketty (2014) and other scholars. To examine whether this is the case, the next section explores long-run trends in s_t^*, n_t^* and $s_t^*/\bar{g}^*$ for high-income OECD, developing and low-income economies.

Measuring adjusted net national income, saving and growth

The World Bank's World Development Indicators contain time-series of the value of net natural resource depletion, net national saving rates and adjusted net national income from 1970 to 2014 for most countries of the world (World Bank 2017). Using these data, it is possible to construct long-run trends in the natural capital depreciation rate n_t^*, the adjusted net savings rate s_t^*, and the saving-ANNI growth ratio $s_t^*/\bar{g}^*$ for high-income OECD, developing and low-income economies.

The World Bank defines the value of net natural resource depletion as the sum of net forest, fossil fuel and mineral depletion.[6] Net forest depletion is unit resource rents times the excess of round wood harvest over natural growth. Energy depletion is the ratio of the value of the stock of energy resources to the remaining reserve lifetime (capped at 25 years). It covers coal, crude oil and natural gas. Mineral depletion is the ratio of the value of the stock of mineral resources to the remaining reserve lifetime (capped at 25 years). It includes tin, gold, lead, zinc, iron, copper, nickel, silver, bauxite and phosphate.

The World Development Indicators (WDI) provide annual estimates over 1970–2014 of the World Bank's aggregate value of net natural resource depletion as a percentage of gross national income (GNI) for the eight high-income countries. Converting this estimate to natural resource depletion as a share of adjusted net national income (constant 2010 $), which is the natural capital depreciation rate n_t^*, involves multiplying the WDI's annual measure of net natural resource depletion as a percentage of gross national income (GNI) by its measure of GNI (constant 2010 $), and then dividing the result by the WDI's annual estimates of adjusted net national income (constant 2010 $).

Annual net national savings, which are gross national savings less the value of consumption of fixed capital, are also calculated as a percentage of GNI in the WDI. To estimate the adjusted net savings rate s_t^* requires first adjusting the annual net national savings rate for natural capital depreciation as a share of GNI, multiplying by GNI (constant 2010 $), and then dividing by adjusted net national income (constant 2010 $). Finally, the average annual growth of adjusted net national income per capita over 1970–2014, which is already estimated in the WDI, serves as the measure of $\bar{g}^*$.

OECD high-income countries

Figure 4.5 depicts the estimates over 1970–2014 of n_t^* and s_t^* averaged across 30 high-income countries that are also members of the Organization of Economic Cooperation and Development (OECD). They include the eight countries originally analysed by

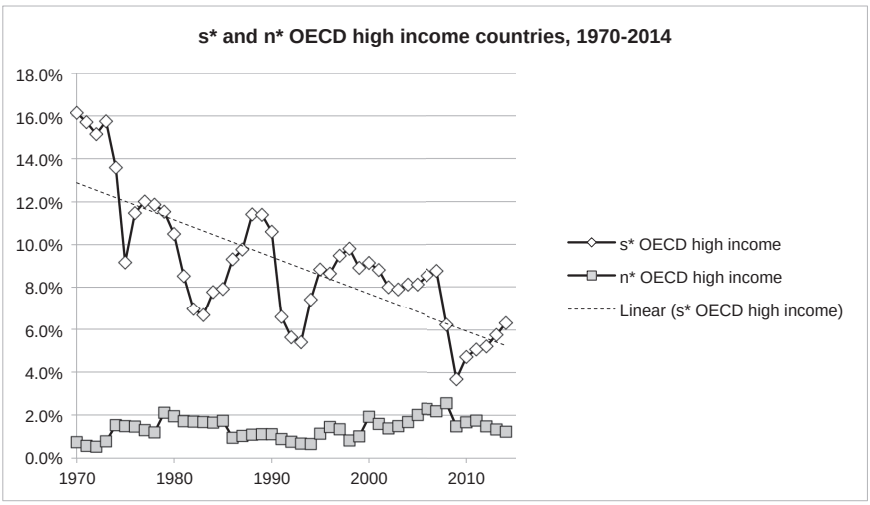

Figure 4.5 Adjusted net savings and natural capital depreciation in OECD high-income countries, 1970–2014

Notes: The 30 OECD high-income countries are Australia, Austria, Belgium Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Japan, Korea Republic, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, United Kingdom and United States. High-income economies are those in which 2015 GNI per capita was $12,476 or more.

The data are based on the World Development Indicators (World Bank 2017). The measure of s^* is gross national savings less the value of consumption of fixed capital and the value of net natural resource depletion as a % of adjusted net national income (constant 2010 US$); the measure of n^* is annual value of net natural resource depletion as a % of adjusted net national income (constant 2010 US$).

Over 1970–2014, the average s^* for these eight countries was 9.1%, and average n^* was 1.4%. The margin of error (95% confidence level) associated with the sample mean for s^* and n^* was 1.7 and 1.2, respectively.

Piketty (2014) – the United States, Japan, Germany, France, the United Kingdom, Italy, Canada and Australia.

The adjusted net savings rate for these countries declined considerably during these four decades. It was around 15%–16% in the early 1970s but from the mid-1990s to mid-2000s hovered around 8%–10%. The savings rate fell to below 4% during the Great Recession, but has recovered since to above 6%. On average from 1970 to 2014, s_t^* was 9.1% (see Figure 4.5). In contrast, natural capital depreciation has remained between 1% and 2% of adjusted net national income for most of the past 40 years. Thus, it appears that s_t^* and n_t^* have been converging for the rich economies of the world. The long-run fall in the adjusted net savings rate indicates that, in these economies, there is less accumulation of other forms of capital each year to compensate for ongoing natural capital depreciation. The result is that the overall annual accumulation in adjusted net wealth relative to income has been trending downwards since the 1970s.

Figure 4.6 shows the estimate in the saving-ANNI growth ratio $s_t^* / \bar{g}^*$ averaged for the 30 OECD high-income economies over 1970–2014. For illustrative purposes, the figure also includes the trend in the (conventional) capital-income ratio $\beta_t = W_t / Y_t$ averaged for the eight rich countries over 1970–2010 that was estimated by Piketty and Zucman (2014). Finally, Figure 4.6 also includes the average $s_t^* / \bar{g}^*$ ratio over the four decades.

The trend in β_t depicted in Figure 4.6 confirms Piketty's finding that the capital-income ratio for the eight wealthiest countries has increased steadily over 1970 to 2010. In 1970, their average capital-income ratio was around 340% (i.e. more than three years) of national income, and has risen to 525% (more than five years) of national income in 2010.[7]

In contrast, the saving-ANNI growth ratio for all 30 OECD high-income countries displays a distinctly downward trend. In the early 1970s, this ratio was around 700%, which suggests that the annual rate of adjusted net wealth accumulation was more than seven times the long-run average growth rate for the 30 countries over 1970–2014. But since the mid-2000s, the $s_t^* / \bar{g}^*$ ratio has fallen below 300%, which indicates that the rate of adjusted net wealth accumulation each year has been less than three times the growth rate. On average over 1970–2014, the saving-ANNI growth ratio was 422%, i.e. the rate of adjusted net wealth accumulation each year was four times long-run growth.

The falling trends in s_t^* and $s_t^* / \bar{g}^*$ depicted in Figures 4.5 and 4.6 indicate that the rate of net national saving adjusted for natural capital depreciation has declined even faster than any slowdown in long-run growth in rich economies from 1970 to 2014. This could have implications for long-run adjusted net wealth relative to income in these countries. For example, it is possible that the decline in saving-ANNI growth ratio over the past four decades in OECD high-income countries will continue into future years. If so, the rate of net wealth accumulation relative to growth will continue to fall well below the average rate of 422% over 1970–2014. Verifying this possible long-run trend will require more analysis of these trends in the coming years.

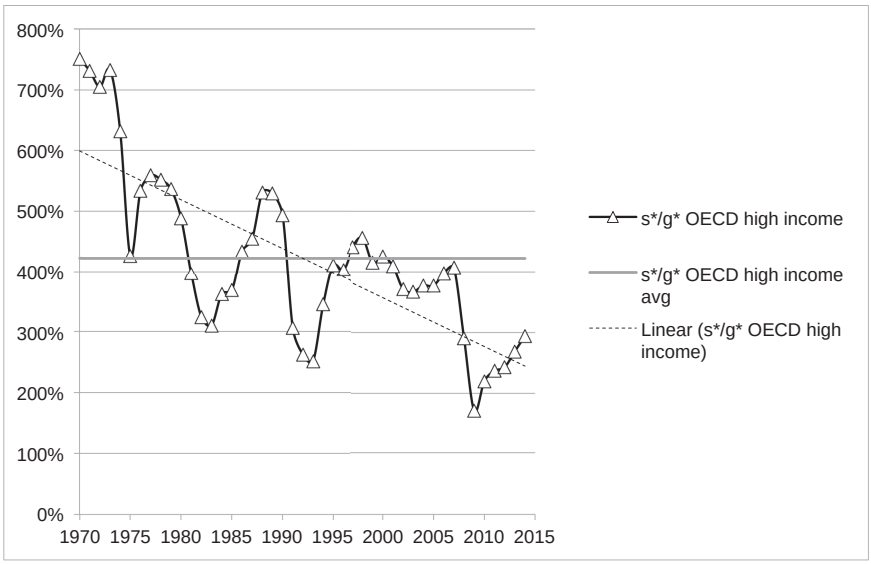

Figure 4.6 Wealth-income accumulation relative to growth in OECD high-income countries, 1970–2014

The 30 OECD high-income countries are Australia, Austria, Belgium Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Japan, Korea Republic, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, United Kingdom and United States. High-income economies are those in which 2015 GNI per capita was $12,476 or more.

β is the capital / income ratio averaged for eight countries over 1970–2010, based on the national income-national wealth annual data series in Table A1 of the online technical appendix accompanying Piketty and Zucman (2014), available at http: / / piketty.pse.ens.fr / en / capitalisback (Accessed 12 June 2014). The eight countries are the United States, Japan, Germany, France, United Kingdom, Italy, Canada and Australia.

The data for constructing the s^* / g^* ratio are based on the World Development Indicators (World Bank 2017). The measure of s^* is gross national savings less the value of consumption of fixed capital and the value of net natural resource depletion as a % of adjusted net national income (constant 2010 US$); the measure of g^* is average annual growth of net national income per capita adjusted for the value of net natural resource depletion (constant 2010 US$).

Over 1970–2014, the average s^* for these eight countries was 9.1%, and g^* was 2.1%; consequently, the average s^* / g^* ratio for this period was 422%. The margin of error (95% confidence level) associated with the sample mean for s^* and g^* was 1.7 and 0.5, respectively.

Developing countries

In comparison, very different trends in s_t^*, n_t^* and $s_t^* / \bar{g}^*$ have occurred for low and middle-income countries over the past few decades.

Figure 4.7 indicates the average annual rates of adjusted net saving s_t^* and natural capital depreciation n_t^* for 113 developing economies from 1970 to 2014. Both rates

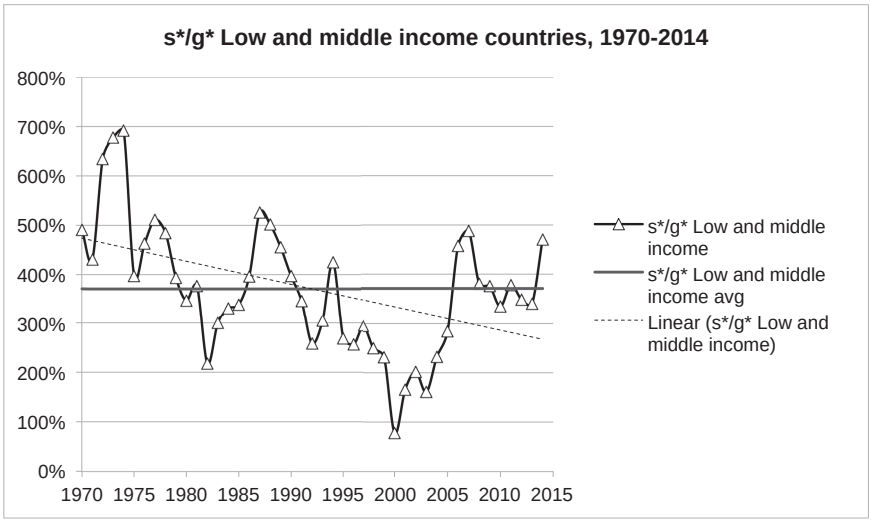

Figure 4.8 Wealth-income accumulation relative to growth in developing countries, 1970–2014

Notes: Based on a sample of 113 low and middle-income (or developing) countries, which are economies with 2015 per capita income of $12,475 or less.

The data for constructing the s^*/g^* ratio are based on the World Development Indicators (World Bank 2017). The measure of s^* is gross national savings less the value of consumption of fixed capital and the value of net natural resource depletion as a % of adjusted net national income (constant 2010 US$); the measure of g^* is average annual growth of net national income per capita adjusted for the value of net natural resource depletion (constant 2010 US$).

Over 1970–2014, the average s^* for the sample of developing countries was 6.5%, and g^* was 1.8%; consequently, the average s^*/g^* ratio for this period was 371%. The margin of error (95% confidence level) associated with the sample mean for s^* and g^* was 2.1 and 1.4, respectively.

the long-run average of 371%. This is still slightly lower than the average ratio of 422% over 1970–2014 for the OECD high-income economies (see Figure 4.6). It is unclear whether the long-run average $s_t^* / \bar{g}^*$ ratio for developing countries will rise, as that will require the current trend of accumulating more net wealth relative to increasing income to continue into the future.

Low-income countries

As shown in Figure 4.9, the adjusted net saving rate across 28 low-income economies has averaged 0.1% over 1975–2014, which is much lower than the average rate of 6.5% for s_t^* over 1970–2014 for all 113 developing countries (see Figure 4.7). Moreover, for low-income countries, there is still a considerable gap between the long-run adjusted net saving rate and the natural capital depreciation rate, which is 6.9%. Although s_t^* has been rising since 1995 for poor economies, so has n_t^*. The result is that the gap between these two rates is still considerable, and may even be growing.

Figure 4.9 Adjusted net saving and natural capital depreciation in low-income countries, 1970–2014

Notes: Based on a sample of 28 low and middle-income (or developing) countries, which are economies with 2015 per capita income of $1,025 or less.

The data are based on the World Development Indicators (World Bank 2017). The measure of s^* is gross national savings less the value of consumption of fixed capital and the value of net natural resource depletion as a % of adjusted net national income (constant 2010 US$); the measure of n^* is annual value of net natural resource depletion as a % of adjusted net national income (constant 2010 US$).

Over 1970–2014, the average s^* for these developing countries was 0.1%, and average n^* was 6.9%. The margin of error (95% confidence level) associated with the sample mean for s^* and n^* was 4.7 and 4.3, respectively.

Since the mid-2000s the adjusted net saving rate for low-income countries has fluctuated between 0% and 2%, whereas the rate of natural capital depreciation has risen from 8%–9% to around 13%–15%.

These trends in s_t^* and n_t^* have important implications for long-run wealth-income accumulation relative to growth in poor economies (Figure 4.10). First, the long-run average growth in ANNI per capita $\overline{g}^*$ was only 0.5% for low-income countries over 1975–2014, which was much lower than the long-run rate for all developing countries of 1.8% (see Figure 4.8). Consequently, the average ratio of adjusted net saving to this growth rate over this period was only 24%, and there have been long stretches over the past four decades when this ratio has been significantly negative (see Figure 4.10). However, since 2000 the $s_t^* / \overline{g}^*$ ratio for the 28 low-income economies has been rising, and over 2005–2014 has averaged 190%. If this positive trend continues, then low-income countries will continue to experience accumulation in net adjusted wealth at a faster pace than long-run per capita income growth.

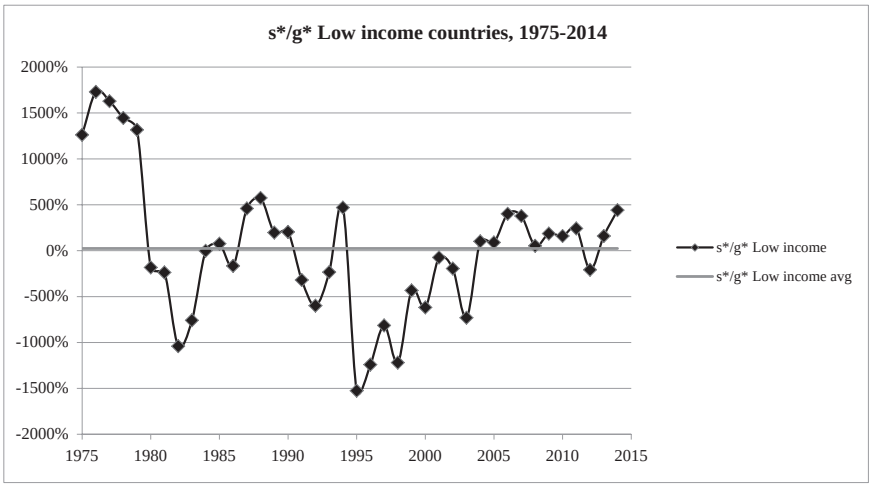

Figure 4.10 Wealth-income accumulation relative to growth in low-income countries, 1975–2014

Notes: Based on a sample of 28 low and middle-income (or developing) countries, which are economies with 2015 per capita income of $1,025 or less.

The data for constructing the s^*/g^* ratio are based on the World Development Indicators (World Bank 2017). The measure of s^* is gross national savings less the value of consumption of fixed capital and the value of net natural resource depletion as a % of adjusted net national income (constant 2010 US$); the measure of g^* is average annual growth of net national income per capita adjusted for the value of net natural resource depletion (constant 2010 US$).

Over 1975–2014, the average s^* for the sample of developing countries was 0.1%, and g^* was 0.5%; consequently, the average s^*/g^* ratio for this period was 24%. The margin of error (95% confidence level) associated with the sample mean for s^* and g^* was 4.7 and 1.0, respectively.

To summarize, the high and rising rate of natural capital depreciation in low-income countries remains a concern. Although the rate of adjusted net saving has been rising since 1995, the fact that it remains very low – less than 2% – implies that in poor countries accumulation of other forms of wealth is not keeping pace with ongoing natural capital depreciation. The increase in wealth-income accumulation relative to growth in poor economies is encouraging, but this is in large part due to the very low growth in ANNI per capita over the long-run (0.1%) in these countries. Reducing natural capital depreciation and increasing accumulation of other forms of capital is essential to improving long-run net wealth accumulation in poor economies over the long-term.

Implications for wealth-income ratios and inequality

As the above analysis indicates, the wealth-income ratios for OECD high-income economies over the past four decades are clearly influenced by the depreciation of key natural resources essential to domestic production, such as fossil fuels, minerals and forests. Although there may have been substantial accumulation of wealth

relative to income, natural capital depreciation in this rich economies is being compensated less and less each year by net increases in other forms of capital. This implies that wealth accumulation, net of natural capital depreciation, has declined as a share of national income. As depicted in Figure 4.5, this trend has been steadily falling over the past four decades.

If these trends for rich countries continue into the future, there will be even less net wealth creation relative to growth in these economies. If this is accompanied by increased financialization as observed by Piketty (2014), then the result will be worsening wealth and income inequality. Recall that Piketty finds that national wealth in rich countries is predominantly private wealth, and it comprises largely financial and industrial capital as well as urban real estate (i.e. housing), and it is this concentration of wealth that is the source of much of the inequality in these countries and the global economy. If overall wealth accumulation net of natural capital depreciation as a share of national income is falling while private financial wealth is rising, then the gap between rich and poor will continue to widen in all economies (see Tables 4.1 and 4.2). Not surprising, studies of inequality in OECD countries already suggest that the problem is a serious one for these economies (OECD 2011).

For developing countries, although net wealth accumulation appears to have increased relative to income in recent years (see Figure 4.7), the high rate of natural capital depreciation remains a concern. Over the long-run, the current rate of over 7% across all low and middle-income countries may adversely affect their net wealth accumulation. The overall trend of saving to ANNI growth has also been negative over the past four decades (see Figure 4.8). Finally, as indicated in Table 4.2, wealth inequality appears to be a problem for some developing economies. High rates of natural capital depreciation that reduce net wealth accumulation in low and middle-income countries will only exacerbate this problem.

The high and rising rate of natural capital depreciation in low-income countries is a major concern (see Figure 4.9). The long-run average rate is around 7%, but in recent years it has climbed from 8%–9% to 13%–15%. The gap with the current adjusted net saving rate, which is 0%–2%, is therefore considerable, and indicates that investment in other forms of wealth is failing to compensate for the high rate of natural capital loss in poor economies. Not surprisingly, the long-run average growth in ANNI per capita (0.5%) and net saving relative to this growth (24%) is extremely low for these countries. Although it is difficult to determine the implications for wealth inequality in low-income economies, the lack of progress in net wealth accumulation does not bode well for either fostering sustainable development or reducing any inequality.

Conclusion

This chapter has demonstrated that it is possible to reconcile the inclusive wealth approach with Piketty's efforts to analyse long-run trends in wealth-income ratios and the composition of wealth for major economies. Moreover, given improved data sources, it is feasible to extend such an analysis to a wider set of economies. Here, the approach of adjusting to net national saving, income and growth for natural capital depreciation has been extended to 30 high-income economies that are members of

the Organization for Economic Cooperation and Development (OECD) over 1970 to 2014. We have also examined the resulting implications for net wealth accumulation and inequality that have been observed by Piketty (2014) and other studies.

These trends have several important implications. For the OECD high-income countries, the long-run convergence of adjusted net savings rates with natural capital depreciation rates should raise concerns about overall wealth creation and growing inequality in these economies. For these countries, policies to encourage more economy-wide investment in other forms of capital to raise adjusted net saving rates, and especially the long-run rate of net wealth accumulation relative to growth, are urgently needed. Although human capital accumulation is not included in the analysis of this chapter, there is also concern that investments in skills, training and education in these economies are lagging in these economies, both absolutely and relative to natural resource use (Barbier 2015; Goldin and Katz 2008; OECD 2011).

For developing countries, although net wealth accumulation appears to have kept pace with income growth in recent years, the high rate of natural capital depreciation is worrisome, especially in low-income economies where the problem appears to be worsening. Over the long-run, these high rates of depreciation are bound to affect adversely the sustainability of development efforts and to worsen inequality. A key focus of policies should be to improve the efficiency and sustainability of natural resource use so that natural capital depreciation in developing countries is diminished substantially. This could be especially important for low-income countries, where reducing natural capital depreciation may prove instrumental to improving the adjusted net wealth-income ratio of these poorer economies over the long-run.

To verify the long-run trends in net national saving, income and income growth adjusted for natural capital depreciation will require long-term data on natural capital stocks as well as depreciation rates. As we develop better measures of natural capital stocks and depreciation for 70–100 years or even longer, other considerations need to be taken into account, such as the role of demographic transitions, total factor productivity changes, appropriate accounting for long-run natural capital asset and price appreciation, and the economic contributions of ecosystems and other environmental assets beyond fossil fuels, minerals and forests (Arrow et al. 2012; Fenichel and Abbott 2014; Greasley et al. 2014).

Finally, the long-run trends identified here confirm a bigger issue, which is explored by Barbier (2015). Namely, the world economy faces two major threats: increasing natural resource degradation and the growing gap between rich and poor. These two threats are symptomatic of a growing structural imbalance in all economies, which is how nature is exploited to create wealth and how it is shared among the population. As argued by Barbier (2015), the root of this imbalance is that natural capital is underpriced, and hence overly exploited, and the resulting proceeds are insufficiently invested in accumulating other forms of wealth, especially human capital. The long-run trends in net national saving, income and income growth analysed for rich and poor economies in this chapter gives some indication of this structural imbalance. We need further development of such indicators – and perhaps others too – to shed further light on the possible links between growing environmental and natural resource scarcity and inequality in all economies.

Appendix

Adjusting conventional national income and savings for natural capital depreciation

Following the approach developed by Barbier (2017), it is possible to modify the conventional income and savings measures used by Piketty (2014) and Piketty and Zucman (2014) to allow for natural capital depreciation.

Following their approach and notation, let W_t denote the market value of national wealth at time t, and S_t is the net national savings flow between time t and t+1. In the absence of any capital gains or losses between t and t+1, then wealth accumulation is simply $W_{t+1} - W_t = S_t$. If Y_t is net national income (i.e. national income less domestic capital depreciation) at time t, then the corresponding net national saving rate in the economy is $s_t = S_t / Y_t$ and the ratio of wealth (or capital) to income is $\beta_t = W_t / Y_t$.

Suppose that, in addition to W_t, an economy also contains a stock of available natural resources for production, with market value at time t of $\tilde{N}_t \geq 0$. The total wealth of the economy at time t is therefore $W_t^* = W_t + \tilde{N}_t$. As wealth now includes an endowment of natural capital, both net national income and net national savings in time t should be adjusted for any depreciation of natural capital depletion through its use in production over t and t+1, net of any changes in the endowment due to new discoveries over the year and also renewable resource growth. Barbier (2017) refer to this modification of Piketty's definition of wealth W_t^* as *adjusted net wealth*.

Let Y_t^* and S_t^* represent the adjustments to net national income and savings for any natural capital depreciation, respectively. It follows that the accumulation in adjusted net wealth between t and t+1 is

$$W_{t+1}^* - W_t^* = S_t^*.$$

Dividing both sides by adjusted net national income Y_t^* yields

$$\frac{W_{t+1}^* - W_t^*}{Y_t^*} = \frac{\Delta W^*}{Y_t^*} = s_t^*, \tag{1}$$

where $s_t^* = S_t^* / Y_t^*$ is the net national saving rate adjusted for natural capital depreciation, or the *adjusted net saving* rate. As equation (1) states, s_t^* is an indicator of the annual change in wealth (inclusive of natural capital) relative to net national income (adjusted for natural capital depreciation).[8]

The saving rate s_t^* can also be expressed as a ratio with respect to the long-run average annual growth in adjusted net national income per capita. For any period of T years, the latter growth rate is $\bar{g}^* = \frac{1}{T}\sum_{t=0}^{T-1}\frac{\Delta Y_t^*}{Y_t^*}$. Consequently,

$$\frac{s_t^*}{\bar{g}^*} = \frac{\Delta W^*/Y_t^*}{\bar{g}^*}. \tag{2}$$

The ratio indicates how annual changes in adjusted net wealth relative to income compare with the average annual income growth per capita over some defined time period of T years. For example, if this growth rate is 2% per year, and adjusted net saving is 10%, then the rate of adjusted net wealth accumulation each year is 500% of long-run growth. However, if the adjusted net saving rate falls to 4%, then the rate of annual wealth accumulation relative to income is only 200% of $\bar{g}^*$. Thus, this ratio is an important indicator as it depicts, over a defined period of T years, how the annual rate of net wealth accumulation compares to long-run growth over that period. Consequently, if there is a discernible trend in the $s_t^*/\bar{g}^*$ ratio, it indicates whether or not adjusted net wealth is accumulating relative to increases in income in economies over the long-term.

Notes

1 See also Piketty and Zucman (2014) for a more detailed modelling approach and investigation of the 1970–2010 wealth trends analysed by Piketty (2014). Note that both Piketty and Zucman (2014) and Piketty (2014) use the terms "national wealth" and "national capital" interchangeably.

2 See the appendix of Barbier (2017), which shows analytically how the one-good wealth accumulation model of Piketty and Zucman (2014) can be modified to allow for natural capital depreciation in the context of intertemporal optimizing behaviour.

3 Piketty (2014) and Piketty and Zucman (2014) estimate financial assets as the total amount of financial assets and liabilities held by various sectors (household, corporations, government agencies) of an economy. Thus, this estimate of financial assets can exceed their measure of national wealth for some countries in some years.

4 See, for example, Alvaredo et al. (2013) and Stierli et al. (2014). The ten countries with long-term wealth inequality data that are the focus of Stierli et al. (2014) are Australia, Denmark, Finland, France, the Netherlands, Norway, Sweden, Switzerland, the United Kingdom and the United States. Alvaredo et al. (2013) also analyse long-term trends for Canada and Japan, but not Denmark, Finland, the Netherlands, Norway and Switzerland.

5 Stierli et al. (2014, p. 13).

6 Further details on this methodology can be found in World Bank (2011) and in the notes accompanying World Bank (2017). Although the depreciation of key natural resources, such as fisheries and fresh water supplies, are missing from this measure, the net depletion of subsoil assets and forests by economies accounts for much of their natural capital used up in current production and wealth accumulation.

7 However, Jones (2015) shows that, when the value of the capital stock for the United States, France and the United Kingdom calculated by Piketty and Zucman (2014) and Piketty (2014) excludes land and housing, the rise in the capital-output ratios for

each of these three countries in recent decades is more gradual. For example, in France, "the rise in the capital-output ratio since 1950 is to a great extent due to housing, which rises from 85 percent of national income in 1950 to 371 percent in 2010" (Jones 2015, p. 41).

8 As shown in the appendix to Barbier (2017), the adjusted net savings rate is also an indicator of the annual change in adjusted net wealth per capita relative to adjusted net national income per capita $s_t^* = \frac{\Delta \hat{W}^*}{\hat{Y}_t^*}$, where η_t represents population growth and a "hat" (^) indicates a per capita variable.

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5 Challenges to ecosystem service valuation for wealth accounting

Kristine Grimsrud, Henrik Lindhjem, David N. Barton, and Ståle Navrud

1. Introduction

The inclusive wealth framework is a tool to analyse "society's sustainability" (Dasgupta and Duraiappah 2012), which may be interpreted as non-declining human well-being over time. Dasgupta and Duraiappah (2012, p. 22) argues that the best index to track human well-being over time is society's wealth, where "wealth is the social worth of an economy's capital assets". Further, the inclusive wealth framework defines the aggregate wealth as the shadow value (or price) of the stocks of all assets of an economy, and suggests that ecosystems should be included as an important form of "natural capital" in this wealth. Shadow values are a key measure to inclusive wealth. Dasgupta and Duraiappah (2012) define the shadow price / value of a capital asset as the monetary measure of the contribution a marginal unit of that asset is forecast to make to human well-being. The shadow value is thus a more comprehensive measure of value than, for example, (unadjusted) market prices. Shadow prices internalize environmental (and other) externalities and capture the substitutability of the capital assets not just in the present period but also in the future. The inclusive wealth framework can accommodate non-linear processes of natural systems and provide early warnings in the process to avert such thresholds from being reached if the shadow prices are estimated using certain valuation methods (e.g. the so-called production function approach).

The major challenge, however, is to estimate the shadow prices of the natural and ecosystem capital assets. For example, we do not have full knowledge of the production functions of life supporting systems. Dasgupta and Duraiappah (2012) recognize that we may never get the shadow prices "right," instead we can simply try to estimate the range in which they lie. The next best solution, they argue, is to use shadow prices based on willingness to pay measures, while recognizing that these shadow prices may not capture threshold effects of an ecosystem (Farley 2012).

The inclusive wealth accounting framework proposes to expand the net domestic product (NDP), which equals the gross domestic product (GDP) adjusted for appreciation / depreciation of capital, as is currently measured in most national economies, in two ways:

1. The NDP should include the depreciation or appreciation of human and natural capital (i.e. natural resources and ecosystems) as well.
2. The basis for valuing the capital stocks should be shadow prices. Exchange values as is currently used in statistical offices may be used if the exchange values are a good approximation to the shadow prices.

In the System of National Accounts (SNA) goods are valued using exchange values when such values are available. The reason is that national accounts aim to provide a measure of production, not welfare as such, and therefore exclude consumer surplus. While the exchange value often is the market price, it is important to be aware of some slight nuances between the concept of a market price and an exchange value. Market prices depend on level of scarcity and on market conditions. The following definition has been used for market price: "Market prices are the amounts of money that willing purchasers pay to acquire goods, services or assets from willing sellers" (EC et al. 2009, para 3. 119). In national accounting one refers to "exchange values" and not to "market prices" where an exchange value is "the value at which goods, services and assets are exchanged regardless of the prevailing market conditions" (Obst et al. 2016).

The inclusive wealth accounting framework and the System of Environmental Economic Accounting (SEEA) (United Nations et al. 2014a) of the UN have several challenges in common in terms of valuing natural resources and ecosystems. Both accounting frameworks have as a goal to account for the importance of ecosystem and natural capital stocks to society. SEEA aims to better account for the relationships between the economy and the environment and the stock of environmental assets and how environmental assets benefit humanity. The inclusive wealth framework considers the impact of changes in capital stocks on human welfare. A major difference between the two accounting frameworks, is that inclusive wealth requires shadow prices for valuing capital stocks while SEEA requires exchange values in valuing capital stocks. Exchange values are required by the latter to be consistent with the accounting framework of the System of National Accounts (SNA), which countries use to estimate the asset value of produced capital stocks.

Here we focus on the SEEA system for ecosystem accounting, SEEA Experimental Ecosystem Accounting (SEEA EEA) (United Nations et al. 2014b). SEEA EEA has a goal to account for the contribution of ecosystems to production and consumption of economic units including households – where the concept of production and consumption is broader than the standard SNA to include all types of contributions from ecosystems to economic units (Obst 2017, pers. comm.). Both the inclusive wealth framework and the SEEA EEA framework rely on non-market valuation methods for ecosystem assets. SEEA EEA requires that the non-market valuation methods are consistent with the methods used in the field of accounting. The inclusive wealth framework has in past reports drawn more generally on the non-market valuation methods used in environmental economics, and so far, a large number of studies using these methods have been performed. Thus, there is a need to clarify and bridge the gap between the disciplines of accounting and environmental economics when it comes to non-market valuation.

At the same time, there are challenges with the non-market valuation methods that are accepted within both the accounting and the environmental economics communities. Since many of the challenges with using the valuation methods are the same for both accounting frameworks, we will discuss some of the progress that has been made on meeting these challenges in the last version of the SEEA EEA (United Nations 2014b) and the associated draft Technical Recommendations (United Nations 2017).[1] As development and practical implementation and testing

of SEEA EEA are moving forward, many of the measurement challenges with valuation of ecosystem services will become better understood and potential solutions are already being discussed. This progress of SEEA EEA is of great relevance for addressing many of the measurement challenges within the inclusive wealth framework (Perrings 2012). A criticism from the accounting community of the various forms of "green accounting" and different indicators proposed to measure macroeconomic welfare in the economic literature, where inclusive wealth is one of several such indicators, has been that they are situated at a very "high level of abstraction without searching any longer for any relationship to actual national accounting measurements" (Vanoli 2005; Obst et al. 2016).

In this chapter we provide an overview of recent progress on the SEEA. In Section 3 we discuss the inclusions of spatially explicit physical and monetary accounts for ecosystems (SEEA EEA). In Section 4 we discuss some key challenges and ways forward for monetary valuation of ecosystem services, benefits and assets within this accounting framework. We use examples from Norway as illustrations. We end the chapter by discussing some limitations of the SEEA accounting framework and future directions.

2. System of Environmental Economic Accounting (SEEA)

The main goal of the SEEA is to better monitor the interactions between the economy and the state of the environment to inform decision-making, typically at the national level. The SEEA framework is consistent with the System of National Accounts (SNA) to facilitate the integration of environmental and economic statistics and the adoption of the SEEA system by national statistical offices. Compared to SNA, the SEEA framework expands the production boundary with the aim to include the whole biophysical environment and a broader set of ecosystem services. SEEA 2012 (United Nations et al. 2014a) builds upon revisions of SEEA 2003 (discussed in the Inclusive Wealth Report 2012 by Perrings (2012)) and SEEA 1993. SEEA contains the internationally agreed upon concepts for producing internationally comparable statistics on the environment and its relationship with the economy. By 2014, 18% of UN member countries had initiated a programme to enhance Environmental Economic Accounting, and 27% of developing countries and 8% of developed countries had a programme for Environmental Economic Accounting. Thus, the current initiatives of the United Nations Statistical Commission (UNSC) to revise and improve the SEEA system appear to be welcomed by member countries. SEEA consists of three parts:

- The SEEA Central Framework (SEEA CF).
- The SEEA Experimental Ecosystem Accounting (SEEA EEA).
- The SEEA Subsystems for Energy, Water, Fisheries and Agriculture. The "subsystems" are consistent with SEEA, but provide further details on specific topics.

The central framework of SEEA, SEEA CF, accounts for individual resources such as timber resources, land, energy and minerals resources, physical environmental flows (such as water, energy, emissions and waste) and environmentally related

transactions within the economy (such as environmental protection expenditure and environmental taxes). The SEEA CF was adopted by UNSC in 2012 as the first international standard for environmental economic accounting. The official version of SEEA CF was published in 2014.

Since the publication of the previous Inclusive Wealth Reports, rapid progress has been made in the effort to develop an accounting system for ecosystem flows and assets both in physical and monetary terms through the work on the SEEA Experimental Ecosystem Accounting (SEEA EEA). In 2013, the UNSC endorsed SEEA EEA for further development and testing, and the accounting framework was published in 2014. The SEEA EEA: Technical Recommendations (SEEA EEA TR) presents information that supports the testing and research on SEEA EEA and is motivated by the practical experiences with the accounting framework and advances in thinking on specific topics since the first SEEA EEA (United Nations 2017). The SEEA EEA TR is under revision, and work has been initiated to revise the SEEA EEA by 2020.

Monetary valuation of ecosystem services in SEEA EEA is motivated by several perspectives: input for wealth accounting, demonstration of the contribution of ecosystems to human welfare, and evaluation of policy alternatives. SEEA EEA provides insight into how ecosystems can be considered a form of capital that can appreciate and depreciate, in the same way as other forms of capital such as human, social and economic capital.

The development of the necessary accounting compatible concepts for a spatially explicit accounting system for ecosystem assets and their services is a challenging task, and currently work is in progress. The concepts and thinking developed and implemented in SEEA EEA to date should be helpful in contributing to improve inclusive wealth accounting of natural capital.

3. SEEA Experimental Ecosystem Accounting

SEEA EEA contains spatially explicit physical and monetary accounts for ecosystems. As such, compiling the accounts requires a multidisciplinary approach. To determine rates of asset appreciation or depreciation one also needs these accounts to be compiled regularly over time. SEEA EEA is termed experimental because many concepts for such spatially explicit and repeated accounts for ecosystem services and assets are still under testing and development (see e.g. Remme et al. 2015).

As noted above, the work on developing the SEEA EEA accounts is progressing fast. In the experimental phase the focus is generally on policy relevant case studies where concepts are being developed and tested. In this phase, numbers may not be as accurate as one would desire, but several argue that having approximate numbers that map ecosystems and that can demonstrate their importance to the general economy may be better than the current practice of implicitly valuing ecosystems through our decisions concerning maintaining or transforming ecosystems. Bateman et al. (2013, 2011) show, for example, in the context of the UK National Ecosystem Assessment (UK NEA), that taking account of multiple environmental objectives in systematic environmental and economic analysis of the benefits and costs of land use options, fundamentally alters decisions regarding optimal land use.

Figure 5.1 provides an overview of the conceptual thinking for the ecosystem accounting in SEEA EEA. At the basis for the accounting system are ecosystems. In the accounting terminology, individual contiguous ecosystems are considered ecosystem assets (element 1 in Figure 5.1).[2] Ecosystems are characterized by their

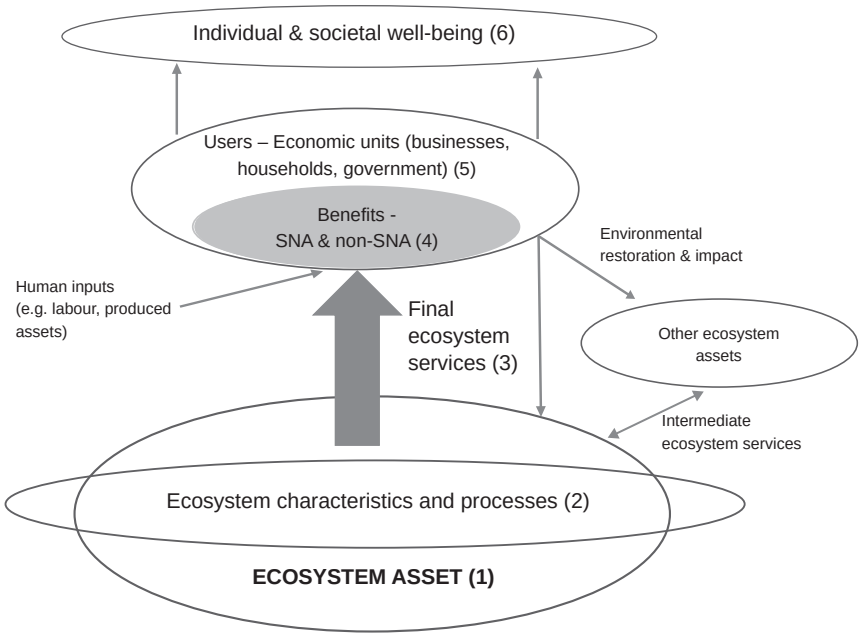

Figure 5.1 Ecosystem accounting framework for SEEA EEA
Source: United Nations (2017).

extent, biotic and abiotic components and their processes. Ecosystem assets may be aggregated into the ecosystem types, for example forests or agricultural ecosystems within the accounting area under study. Ecosystem types are ecosystems with similar ecology and use and are typically not contiguous.

The relevant characteristics and processes describe the ecosystem functioning (element 2). An ecosystem asset delivers ecosystem services, and the focus in SEEA EEA is on final ecosystem services (United Nations et al. 2014b) consistently with Banzhaf and Boyd (2012) and UK NEA (2011) (element 3 in Figure 5.1). Final ecosystem services are either, benefits to users (economic units) directly in themselves or the ecosystem service can be thought of as being an input to production of benefits along with other inputs such as labour and produced assets (e.g. built capital). Both for accounting purposes and for monetary valuation it is important to clarify this distinction between ecosystem services and ecosystem benefits (United Nations et al. 2014b; Banzhaf and Boyd 2012). Making this distinction helps to avoid double counting. The SEEA EEA uses the classification of final ecosystem services into provisioning services (i.e. those relating to the supply of food, fibre, fuel and water); regulating services (i.e. those relating to actions of filtration, purification, regulation and maintenance of air, water, soil, habitat and climate); and cultural services (i.e. those relating to the activities of individuals in, or associated with, nature).

The benefits that are produced by ecosystem services may either be so-called SNA benefits meaning they are already accounted for in SNA (e.g. timber products) or they may be non-SNA benefits, which means they are benefits that are outside the

accounting boundary of SNA (e.g. flood protection) (see element 4 in Figure 5.1). It is important to be clear about whether an ecosystem service has already been accounted for in SNA to prevent potential double counting. It is important to make the role of ecosystem services explicit also for those ecosystem services that presently are within the accounting boundary of SNA.

The supply of final ecosystem services is matched with the economic units that receive the benefits (element 5 in Figure 5.1). The economic units are businesses, households and the government. To be consistent with the accounting framework, supply of ecosystem benefits must equal use. The benefits contribute to "individual and societal well-being," the measure of which – according Figure 5.1 – is the ultimate purpose of the accounting framework. As we will discuss, this stated purpose may be misleading because the valuation methods that are consistent with accounting only aim to quantify ecosystems contribution to the economy, not societal well-being or welfare. The accounting system is designed to account for benefits both in terms of physical production and in monetary units where possible.

It should be noted that intermediate ecosystem services are also identified in the framework. Intermediate ecosystem services are those ecosystem services that are inputs to the supply of other ecosystem services. In ecosystem accounting, if one ecosystem produces services that contribute to produce ecosystem services in another ecosystem (e.g. pollination and flood control) these are also considered intermediate (SEEA EEA TR, paragraph 5.40).

Further, the SEEA EEA has five core accounts:

1 Ecosystem extent account – physical terms
2 Ecosystem condition account – physical terms
3 Ecosystem services supply and use account – physical terms
4 Ecosystem services supply and use account – monetary terms
5 Ecosystem monetary asset account – monetary terms

Figure 5.2 describes the relationship between these accounts as a series of physical (a) and monetary (b) steps, arriving at a set of integrated accounts. Even if one may describe this as a sequence of accounts, it should be emphasized that the development of these accounts most often will be iterative permitting one to go back to adjust and make improvements. Hence, an arrow could be drawn from the final step back to the first. Each of the accounts is intended to provide useful information in itself while also being an input into other accounts. Considering the complexity in completing the accounting chain, the identification of 'stand-alone' policy uses of individual accounts is important to motivate further allocation of resources by policymakers to building the system of accounts. In Figure 5.2, ecosystem services supply and use accounts are included as two separate boxes to reflect the iterative process in generating ecosystem services supply and use accounts in physical terms.

SEEA EEA TR includes example tables for all the accounts. These tables are useful illustrations of the accounts but too extensive to include here. The ecosystem extent account maps the area of land in each land use / ecosystem type. Examples of ecosystems here are forests, agriculture, wetlands and urban, although subcategories of these ecosystem types may be deemed necessary depending on the circumstances. For example, natural forest and planted forests for timber production will have quite different characteristics. For each of the ecosystem types, the condition account includes the available and appropriate indicators of the "overall quality of an ecosystem

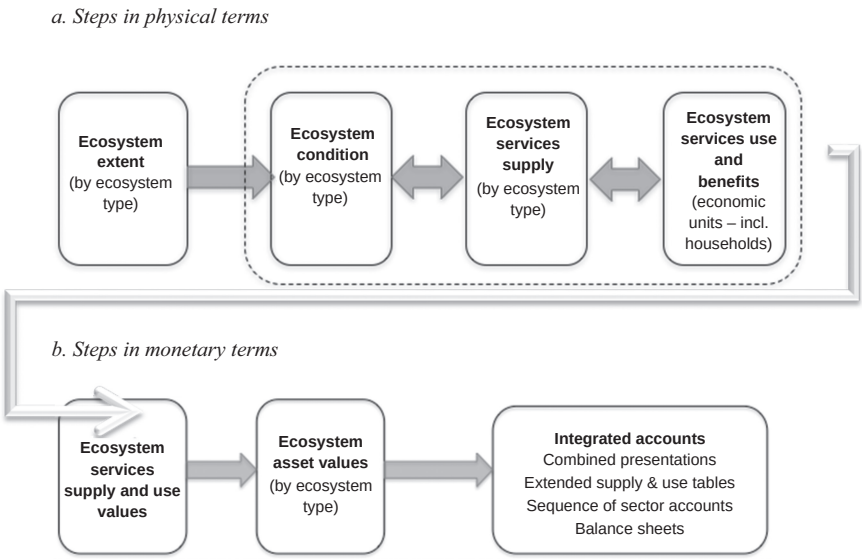

Figure 5.2 Broad steps in ecosystem accounting

Source: United Nations (2017).

asset in terms of its characteristics" (United Nations et al. 2014b, paragraph 2.35). The condition of the ecosystem is the basis for the capacity of the ecosystem to provide ecosystem services in the future, which in turn affects the ecosystem asset value. The ecosystem condition may be evaluated by comparing ecological indicator values now with the ecological indicator values in the reference condition for the ecosystem. What the reference condition should be is discussed in the Technical Recommendations (United Nations 2017) and is part of an ongoing debate, since some ecosystems in some countries have been affected by human beings for such a long time that the ecosystems have evolved to be dependent on human management. One suggestion is to identify the condition that existed when data collection began (United Nations 2017).[3] Depending on the condition of an ecosystem, the ecosystem supplies a basket of ecosystem services, and the ecosystem services use and benefits are further attributed to economic units. Examples of economic units here are households, agriculture, the government and other economic sectors. Again, the subcategories one chooses for the economic units depends on the circumstances, in particular the policy analysis question which accounting should inform. The measurements necessary for the ecosystem condition account, the ecosystem services supply and ecosystem services use may be completed concurrently. This is indicated by the dotted line. Experience with urban ecosystem accounting at high spatial resolution in Oslo has shown that ecosystem extent and condition accounts also need to be determined concurrently, because, depending on the spatial resolution at which land cover is classified, it can also indicate ecosystem condition.

While the first row in Figure 5.2 contains all physical accounts, the second row in Figure 5.2 contains monetary accounts, that we are primarily concerned with

here. The first box in the second row is the account for the ecosystem services use and supply values.

In the SEEA EEA TR the ecosystem monetary asset account is defined as accounts that "record the monetary value of opening and closing stocks of all ecosystem assets within an ecosystem accounting area and addition and reductions in those stocks" (United Nations 2017, paragraph 7.5). The motivation for monetary valuation of ecosystem assets in SEEA EEA is twofold. One motivation is that monetary valuation gives a common measurement unit which is – in principle – helpful when comparing alternative uses of ecosystem assets (in practice monetary valuation relies on the completeness of the physical accounts). A second motivation is that monetary valuation permits the ecosystem asset account to be integrated with other accounts for the other capital assets discussed in Chapter 1 of this report. In that sense, compiling the SEEA EEA ecosystem asset accounts and integrating them with the net domestic product could contribute to giving a more complete assessment of a nation's net wealth. As in the inclusive wealth framework, the SEEA EEA framework considers a depreciation of aggregate ecosystem assets a potential sign of unsustainable ecosystem use, but there are some important differences in the view on the meaning and treatment of depreciation in the two frameworks (Obst 2017, pers. comm.).

The thinking regarding the construction of ecosystem asset accounts in SEEA EEA is related but slightly different than the ecosystem capital thinking in the inclusive wealth framework. SEEA EEA is an expansion of the accounting framework in the System of National Accounts. The SNA defines the gross domestic product as a measure of economic performance and states explicitly that GDP is not a measure of human welfare (United Nations et al. 2008). SEEA EEA TR recognizes that there are several perspectives that may be taken when it comes to estimating a nation's wealth in terms of natural and ecosystem capital (United Nations 2017, paragraph 7.1). In the perspective of the inclusive wealth framework, the goal is to maximize intergenerational human welfare derived from all capital stocks. When operationalizing this, the inclusive wealth framework proposes to expand the net domestic product (the depreciation adjusted GDP) to include all types of capital.

SEEA EEA holds that one may account for ecosystem asset, as for any other asset, using a capital theoretic framework. If there is no market for an asset, which is often the case for ecosystem assets, then the monetary value of the asset may be estimated in terms of the present value of the future flow of income attributable to an asset. For an ecosystem asset, estimation of the monetary asset value requires information on:

- The appropriate exchange values now and in the future;
- The expected future ecosystem service supply;
- The appropriate discount rate to calculate the net present value (NPV); and
- The expected life of the asset.

The expected ecosystem service supply should be as close as possible to what one actually expects to be used and the exchange values should be as close as possible to the exchange values one expects for the future.

The final box in Figure 5.2 refers to the integration of ecosystem accounts with the standard national accounts, one of the steps in EEA. Technical guidelines may give the impression that integration of monetary asset accounts with other capital assets is the final purpose of accounting. Further work is needed showing how integrated accounts

are a means to the ends of different policy analysis. This may be done in several ways depending on how closely one wants to integrate the accounts. The methods range from combined presentation of only physical data on ecosystem condition and services alongside with presentations of standard national accounts numbers to complete integration where the value of ecosystem assets is incorporated with the values of other capital assets in order to extend the measure of national wealth.

The SEEA EEA offers useful concepts and accounting structures ultimately leading to ecosystem asset accounts. Furthermore, the SEEA EEA provides a framework that is compatible with national accounts and therefore with statistical offices' definitions used in the net domestic product. However, SEEA EEA differs from the theoretical framework of the inclusive wealth model since the latter requires that all the economy's capital assets should be valued at their shadow value.

4. Valuation challenges for ecosystem services, benefits and assets

As noted above, the meaning of an exchange value is quite different from the meaning of a shadow value in terms of its implications for human welfare. Yet, there are some commonalities in terms of the challenges that one may run into when attempting to determine these values. We now discuss some of these challenges.

4.1. Ecosystem service delineation and some fundamental challenges

The definition of an ecosystem service has been widely discussed in the literature in recent years, and the definition in MEA (2005), for example, has been deemed inappropriate for valuation and accounting purposes both in the inclusive wealth framework and in SEEA EEA (Pearson et al. 2012; United Nations 2017, paragraph 5.35). Instead, the need to focus on final ecosystem services and to separate between ecosystem services and ecosystem benefits to avoid double counting has been recognized in both the previous Inclusive Wealth Reports and in the SEEA EEA (see also discussion in Section 3 above). By making the distinction between benefits (also called goods in the UK NEA) and services it is possible to include several ecosystem services that are inputs in the production function of an ecosystem benefit. For example, while harvested fish is an ecosystem benefit, one must subtract the cost of harvesting to find the contribution of the ecosystem (that is the ecosystem service) to the benefit. Several definitions of ecosystem services and goods exist; for example, Barbier (2012) adopts the definition that "ecosystem services are the direct or indirect contributions that ecosystems make to the well-being of human populations (EPA 2009, p. 12)." Whichever definition one adopts, the literature has reached the conclusion that the definition be such that one avoids double counting, and this is possible by focusing on final ecosystem benefits (indirect) and services (direct).

Before we take a practical and pragmatic approach to estimating monetary values for ecosystem services, benefits and assets, it is necessary to recall that many ecosystems are complex and poorly understood both by scientists, policy-makers and the general population (see e.g. the example of the recently discovered cold water corals in Norway discussed in Aanesen et al. 2015). Barbier (2012, p. 163), for example, states: "There is inadequate knowledge to link changes in ecosystem structure and function to the production of valuable goods and services." Since knowledge

of ecosystem processes is never going to be complete or perfect, it is likely better to attempt with available knowledge to demonstrate the potential importance and value of ecosystems for human well-being under different methodological assumptions. Implicit valuation by a limited number of decision makers making policy choices uniformed by information on ecosystem services, is unlikely to reach efficient or welfare optimal choices (as noted above in the context of the UK NEA). This is also the argument made by the international project and process of The Economics and Ecosystems and Biodiversity (TEEB) (Kumar 2010).

In the following, we discuss some important challenges with valuation of ecosystem services and benefits that are market (section 4.2) and non-market (section 4.3), respectively, and the valuation of ecosystem assets (section 4.4). We relate the discussion to the framework of experimental ecosystem accounting (cf. back to Figures 5.1 and 5.2 above) and especially the use of methods for non-market services.

4.2. Market ecosystem services and benefits

Many ecosystem services and benefits such as fish, grains, timber and products derived from these have market prices which are relevant exchange values and therefore compatible with national accounting and SEEA EEA. When estimating the contribution of the ecosystem to harvested fish, one estimates the monetary surplus remaining after all costs related to harvesting have been subtracted from the total revenue. This monetary surplus is also denoted as the resource rent. In an accounting framework, it is important to be aware of the impact the institutional arrangement has on the value of the resource rent of many of the provisioning goods. The institutional arrangement may affect both the prices received by fishers and the costs of harvesting, and it is the prices and costs along with the quantity produced that in turn determine the size of the resource rent. For fisheries, examples of institutional arrangements may be open access, quotas or individually tradable quotas, and more. In an open access management regime, the value of the resource rents tends to zero and it is an open question how to value the resource under such circumstances (Hein et al. 2015). But other management regimes can contribute to conceal the resource rent in national accounts even if access to the fishery is limited. Policies that make fishing artificially expensive, for example, may cause the resource rent to be masked in national accounts. For an example of this see Box 5.1. In such cases, there are likely to be other indicators than resources rents

Box 5.1 Institutional arrangements affect the estimated contribution of the ecosystem service for fish

Traditionally, export of fish was a major source of income for Norway. Later other natural resource based income, particularly from oil and gas, overtook fish income. Opposition to new oil extraction in areas that are in important breeding grounds for Norwegian fish stocks confirms the fact that many Norwegians consider fisheries an important natural capital asset to preserve for the future.

Entry to Norwegian fishery is currently managed through fishing licenses and quotas and the fish stocks are not considered overharvested. Yet, for many years, the income from fisheries as it appears in national accounts is negative. Thus, according to national accounts numbers, Norwegian fisheries contributed negatively to Norwegian national wealth in the period 1984–2014 with the exception of 2010–2011 (Greaker et al. 2017). Figure 5.3 shows the components of the resource rent for the period 1984–2014.

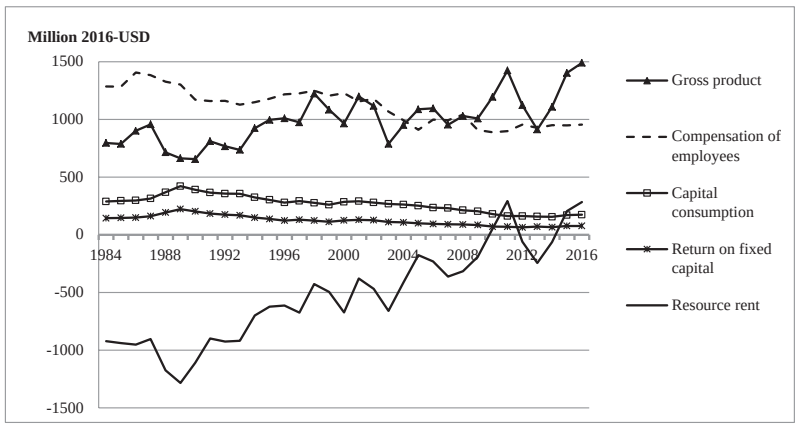

Figure 5.3 Resource rent in the Norwegian fishery 1984–2016

that are of policy importance and which can be monitored, such as employment. In cases where exchange value principles do not provide any additional information, parallel accounts and complementary indicators must be relied upon.

As Figure 5.3 shows, the actual resource rent has generally been on an increasing trend from 1984 to 2016. Norwegian fisheries have in some of the later years had positive resource rent, apart from the period 2012–2014. Factors contributing to the increasing resource rent over time are a year by year reduction in the number of hours worked in the sector reducing total compensation of employees (including compensation to the vessel owner – there are differing views on whether compensation to the vessel owner should be included here). There has also been a year by year reduction in the number of vessels, thus reducing fixed costs and capital consumption, although the gross tonnage has remained fairly constant.

Greaker et al. (2017) hypothesize that the potential value of the fishery resources is higher than what the calculations show in Figure 5.3. The reason is that the values of all parameters entering the calculation of the resource rent are conditional on the existing management regime. This management regime has by law several goals, and one of them is that fisheries should contribute to maintaining viable coastal communities. To help reach this rural development goal, fishing quotas are distributed among fishing vessel with different technologies and geographical locations.

Greaker et al. (2017) explore what the potential resource rent could be in 2011, which was an average year in terms of catch (in the period 2006–2016), without the current distribution of fishing quotas. Using a numerical optimization model,

they find that the counter factual resource rent if the 2011 quotas were harvested efficiently with the available technology would be close to 1.6 billion USD. This is 1.20 billion USD more than the observed resource rent.

When decomposing the change in potential resource rent compared to the actual rent into changes in total revenue and total costs, the results show that total revenue falls by about 10%. Simultaneously, total cost falls by around 80%. In 2010 and 2012 the average fish prices were lower. However, if adjusting total revenue and total cost for the national accounts numbers in 2010 and 2012 correspondingly, the potential resource rent is 1.14 and 1.23 billion higher than the one observed in 2010 and 2012, respectively. Even if this is a very simple adjustment, these numbers are not far from the rent dissipation of 1.20 billion USD in 2011. The potential resource rent found here is around 60% of the first-hand value in the fisheries in 2011. This is similar to Wilen's rule of thumb that says that half of the total revenue is resource rent (Wilen 2000).

Some have argued that the ongoing rent dissipation in Norwegian fisheries simply is a way to redistribute income in the fishery sector. But the resource rent could be increased by applying fewer fishers and fewer vessels, and per definition, one is in a situation with resource waste in the fishery sector because well as lower value creation in other sectors because both the fishers and vessels have an alternative value in other industries. However, in cases where the fishers and vessels that are removed from the fisheries have low / zero alternative value in other sectors, the present management system could be described as a more efficient way of financing employment in the fisheries through rent dissipation without leading to lower value creation in other industries as well.

4.3. Non-market ecosystem services and benefits

The most significant challenge for valuation of ecosystem services is that so many of them are non-marketed (Barbier 2014). The field of environmental economics has developed a number of methods to value non-market ecosystem services. Barbier (2012) provides an overview of the progress that has been made in environmental

Box 5.2 Categories of non-market valuation methods

Stated preference methods: Willingness to pay / or to accept compensation for changes in provision of ecosystem services / benefits are elicited from respondents in surveys using structured questionnaires. Stated preference methods are the only methods that can cover non-use / existence values. Well-known methods include contingent valuation and choice experiments.

Revealed preference methods: Values are "revealed" through studying consumers' choices and the resulting price changes in actual markets that can then be associated with changes in provision of ecosystem services. A well-known method is *hedonic pricing* of property characteristics, i.e. where the impact of environmental quality attributes on prices of properties is distinguished from other factors that affect prices. *Travel cost methods* used to value recreational benefits of ecosystems are often also included in this category.

Production/damage function approaches: A group of methods used to value an ecosystem service, where intermediate ecosystem services are one of several "inputs" to the final service or good enjoyed by people. Ecosystems' marginal contribution to the final service is valued.

Cost-based methods: Assume that expenditures involved in preventing, avoiding ("averting"), mitigating or replacing losses of ecosystem services represent a minimum value estimate of what people are willing to pay for the ecosystem service. In ecosystem accounting a distinction is made between replacement cost (of a particular ecosystem service) and restoration cost (of an ecosystem asset and its bundle of ecosystem services).

Benefits/value transfer methods: Refer to the use of secondary, existing study valuation estimates, from any of the valuation methods mentioned above, transferred to the "policy context" in need of value information. Values can either be transferred using unit value transfer methods or more advanced function-based transfers (e.g. based on meta-analysis of the literature).

Sources: Champ et al. (2017); Barton and Harrison (2017); Johnston et al. (2015); Barbier (2012); and Koetse et al. (2015).

economics on developing methodologies for valuation of non-market ecosystem services, and presents the non-market valuation methods that are currently available along with the ecosystem services for which each of the methods is appropriate. These valuation methods are summarized in Box 5.2.

Even if the coverage of environmental valuation studies may be considered patchy across ecosystem benefits and services (Barbier 2014), a large number of valuation studies for ecosystem benefits and services have been carried out in the last few years using environmental economic methods (e.g. Kumar 2010). The ideal would be to have valuation studies specifically designed for accounting purposes. This is rarely the case. This means that accountants and economists typically must use value or benefit transfer methods (see Box 5.2) based on suitable, existing studies to estimate exchange values with typically relatively large uncertainty (see e.g. Johnston and Wainger 2015).[4]

National accountants also have their set of accounting compatible valuation methods for non-market environmental goods (Vincent 2015). Only a subset of the non-market valuation methods developed in environmental economics are considered directly appropriate in an accounting framework ("accounting compatible"). This is because environmental economics is focused on finding estimates of welfare, and as a consequence, most non-market valuation methods that have been developed produce value estimates that include consumer surplus. SNA-compatible accounting requires exchange values, excluding consumer surplus. At the same time, finding accounting compatible monetary values for all ecosystem services is a significant challenge for SEEA EEA (United Nations 2014b). The SEEA EEA TR therefore offers several suggestions to bridge the gap between accounting and economics when it comes to valuation.

A subset of valuation methods developed in environmental economics does not include consumer surplus and has therefore been deemed appropriate for SEEA EEA. SEEA

EEA TR (United Nations 2017, Table 6.1) provides a list of valuation techniques that are accounting compatible:

- Production, cost and profit function techniques addressing separate provisioning, regulating and cultural ecosystem services;
- Hedonic techniques, which can estimate the marginal contribution of a bundle of ecosystem services / amenity attributes on house prices; and
- Methods that provide information about expenditures such as defensive expenditures and travel cost where information in the methods is used to estimate a market exchange value.

While national accountants typically use cost-based techniques (e.g. replacement cost), such techniques are only supported within the field of environmental economics if, "the alternative considered provides the same services; the alternative is the least cost alternative and if there is substantial evidence that the service would be demanded by society if it were provided by the least-cost alternative" (Barbier 2012, p. 180). These are relatively strict conditions.

Further research is needed to develop and test valuation techniques that reflect exchange values and hence exclude consumer surplus for non-market ecosystem services (Hein et al. 2015). The challenges of valuing ecosystem services without a market price while still being consistent with SNA, and while providing complementary information to support policy assessment, is one of the topics that is under testing and development in SEEA EEA.

Specifically, SEEA EEA TR proposes to develop methods where non-market valuation studies that originally were meant to derive values that include consumer surplus may later be used to derive the demand curve that would have existed if there was a marked for the good in question. Through combining such a demand function with the supply function for the ecosystem service or benefits one may be able to derive the exchange value. In this step, one would also have to make assumptions about the institutional arrangement for the exchange (see also discussion in Box 5.1 above). Here one might have to try to evaluate as realistically as possible what the institutional arrangement would have been had a market existed. Developing such credible provision scenarios is one of the strengths of stated preference methods when they are conducted to state-of-the art standards. This information combined with a supply curve for the ecosystem service could yield information about the exchange value of the ecosystem service or benefit. Caparros et al. (2017) provide an example of how this method may be put into practice.

In Boxes 5.3 and 5.4 below we show how one could use restoration cost and contingent valuation methods, normally considered inappropriate or incompatible with accounting standards, along the lines of the thinking above to arrive at estimates of exchange values that could be decision-relevant and fit for accounting. The first example discusses the restoration costs of city trees as basic of exchange value and how to avoid double counting (Box 5.3). For an application of ecosystem service valuation for ecosystem accounting in a developing country context that includes provisioning, regulating and cultural services, see e.g. Sumarga et al (2015).

Box 5.3 Use of restoration costs for replacing city trees

Restoration cost refers to the estimated cost to restore an ecosystem asset to an earlier, benchmark condition. The SEEA EEA Technical Recommendations suggest that the methods are likely to be inappropriate since they do not determine a price for an individual ecosystem service, but may serve to inform valuation of a basket of services. Accounting incompatibility in this case is due to an increased risk of double counting when ecosystem services cannot be identified separately, and instead are valued as a bundle associated with a specific ecosystem site or green structure. The valuation method is nevertheless useful in municipal policy and can meet accounting requirements under special conditions. For example, in the city of Oslo, restoration costs of city trees are calculated as a basis for a compensation fee to be paid by parties responsible for damaging trees on public land. The replacement cost is adjusted for the age, health and physical qualities of the tree. The compensation cost is in many cases absorbed as a transaction cost of property development when destroying a tree is unavoidable. As such this is an exchange value, although it has been set through regulation rather than the market. Regarding the risk of double counting, this may be avoided by not including municipal trees in other valuation models (e.g. hedonic pricing models).

Source: Barton et al. (2015).

Box 5.4 Use of contingent valuation to assess cost-recovery-based maintenance of city trees

Contingent valuation is based on survey responses to questions about willingness to pay for ecosystem services and is used to estimate economic value for awareness raising purposes, or as input to benefit-cost analysis. The SEEA EEA Technical Recommendations suggest that using values directly from the method is inappropriate since it measures consumer surplus rather than exchange values. However, as the Technical Recommendations suggest, it is possible to estimate a demand curve from stated preference studies, and that this information may be used in forming exchange values for ecosystem services. As an example, the contingent valuation method was used in Oslo to obtain the willingness to pay a municipal fee for maintaining the density of public street trees. Aggregate willingness to pay across Oslo's population was estimated at 60 million NOK/year for maintaining or increasing street trees across the city. By comparison current municipal costs for maintaining trees in municipal parks and streets is only 12 million NOK/year. While these contingent valuation estimates cannot be used directly to estimate the accounting value of current street trees, the information is useful as decision support and for determining a financially feasible level of supply. Municipal utility services such as water and

waste management are charged according to the cost recovery principle (i.e. no producer surplus). The contingent valuation estimates could be used to determine the increased level of street tree maintenance possible if the stated amount was actually charged to households following a cost recovery principle. Future increased supply – here increased maintenance of city trees – might be based on the findings from this contingent valuation study. The contingent valuation identifies feasible cost recovery fees per household and the maximum future maintenance costs that are feasible. While not determined by a market transaction, a public utility fee for maintenance costs of street trees should be accounting compatible as it is a service transaction price (although, as in nature, public utilities are rights-based, or technically difficult to withhold even if no payment is forthcoming from the user).

Source: Haavardsholm (2015).

The second example shows how a contingent valuation survey of people's willingness to pay to maintain or increase the density of street trees can be combined with the costs of supply, to arrive at an exchange price that may be deemed acceptable for accounting purposes (Box 5.4).

The SEEA EEA TR further proposes as a way to determine the most suitable valuation method to use for accounting purposes, to identify so-called "channels" (Atkinson and Obst 2017) through which an underlying ecosystem asset provides

Box 5.5 Valuation methods and links to accounting via channels to users

In order to see the relevance of the non-market valuation methods from environmental economics for accounting purposes, it is useful to view the "channels" through which an underlying ecosystem asset ultimately provides benefits to, or affects the well-being of, the users or economic units. SEEA EEA TR (United Nations 2017, Atkinson and Obst 2017) summarizes three such channels:

1. Ecosystem services used as inputs for production (such as pollination for agricultural production).
2. Ecosystem services that act as joint inputs to household final consumption (such as nature recreation that requires time and travel expenditures on part of the household).
3. Ecosystem services that provide household well-being directly. This is an abstract channel that includes non-use values.

These channels have parallels in accounting, in the way GDP is affected either through inputs to existing (economic) production (channel 1) or to final household consumption (channels 2 and 3). The idea is to identify each buyer (producer or household) and seller (ecosystem), and identify valuation methods that can be used to estimate exchange values, under prevailing institutional conditions. Valuation methods can be grouped according to channels in a

supply and use context (Freeman et al. 2014). For industry users, for example, provisioning, regulating and cultural services would provide value through channel 1. For households, provisioning services work through channel 1, regulating through channel 2, and cultural through both channels 2 and 3. Once suitable services, channels, users and methods have been identified, the next step is to use the methods to construct an exchange value estimate for the non-market service. There are different ways this can be done, e.g. as illustrated in Boxes 5.3 and 5.4 above.

Sources: Atkinson and Obst (2017), Freeman et al. (2014) and United Nations (2017).

benefits to the users or economic units (see Box 5.5). The next step is then to identify ecosystem services and benefits and respective valuation methods for each service channel and user. Some of the methods will be accounting compatible and some will require adjustments along the lines noted above, to arrive at exchange values.

Even for non-market valuation techniques from environmental economics that are considered accounting compatible, there are still other challenges related to using these methods for valuation.

As spatially explicit accounting frameworks both SEEA EEA and inclusive wealth accounting need spatially explicit valuation of ecosystem benefits and services. There is a lack of studies in general, though in recent years numbers have increased. Many valuation studies are not motivated by policy questions (Laurans et al. 2013). In those cases where valuation addresses policy, some questions tend to come up more often, and some services appear to be more frequently valued than others. Recreation benefits, for example, may be valued more often than some regulating services. This is also due to the complexity of modelling the ecosystems as well as some services and benefits.

Through adopting landscape, or land area, as the basic accounting unit, characterizing the ecosystem as a natural asset is relatively straightforward. To match the accounting units, non-market valuation studies should also be spatially explicit. With increased availability and use of satellite data maps and geographical information systems, and spatially explicit data analysis techniques, the number of valuation studies that are spatially explicit is expected to rise. But at present, SEEA EEA accounting efforts will by necessity rely on benefit transfer based on studies that are rarely spatially explicit in the sense required for accounting purposes. For those valuation results that are available and site specific on some level of spatial resolution, a main challenge, pointed out by Hein et al. (2015), is to transfer values to other sites and scale the estimates to larger areas required for accounting purposes.

To transfer to other sites there must be sufficient ecological and economic correspondence between the study and the policy sites (Johnston et al. 2015; Barbier 2014). The benefit transfer literature offers simple and more advanced (and sometimes more precise) methods for benefit transfer that sometimes use GIS and scaling-up procedures (see e.g. Brander et al. 2012). Meta-analysis requires knowledge of the values of the independent variables for the policy site of interest and assumes that the statistical relationship between the dependent and independent variables is the same between the study and the policy sites. It is not always guaranteed that more advanced methods

perform better (Lindhjem and Navrud 2008). It is also important to delineate different ecosystems and services, to avoid double counting (Barbier 2012).

For wealth accounting purposes it is often ideal to have aggregate values of ecosystem services at the regional or national level. If ecosystem services values have been estimated based on case studies at specific sites, one may question whether the target population of such studies will be appropriate for wealth accounting. That is, can the numbers based on a case study in one location be scaled up to a national level? It is not uncommon that local land use preferences differ from the national preferences for land use (see e.g. Lindhjem 2007 on forest services). Differences in preferences for a policy are not unexpected when a policy has a different impact locally than nationally. Local communities which are more affected by a policy may have per capita net benefits that are much greater (lower) than the average per capita net benefits nationally. But the aggregate net benefits at the national level may be much greater (lower) than the local net benefits.

Using a simple physical index of an area, such as hectares, to expand value estimates to another scale may violate basic economic principles such as diminishing marginal utility, changing relative scarcity and substitutability. However, using average per hectare values is often the way scaling-up is done in practice, for lack of information to adjust values for such factors we know from theory and empirical studies should affect values. In some cases average per hectare values for some degree of scaling may work as approximations that in any case are better than no such information.

To track the wealth of a nation the aggregate values of ecosystem services at the regional or national level should ideally be replicated and updated annually. An important use of such information is to track trends over time. But with the scarcity of non-market valuation studies one is forced to use outdated values. Preferences or demand may change over time, for example as incomes increase, people on average tend to prefer to use more cultural ecosystem services. Preferences are shown in some valuation studies to be stable for periods of up to five years, but for periods beyond 20 years this is not the case (Skourtos et al. 2010). Non-market valuation methods have also improved and can hopefully provide more reliable estimates than some older studies.

The current SEEA EEA process is geared towards testing the operationalization of the SEEA EEA TR in practical cases and through increased practice to gather experiences that may help solve some of the challenges in deriving exchange values for accounting. One relatively large-scale implementation of SEEA EEA principles is currently under way in the greater Oslo area in Norway (see Box 5.6). The aim is to test how the SEEA EEA framework can identify the economic contributions that urban ecosystems make to the municipal, household and commercial sectors in greater Oslo.

4.4. Accounting for the value of ecosystem assets in SEEA EEA

In estimating the expected ecosystem services supply it is important to assess possible trade-offs between different ecosystem services in particular policy contexts; for example, there may be a trade-off between forest recreation and production of timber. When valuing ecosystem assets, it requires aggregation of many ecosystem services under the assumption that the prices are independent (Hein et al. 2015).

Box 5.6 Ecosystem accounting at municipal level

Figure 5.4 shows the recommended system of accounts in the SEEA EEA (in grey), placed in the context of different municipal uses of information compiled for accounting. The framework emphasizes the need at the municipal level to base decisions on available information on value of ecosystems. The valuation methods used – whether exchange-based or consumer surplus based – depend on the type of policy question at hand. Information stemming from different valuation and indicator methods is complementary and can be triangulated. This approach has been called integrated or plural valuation (Jacobs et al. 2016), exploring the role of SEEA EEA as a contribution to "considering ecosystems through multiple analytical lenses." Ecosystem accounting within such a plural valuation approach is being tested at the municipal level within the metropolitan area of greater Oslo, Norway. Local and city governments already make use of land use mapping and thematic environmental and socio-cultural indicators to inform impact assessments, municipal planning and zoning. The URBAN EEA project is testing SEEA EEA recommendation on how to identify the economic contributions that urban ecosystems make to the municipal, household and commercial sectors in greater Oslo. Ecosystem accounting offers a complementary set of indicators to municipal government aimed at making fragmented urban nature and blue-green infrastructure more

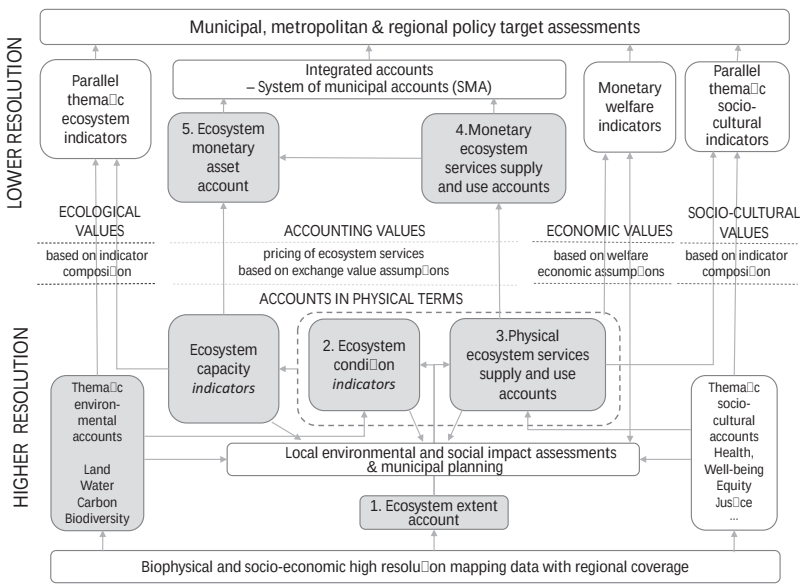

Figure 5.4 Conceptual framework for municipal experimental ecosystem accounting

Source: Based on Barton et al. (2017).

visible in city planning. The project has found that characteristics of urban landscapes may limit the scope of monetary ecosystem accounts in the assessment of municipal policy targets. Urban green structures can be small and hard to identify in GIS, but still be locally valuable. Remnant and constructed urban nature is highly spatially fragmented, mixed-use density is high and highly localized. This makes it challenging to identify marginal values of particular green space qualities and ecosystem services from transactions in the property market. Municipal utilities such as water supply, rainwater management, sewage treatment and solid waste management operate according to cost recovery, meaning that the residual resource rent attributable to ecosystems is zero. Recreational time use in neighbourhood public spaces is very high relative to travel expenses to use the areas, leaving little trace in market transactions. Given these and other challenges of valuation urban ecosystem services (Gomez-Baggethun and Barton 2013), urban EEA aims to provide municipal government with a suite of spatially explicit indicators of accounting compatible exchange value, as well as parallel indicators of ecological, welfare economic and socio-cultural values that are at stake across a cityscape.

As discussed in the Technical Recommendations, while the link between physical flows and provisioning services is quite tangible, the same may not be the case for regulating and cultural services. The supply of these services depends on factors that often are not stable over time such as vegetation, management regimes and pollution levels. Further, one may have limited information about the capacity of the ecosystem to supply the service over time. Finally, for cultural services such as enjoying biodiversity and aesthetic aspects of nature, it may be difficult to identify and describe in general terms the specific link between the condition of the ecosystem in physical terms and the supply of cultural services. Hence, indicators for cultural services require the most further development at this stage, according to the Technical Recommendations (United Nations 2017, paragraph 7.16).

For integration of ecosystem asset accounts with national accounts, the SEEA EEA TR states that consistency with the exchange value concept in SNA, one also should use the market-based discount rates. Estimating using a variety of discount rates to demonstrate the sensitivity of the estimates is recommended. For a more thorough discussion on the application net present value (NPV) for natural resources see SEEA CF (United Nations 2014a, section 5.4).

The life (duration) of the ecosystem asset depends on how it is being used. If use is sustainable then one can assume an infinite asset life. But some ecosystem asset uses can be unsustainable and this will limit the asset life. But even in cases where the asset life is assumed to be infinite, discounting incomes at a high rate may cause the present value of incomes to be negligible after two or three decades. Thus, the decision about discount rate and asset life are not independent. Since there is no a priori preferred asset life, the SEEA EEA TR highlights the need for sensitivity analyses on the asset life and the discount rate.

In finding NPV values, one must recognize that the expected future flows of ecosystem services for an ecosystem asset is affected by the ecosystem condition, which again is affected by the use of ecosystem services. The nexus between use

and condition of an ecosystem leads us to the concept of ecosystem capacity. Hein et al. (2016) define the concept of ecosystem capacity for accounting purposes as "the ability of an ecosystem to generate an ecosystem service under current conditions and uses at the maximum yield or use level that does not negatively affect the future supply of the same or other ecosystem services." Thus, capacity may be thought of as the sustainable use of an ecosystem service for which there is demand, preferably at aggregate scales such as at the landscape level.

The SEEA EEA TR (United Nations 2017) states that "ecosystem capacity is considered a topic of ongoing research but with a very high priority" (paragraph 7.68), and that the "concept of ecosystem capacity is a central one for explaining the ecosystem accounting model and applying the model in practice. This is especially the case in relation to developing information sets that can support the discussion of sustainability" (paragraph 7.33).

Some of the reasons why the concept of ecosystem capacity still is under development is that it involves ecologically complex effects such as threshold effects, resilience, ecosystem dynamics and other non-linear effects. These effects also create challenges for standard valuation (exchange or welfare-based valuations, see e.g. discussion in Farley 2012). In addition, one needs to resolve how to measure capacity in practice.

The SEEA EEA TR discusses issues of the measurement of ecosystem capacity. Ecosystem capacity may be monetized in terms of the NPV of estimates for the future basket of services. To obtain an estimate of ecosystem capacity one needs to have an estimate of the future ecosystem service use that is as close as possible to the actual or revealed patterns of use under the expected legal and institutional arrangements. This implies that the estimated future use does not necessarily reflect sustainable uses. One may then compare the NPV of ecosystem use at capacity to the NPV of the actual use, and determine whether the ecosystem is being used above, below or at capacity. Sustainable ecosystem management ultimately requires managing ecosystems below capacity (safe minimum standards). If the ecosystem is used above capacity, it reduces the opportunity for this and future generations to manage the ecosystem sustainably. A decline in condition of an ecosystem asset as a result of economic and other human activity would in SEEA EEA be considered ecosystem degradation. How to include ecosystem degradation has also to be determined. While ecosystem degradation is clearly related to declining condition, it can be defined more specifically as reflecting either a decline in the ecosystem asset value as measured in relation to the change in the NPV of an ecosystem asset based on the expected flow of services, or in relation to the change in the NPV of an ecosystem asset based on its capacity. For both the concept of ecosystem degradation and for the concept of ecosystem capacity one needs to resolve some practical measurement issues that will also have bearings on how to value ecosystem assets within the SEEA EEA framework.

5. Discussion, conclusion and future directions

SEEA and its developments are seen as an important step on the road to wealth accounting (Perrings 2012). We have discussed how the accounting framework SEEA EEA is currently moving towards developing operational solutions to important challenges related to monetary valuation as discussed in the SEEA EEA TR (United Nations 2017).

The requirement only to permit exchange values in SEEA EEA is motivated by the goal of compatibility with national accounting. This would later make it possible to consistently estimate the asset value of a nation's total capital stock. However, accounting that only includes exchange values will not fully reflect the importance of ecosystem services to society (Remme et al. 2015). For example, risks may be unaccounted for in the exchange values (Hein et al. 2015). Further, capturing the value of many regulating and cultural services with exchange value methods will remain a challenge. Further research and testing, is necessary in order to integrate values into an ecosystem accounting framework that is useful for policy assessment (e.g. Remme et al. 2015; Hein et al. 2015).

Another challenge with using exchange values for ecosystem services is that a large share of existing estimates of non-market ecosystem services are in the form of willingness to pay, which includes consumer surplus (i.e. a welfare-based approach) and not in the form of exchange values. However, research on how to derive the exchange value from welfare-based studies is ongoing (see e.g. Caparros et al. 2017; Day 2013; United Nations 2017).

Like SEEA EEA, inclusive wealth accounting is mainly constrained by the lack of shadow prices for ecosystem assets, and "there is insufficient experience with the calculation of these shadow prices at the scale required for accounting" (Hein et al. 2015, p. 90; Barbier 2013). Dasgupta and Duraiappah (2012) recognize that we can never get the shadow prices "right." Instead, we can simply try to estimate the range in which they lie. Given these challenges, empirical studies in the inclusive wealth framework have also resorted to using market prices (exchange value) for those ecosystem services / benefits that have market prices. However, research is also ongoing to find better estimates of shadow prices (Fenichel and Abbott 2014). The next best solution, suggested by Dasgupta and Duraiappah (2012, p. 26), is to use "willingness to pay shadow prices," while recognizing that these prices may not capture threshold effects of an ecosystem.

Both for SEEA EEA and the inclusive wealth framework there is increasing interest among researchers to tailor valuation studies for natural and ecosystem capital accounting, as recommended by Tallis et al. (2012). This would be the ideal situation, since the need for and challenges of benefit transfer and scaling-up would be reduced. For both wealth accounting frameworks, it may be difficult to account for non-use values such as existence values and other subtler cultural services / benefits, even though we know from many studies that such benefits can be important for people's welfare (Lindhjem et al. 2015). If the goal is to demonstrate the importance of an ecosystem service, one may have to use other indicators of value (see Box 5.6 and Barbier 2014) when direct valuation of the ecosystem service fails. This could be due to lack of data, difficulty in defining institutional arrangements that mimic exchange values or because accounting compatible values capture only a very small part of welfare (Jacobs et al. 2016).

Inclusive wealth accounting is a developing accounting framework for both human, natural and ecosystem capital with the goal of demonstrating the importance of these types of capital to human well-being. Since the focus is welfare-based one needs shadow values of the capital stocks, and estimates of shadow values are hard to come by. SEEA EEA specializes in ecosystem accounting using a national accounting framework. While the national accounting framework implies some restrictions, such as the use of exchange values, developing ecosystem accounts based on an

existing accounting framework may be quite helpful. The SEEA EEA has developed concrete solutions to several accounting challenges and contributed to operationalize measurement. Furthermore, the need to complement the SEEA EEA framework with ecosystem capacity accounts to better track sustainability of ecosystem use has been recognized.

On the other hand, inclusive wealth accounting emphasizes intergenerational welfare and is not restricted by national accounting standards. However, calculating the total value of natural capital for inclusive wealth calculations is also quite difficult and may go beyond what can currently be achieved. A more achievable goal might be to evaluate the marginal value of natural capital, which is how a small change will alter the present value of the flow of services. Further, in order to find the present value of future flows of ecosystem services one will need models to estimate the impact of changes in natural capital on the provision of ecosystem services. One also needs to predict the future prices and determine the appropriate discount rate. Other related challenges include issues related to resilience and thresholds of ecosystems.

Finally, equity is also a crucial part of sustainability. Solely focusing on aggregated numbers at the national level may not be the best way to evaluate sustainability because numbers at the national level might mask the impacts at the local level as well as inequalities among income groups in the current generation, and across generations. Thus, inclusive wealth accounting should also address the spatial and temporal distribution of wealth.

In the end, if attempting to account such complex assets as ecosystem assets, no matter which accounting system one applies, it is important one is aware of the assumptions and the limitations of the accounting framework and the benefits of an accounting framework that can be applied consistently over time.

Notes

1 See also the recent developments on a so-called Integrated system of Natural Capital and ecosystem services Accounting in the EU (KIP INCA) (La Notte et al. 2017). This system aims to work according to the SEEA EEA system and to further develop this based on EU experiences.
2 Note that in the ecosystem accounting framework biodiversity is treated as a component of the ecosystem asset rather than as an ecosystem service in its own right (United Nations 2017). In addition, biodiversity is also included in standalone thematic accounts.
3 Data collection started in many countries when ecosystems were already at a highly modified, depleted state. Hence, this view of the references condition has its problems.
4 It is worth noting that the international database of valuation studies, Environmental Valuation Reference Inventory (EVRI), has just recently been opened for the public: www.evri.ca

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6 Is economic growth linked with comprehensive wealth? Link to state-level analysis in India

Haripriya Gundimeda

1. Introduction

Economic growth, the goal of all the countries, does not happen in a black box, but depends on the quality of the produced, natural, human and social capital. The skills, knowledge that the humans have is a form of capital and is a prerequisite for growth. The important role played by human capital in driving economic growth is well established (Lucas, 1988, Romer, 1989, Barro, 1991, Schultz, 1961). Human capital stock is important to enhance the productivity of both labour and physical capital, and to drive the innovation and diffusion of technology. Very strong two-way association between economic growth, human capital and life expectancy has been found in the literature.

Natural capital provides necessary and essential substitutable and non-substitutable materials and services (e.g. energy stocks, minerals, forests) for the economy to thrive and survive. For example, wood and coal are substitutes and the solar energy can be a substitute for oil, while the regulatory services (like carbon regulation) cannot be substituted by other forms of capital. Technology can offset some of the functions of resources but there are limits to technological possibilities. Ample but inconclusive evidence exists in the literature, which explored the relation between natural resources and economic growth. There are examples, where natural resources drive the economic growth (Norway, Malaysia, Botswana, Canada) as well as counter factual evidences on how higher natural resource base can lead to slower growth rates, low incomes, weak political institutions etc. Research by Sachs and Warner (1997), Auty (1993), for example, showed that countries which are rich in agricultural and mining capitals grew more slowly during 1970 to 1990 compared to resource poor economies and this phenomenon has been named as natural resource drag. The abundance of natural resources pulls economic growth downwards (called *natural resource drag*). For example, many of the countries in Africa (Congo, Nigeria, Angola) have high poverty rates despite abundance of natural resources.

Some researchers argue that a natural resources curse exists not because the countries are resource rich but due to rent seeking behaviour and abundance of certain types of natural resources (for example energy resources) (see Congleton et al., 2008; Boschini et al., 2007). In countries with abundant natural resources, the rent seeking behaviour by political elites is responsible for the resource curse. Some studies take to the view that natural resource abundance can lead to Dutch disease and crowding out of human and physical capital (Atkinson & Hamilton, 2003; Gylfason & Zoega, 2006). However, no consensus has emerged. Deaton and Rode (2012), Mehlum et al. (2006) opine that the mixed evidence relating to abundance in natural resources

and economic growth is because of the quality of the institutions (economic and political) in the countries – emphasizing that natural capital alone cannot explain the counter factual evidence. This aspect of other factors is supported by meta-analysis by Havranek et al. (2016). Havranek et al. (2016) based on a quantitative survey of 605 estimates from 43 studies show that 20 percent of the papers found a positive relationship, 40 percent found no effect and 40 percent of the papers showed a negative effect of natural resources on the economic growth. The study concludes that the interaction between the quality of institutions, extent of natural resource dependence and abundance along with the level of investments impacts the economic growth. Interestingly, the level of natural capital also seems to influence the level of human capital. Gylfason (1999) shows that the school enrolment at all levels is inversely related to the natural resource abundance, as measured by the share of labour force engaged in primary production, across countries. However, social capital has got a role to play in understanding how the resources are invested back in various forms of capital. Norway, for example, despite being rich in energy resources, does not neglect the human capital. The human capital in turn also impacts the better conditions for governance by improving health and equality (Aghion et al., 1999). Thus the social capital provides the enabling conditions for rest of the capitals to thrive and in turn is enabled by other forms of capital.

The viewpoint until the 1990s that manufactured capital is the only productive base of the economy has been contested as the role of other forms of capital has been recognized (UNU and IHDP, 2012; United Nations University International Human Dimensions and Programme, 2015). Higher GDP need not translate into a higher quality of life or imply the well-being of the nation – which is derived from different forms of capital, and not from GDP alone. The GDP does not measure the impact of production activities on the quality of the environment and natural resources and thus on the human well-being. Substituting natural capital to achieve higher growth can impact the health of people which could impact the human capital and thus the produced capital. It is very clear that the capital is not additively separable but is strongly correlative with other forms of capital.

Inclusive wealth is based on measuring the capital stocks which influence the well-being, and thus it is important to track the changes in the value of nations' stocks. As mentioned by Arrow, Dasgupta, Goulder, Munford, and Oleson (2012), the "state's capacity to produce goods and services requires measuring growth in comprehensive wealth and not merely the capital stock formation alone". "As long as the state is on optimal growth path, the growth in net capital formation can be a good measure of growth. If not, an income-based measure like GDP could lead to qualitatively different conclusions about economic growth than a direct measure of the growth of the capital stock". (Arrow et al., 2012).

The objective of this study is to understand the link between economic growth and different forms of capital for the period 2001–2011 using comprehensive wealth as an indicator. To illustrate the arguments, two different forms of natural capital – renewable (forests) and non-renewable (minerals) – were considered along with human capital and the produced capital as a measure of wealth. These are then viewed in the context of other basic tenants of the quality of life measured from the perspective of human development index and health. In Section 2, some perspective on growth and development in India at the state level is discussed, Section 3

discusses the concept of measurement of produced, natural and human capital, and Section 4 links it to the state-level analysis.

2. Some perspective on growth and the links to development in India at state level

Figure 6.1 gives the contribution of different states considered in the study to the GDP in India. It can be clearly seen that Maharashtra contributes 17% of the income, followed by Tamil Nadu, Uttar Pradesh, Gujarat, West Bengal and Karnataka, which together contribute to 56% of the GDP. A similar trend has been observed in 2001 though the relative contributions differed. Uttar Pradesh, the most populous state in India with a share of 16.9% of population, contributes only 8.7% of the GDP in 2011 and the other populous states in the order Maharashtra (9.4%), Bihar (8.8%), West Bengal (7.64%) and Andhra Pradesh (7.1%) contribute 17.1%, 2.7%, 6.6% and 8.4% to GDP respectively.

In terms of the per capita income (per capita net state domestic product), of the states considered in this study, Goa has the highest per capita income (almost 10 times that of Bihar the poorest state), followed by Sikkim, Haryana, Maharashtra and Tamil Nadu (Delhi has the second highest per capita income after Goa), while the states Bihar, Uttar Pradesh, Assam, Manipur and Madhya Pradesh are the poorest. These five states have approximately 34% of the Indian population.

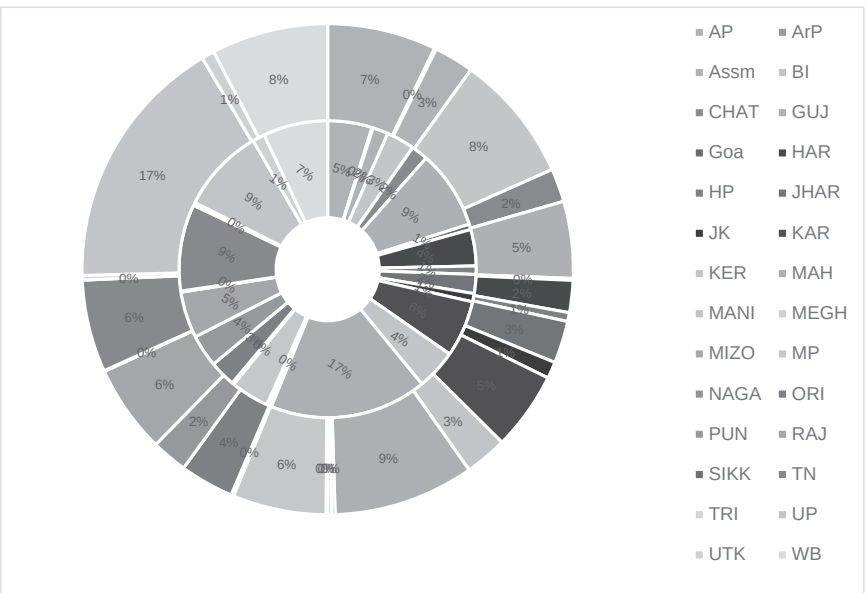

Figure 6.1 States share of GDP and population in 2011

Note: The inner pie represents GDP in 2011.

Source: Figure based on data from http://mospi.nic.in/data, http://censusindia.gov.in/.

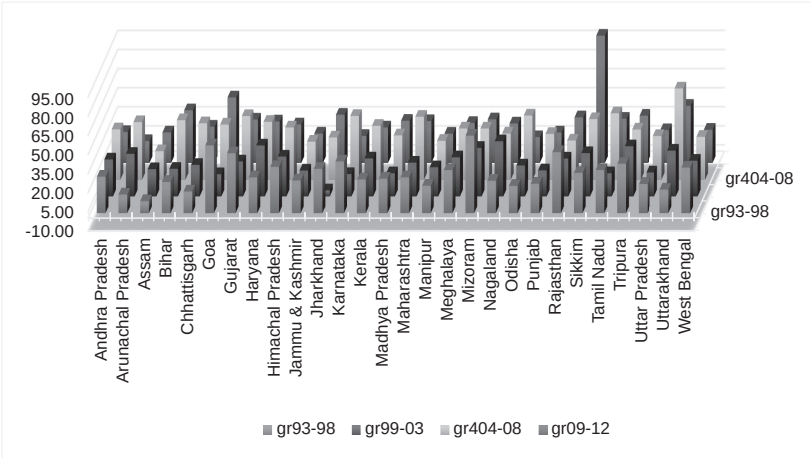

Figure 6.2 Cumulative growth in per capita income during 1993–2012

Source: Figure drawn and data compiled from http://niti.gov.in/.

The growth story presents a different picture. The highest cumulative growth during 2001–2011 occurred in Sikkim, Uttarakhand, Goa, Gujarat and Tamil Nadu while Assam, Manipur, Jammu and Kashmir, West Bengal and Uttar Pradesh had low growth. During the first half of the decade (2001–2006), the states Uttarakhand Gujarat, Maharashtra, Tamil Nadu and Karnataka were the fastest while in the second half of the decade (2006–2011), Sikkim, Uttarakhand, Goa and Bihar grew faster than the other states.

Thus GDP and its decadal growth is influenced not only by the demographic factors and size, but also by the workforce and the quality, along with the investments made in the state. Figure 6.3 presents the indicators on change in output per worker, the work participation rate along with the gross capital formation in these states. It is apparent that these are all related but are not the only factors in the Indian context. The fast-growing state Uttarakhand and Sikkim has very high gross capital formation (data not available for Sikkim) and has seen an increase in work participation rates (an indicator of expansion in economic activity), which explains the growth as well as the increase in gross value added per unit of worker. Some of the slow growing states have suffered from low capital formation as well as have seen a decline in the value of output per worker. Thus the human capital measure can be used to explain the economic growth to an extent.

How are the states faring in terms of the overall development, measured in terms of HDI? HDI has been measured using different approaches. Based on the analysis by Mukherjee et al. (2014), the state of Kerala has been consistently well off the mark. The next in HDI rank are Goa, Himachal Pradesh, Tamil Nadu and Maharashtra. UP, the most populous state, contributing to 8.5% of GDP in India and Bihar,

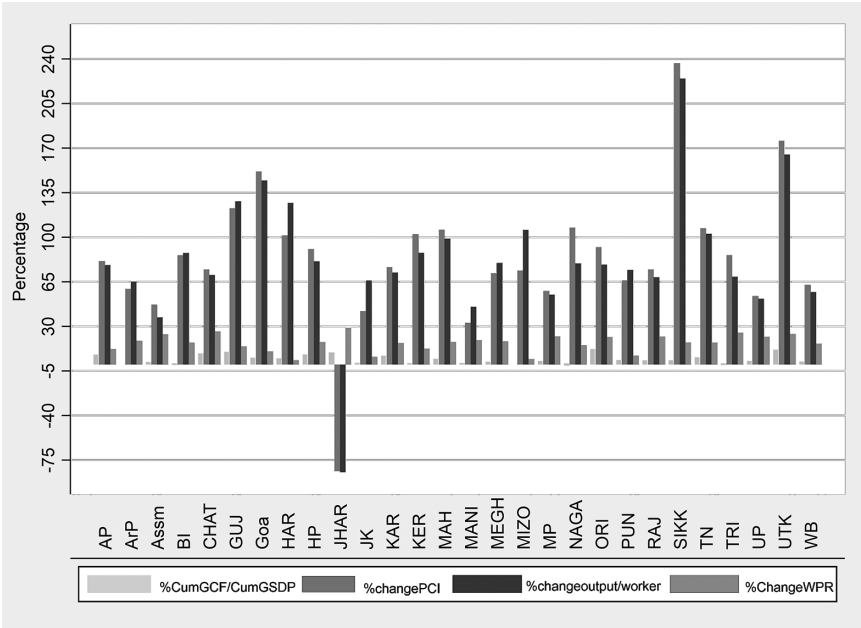

Figure 6.3 Decadal change in per capita income, output per worker, work participation rates and gross capital formation

Source: Figure drawn based on data compiled from different sources from http://niti.gov.in/, http://mospi.nic.in/data, http://censusindia.gov.in/.

rank very low on the Human Development Index. Most of the northeastern states are yet to catch up and have registered low decadal growth as well (with the exception of Sikkim, whose growth has been phenomenal). Uttarakhand has registered significant growth and ranked 11 in terms of HDI, next only to Gujarat. Andhra Pradesh, despite being an economically important state, does not figure in the top 15, and Karnataka does not figure in the top 10.

The study does find some evidence between economic growth and development, but however does not explain the complete story. The initial stock of the state's assets are important as well and thus a capital perspective becomes important. It is useful to understand how different states have used their natural capital and accumulated their produced and human capital. To reiterate Arrow et al. (2012), "the state's capacity to produce goods and services requires a measure of the growth in comprehensive accounting of all forms of capital and not merely the capital stock formation alone. As long as the state is on an optimal growth path, the growth in net capital formation can be a good measure of growth. If not, an income-based measure like GDP could lead to qualitatively different conclusions on economic growth than a direct measure of the growth of the capital stock" (Arrow et al., 2012).

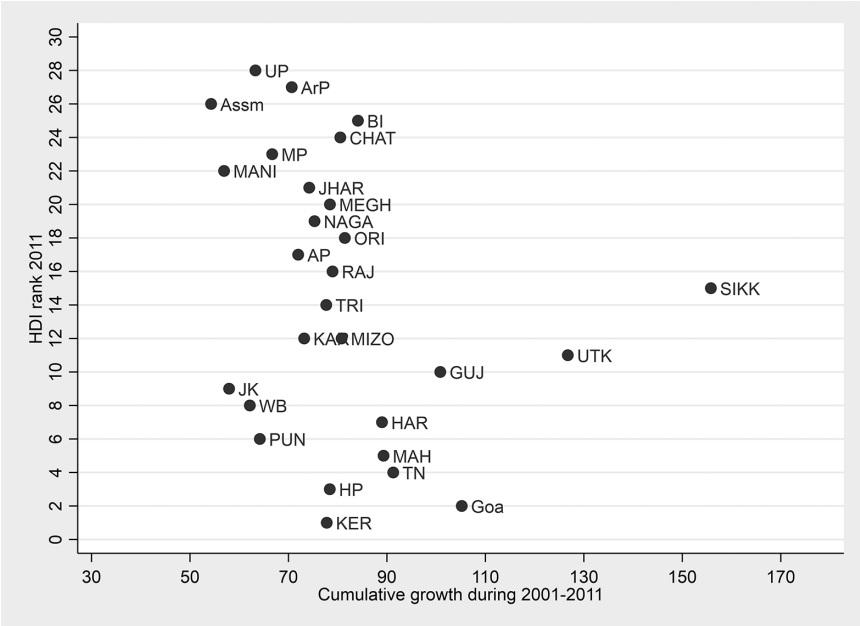

Figure 6.4 Decadal cumulative growth in GDP (2001–2011) vs. HDI 2011

Source: Author's illustration.

3. Methodology for measuring comprehensive wealth and investments of states

The national accounts recognize the importance of capital stock as an important indicator in assessing the growth potential of the economy. However, the capital stock estimates are limited to include produced assets and some non-produced assets (like land) but do not consider the natural capital (renewable and non-renewable) and human capital stocks. Here we give the estimates of natural capital stock and human capital stocks for different states in India for the year 2001, for which the estimates are available consistently across the states. The study considers forest capital and mineral assets – under the categories renewable and non-renewable natural capital. The methodology used in estimating the natural capital stocks and human capital stocks is given below and is extracted from the work carried out by the author earlier.

3.1. Renewable natural capital – forests

Natural capital is an asset and change in natural wealth is akin to capital formation of produced assets. In this paper, the forest capital is included as an example of renewable natural capital. Estimating the value of natural capital formation requires estimating the flow of ecosystem services from forests and valuing them at their shadow process. Based on the summary of earlier studies by the author ((Gundimeda,

Sanyal, Sinha, & Sukhdev, The value of Timber, Carbon and Non-timber forest products in India Monopgraph 1, 2005); (Gundimeda, Sanyal, Sinha, & Sukhdev, The Value of Biodiversity in India's Forests, 2006); (Gundimeda, Sanyal, Sinha, & Sukhdev, 2007); (Gundimeda & Atkinson, Accounting for India's forest wealth, 2006)), the value of forest wealth is obtained as the discounted present value of flows from six forest products for which the estimates are available – timber, fuelwood, non-timber forest products (NTFPs), forest biomass carbon and recreational and genetic services. The data for the stock of forests come from the Forest Survey of India, which documents forest changes every two years based on satellite data and ground verification.

Timber is the most obvious component of forest wealth, which can be directly estimated from the volume of growing timber. To obtain carbon stocks, the volume of forest biomass was first estimated from the growing stock estimates and then converted to carbon, assuming a carbon content of 0.5 Mg C per Mg oven dry biomass (Gundimeda, Estimation of Biomass in Indian Forests, 2000b), (Gundimeda, Carbom Budget of the Indian Forest Ecosystem, 2003)). Since forests cannot be used for timber extraction and carbon sequestration at the same time, reserved forests has been assumed to be used for carbon sequestration and protected forests for timber, fuelwood, non-timber products, etc. Forests also provide erosion control, hydrological services, biodiversity, etc. Changes in these services are more difficult to assess.

The biggest challenge in estimating changes in wealth arises from establishing shadow prices. As Arrow et al. (2012) show, shadow prices reflect contributions to well-being by the direct and indirect use of forest goods and services. Various methods were used to obtain the shadow values of different components of India's forest wealth. The shadow price of timber equals net rent, i.e. price less the cost of extraction. Resource rent is estimated as the average prices of round wood and fuelwood minus the unit costs of extraction (Gundimeda, 2000a, 2001). (Gundimeda, (Gundimeda, Integrating Forest Resources in the System of National Accounts, 2000a), (Gundimeda, Accounting for the Forest Resources in the National Accounts in India, 2001)). Carbon was valued at $20/tC, based on its global market value at that time. The shadow price of NTFPs was computed as the discounted value of products per hectare (Gundimeda, 2000a, 2001). The shadow price of recreation has been estimated using the consumer surplus derived for tourists, estimated using a benefit transfer approach. The biodiversity values of forests were estimated by assessing the value of marginal species for medicinal purposes. Here the approach was to establish the incremental contribution of a species to the probability of making a commercial discovery (Rausser, 2000). Methodological details on shadow values of biodiversity and recreational services are provided in Gundimeda et al. (2006).

3.2. Non-reproducible capital – mineral wealth

"India produces around 89 minerals including four fuel minerals, 52 non-metallic minerals, 11 metallic minerals and 22 minor minerals. The sector's contribution to GDP hovered around 2% to 2.3% during 1979 to 2005. The production statistics of 2004 show that fuels account for about 79%, metallic minerals about 8%, non-metallic minerals around 3% and minor minerals the remaining 10% (IBM, 2004). Among the fuel minerals, petroleum and natural gas contributed to around 43% and coal and lignite 36%. In terms of geographical distribution of mineral resources, the offshore

accounted for 29% value of the mineral production while the remaining was accounted for mainly by Andhra Pradesh (9%), Gujarat, Jharkhand (8% each), Chhattisgarh (7%), Orissa, Madhya Pradesh (6% each), Assam (5%), Maharashtra, Rajasthan, Uttar Pradesh (4% each) and West Bengal (3%). With its contribution of about 16% in exports and 20% in imports, the mineral sector is an important component of India's foreign trade. The majority of the exports (75%) are contributed by cut diamond and crude petroleum accounts for 67% of imports. As 85% of the value addition comes from coal, iron ore, oil, natural gas and limestone, only these were included for analysis " (Gundimeda, 2017).

"The value of stock of a natural resource (RV) can be computed as the net present value of the stream of the future resource rents the resources yield till exhaustion. Estimating net present value requires knowledge on (1) the resource rent, (2) rate of extraction of the resource, (3) the life span of the resource and (4) the discount rate. However, NPV approach is complicated due to the uncertainties in future price of the commodity, the technology, the true size of the deposits and the quality of the deposits that are yet to be found. In this study, the estimates of asset prices are based on net price method. The data have been obtained from the Central Statistical Organization and the annual reports of the mining companies " (Gundimeda, 2016).

The physical stock data were obtained from the publication "Indian Minerals Year book" published by Indian Bureau of Mines. What is considered as stock is an important issue worth exploring here. The most commonly used system of classification is McKelvey classification, which classifies mineral resources based on the two combined criteria i.e. the degree of uncertainty (proven, probable or classified as measured, indicated, inferred, potential and speculative) and economic feasibility of extraction (economic, marginally-economic, sub-economic). "Proven" reserves are those where it is known that it is both technically feasible and economically viable to extract the mineral resource. "Probable" includes the reserves that are known to exist but where some doubt exists over whether they are technically or economically viable. "Possible" covers reserves where there is considerable doubt over the technical and or financial viability of extraction. "Potential" reserves are known to exist but thought to be not technically or economically feasible to extract. "Speculative" reserves cover estimates which have not been positively identified but which, based on previous geological experience, it is reasonable to expect in proximity to that already in the "proven" and "probable" categories (Lange & Wright, 2004). For computing the wealth estimates, only proven reserves were considered.

The biggest challenge comes from valuation of the physical stock of minerals. Market prices if available provide a good description of the scarcity. However, these prices are often distorted due to institutional arrangements. If the private parties own the asset, it is possible to get market prices but if the assets are owned by government and are not sold, market prices do not exist. If there are no market prices, (SEEA, 2012) suggests using the cost of extracting the assets as a lower bound on its value. The argument behind using such an approach is that assets would not be extracted unless the benefits obtained were at least as high as the costs.

3.3. Human capital

The following section is an extract from Gundimeda et al. (2007). Human capital is one of the most important assets of a country and a key determinant of a nation's economic performance. Human capital can be defined in many ways, but in this

paper we have used the following definition adopted by OECD (Organization for Economic Cooperation and Development) (1998): "The knowledge, skills, competences and other attributes embodied in individuals that are relevant to economic activity." Human capital, in this paper, is captured through returns to education as done by other seminal contributions Becker (1966); Mincer (1974); and Schultz (1961). In the literature we find three different approaches to estimate the value of human capital – the "cost-based approach" (cost-of-production approach), the "income-based approach" (capitalized earnings procedure), and the "educational stock-based approach." In cost-based approach, the human capital is estimated using the depreciated value of the dollar amount spent on an individual. The income-based approach (capitalized earnings procedure) measures the total human capital embodied in an individual who has completed his schooling by the total discounted values of expected future stream of lifetime earnings. The most commonly used measures for "educational stock-based approach" include education-augmented labour input, adult literacy rates, school enrolment ratios and the average years of schooling of the working-age population. As activities like formal education, on-the-job training, specific training and other recognized investments in human capital have an influence on earnings, which also include some costs. Thus, the total amount invested in human capital and the rate of return on this investment can be estimated from using the information on observed earnings and costs of schooling and foregone earnings.

The estimates of human capital are obtained as follows (based on Gundimeda et al. (2007)). The stocks of population categorized by age cohorts, rural and urban, male and female by educational qualifications for different years is obtained from the Census data published by the Government of India. The shadow price on educational capital stock is obtained by first estimating a Mincerian earning function where in the wage of an individual is regressed on the level of schooling, skills possessed, technical qualifications, on-the-job training (job experience used as a proxy) and other socio-economic characteristics that represent the innate abilities of the individual. From the estimated Mincerian function, the predicted wages for different age cohorts by the educational levels has been obtained from the marginal rate of return for different educational qualifications, gender and geographical location. The predicted wage for different educational levels, gender and geographic locations were used to obtain the net present value of the lifetime labour income. The present value of the lifetime labour income of an individual is the discounted value of future income weighted by the probability of survival and the discount rate. For estimating the lifetime labour income two stages were used: (1) work and study stage (age group 15–25) and (2) work only. The total value of the human capital in different Indian states is obtained by multiplying the present value of annualized life income for different educational qualifications for different age cohorts with the population in each educational group in different age cohorts from the Census data.

3.4. Physical capital

Capital stock of a country is broadly referred to as that part of national wealth which is reproducible; it consists of all resources which contribute to the production of goods and services. The United Nations Guidelines in 1977 defined the national wealth as "total of various kinds of net tangible and intangible non-financial assets of residents, plus financial claims on non-residents less financial liabilities to

non-residents." "Tangible assets have been further classified into (i) reproducible tangible assets (i.e. capital stock) comprising fixed assets and stocks (i.e. inventories) and (ii) non-reproducible tangible assets comprising, land, timber tracts and forests, subsoil assets and extraction sites, fisheries and historical monuments. The reproducible fixed tangible assets (i.e. fixed assets used for the production of goods and services) commonly known as fixed capital stock comprise assets in the form of residential buildings, non-residential buildings, dams, irrigation and flood control projects, other construction works, transport equipment, machinery and equipment, breeding stock, drought animals, dairy cattle and the like, and capital expenditure on land improvement, plantations, orchard developments and afforestation. These fixed assets include uncompleted construction assets also". However, while net fixed capital stock estimates by type of institution are available from the Central Statistical Organization, the capital stock estimates are not available at the state level in India. The gross fixed capital formation by assets and industry for the public sector are available for some of the states. Thus, in this chapter a comparison is made by gross fixed capital formation alone.

4. Links to state-level analysis and changes in different forms of capital in India

Figure 6.5 gives the share of capital stocks in different states in India. The states Himachal Pradesh, Mizoram, Tripura, West Bengal, Tamil Nadu and Kerala emerge as the wealthiest states in terms of natural capital, and the states Bihar (including

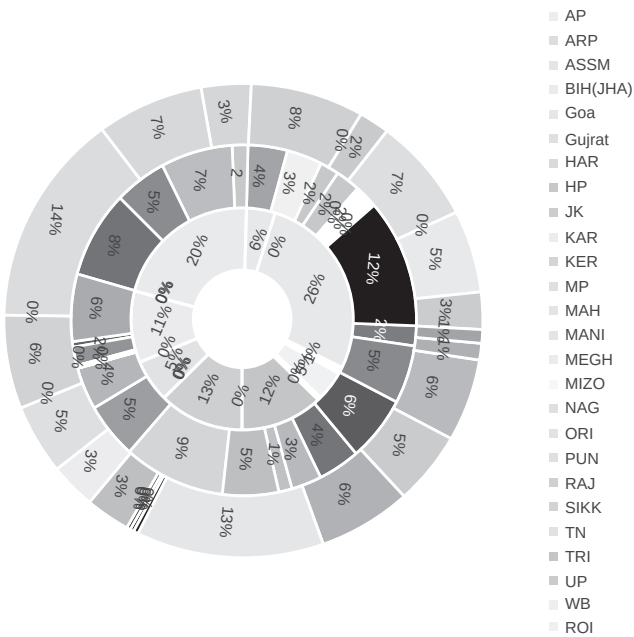

Figure 6.5 Share of forest, subsoil assets and human capital in Indian states

Source: Based on author's estimates.

Jharkhand), Madhya Pradesh (including Chhattisgarh), Karnataka, Rajasthan, Andhra Pradesh and Orissa have rich mineral capital. The states Uttar Pradesh (including Uttarakhand), Maharashtra, Andhra Pradesh, West Bengal and Tamil Nadu have very high human capital.

The data on produced capital stock estimates at the state level are not available, but based on the cumulative gross capital formation in the decade, the states Gujarat, Maharashtra, Tamil Nadu, Karnataka, Andhra Pradesh and Orissa top. So if we take comprehensive wealth (sum of all capitals – produced, human and natural capital) and produced capital proxied by cumulative gross fixed capital formation, together, we see that the states Gujarat, Maharashtra, Tamil Nadu, Karnataka and Uttar Pradesh (including Uttarakhand) emerge the richest in terms of absolute comprehensive wealth. Estimating separate capital stock estimates for these states is required to know their exact ranking. However, viewed in terms of per capita wealth, the states Goa, Gujarat, Himachal, Karnataka, Haryana, Orissa, Maharashtra and Sikkim emerge in the top eight. The data for gross fixed capital formation are not available for Sikkim and despite this, Sikkim is ranked among the top ten richest states. The state has seen an increase in GDP growth and has seen very proactive environmental measures. These are also the states which have high per capita income and have registered above average growth rates during the decade.

5. Conclusions

Table 6.1 summarises the results. The analysis indicates that the states are at different stages of development but to understand the long-term sustainability of these economies requires a much deeper capital perspective. The economic thinking should embed within it the connections between different forms of capital and their interlinkages. The states which have registered high decadal growth rates – Sikkim, Uttarakhand, Goa, Gujarat and Tamil Nadu – are also the ones with rich natural capital and comprehensive wealth. In terms of the per capita wealth, the states Goa, Gujarat, Himachal, Karnataka, Haryana, Orissa, Maharashtra and Sikkim emerge in the top eight, in line with per capita income. There is clear evidence that development of a state is not explained by GDP growth alone but is clearly impacted by the interaction between institutions and natural resource abundance along with the level of investments in education and physical capital, as seen from the growth in some of the northeastern states in India. Kerala tops in HDI and natural capital but in terms of per capita income it is among the bottom eight. Different forms of capital can be substitutes or complements, and the degree of substitutability or complementarity should be analysed. Population growth exerts pressure on the natural resources, thereby diminishing the income prospects of the economies if adequate investment does not take place.

The study has certain limitations. The estimates in this study are very conservative. In the mining states, the value of mineral wealth may be severely undervalued because the mining operations are mostly under the control of government regulation. The rents captured by the Indian mining sector are also very low. Moreover, the market is far from perfect because of subsidies, imperfect prices and low cost of labour. Though Indian government levies a number of taxes and fees on its mineral industry, the revenue earned through these levies is not sufficient. For many

Table 6.1 Ranking of states based on HDI, per capita GSDP and investments in comprehensive wealth

HDI	*Per capita NSDP*	*GSDP*	*Comprehensive wealth*	*Natural capital*	*Cumulative gross capital formation*	*Human capital*	*Mineral wealth*
Kerala	Goa	Maharashtra	Gujarat	Himachal Pradesh	Gujarat	Uttar Pradesh	Bihar
Goa	Sikkim	Tamil Nadu	Maharashtra	Mizoram	Maharashtra	Maharashtra	Madhya Pradesh
Himachal Pradesh	Haryana	UTTAR PRADESH	Tamil Nadu	Tripura	Tamil Nadu	Andhra Pradesh	Karnataka
Tamil Nadu	Maharashtra	GUJARAT	Karnataka	West Bengal	Karnataka	West Bengal	Rajasthan
Maharashtra	Tamil Nadu	WEST BENGAL	Uttar Pradesh (incl Uttarakhand)	Tamil Nadu	Andhra Pradesh	Bihar	Andhra Pradesh
Punjab	Gujarat	Karnataka	Andhra Pradesh	Kerala	Orissa	Tamil Nadu	Orissa
Haryana	KARNATAKA	Rajasthan	Odisha	Karnataka	Uttar Pradesh	Madhya Pradesh	Madhya Pradesh
West Bengal	Uttarakhand	Andhra Pradesh	Madhya Pradesh (Chattisgarh)	Meghalaya	Jharkhand	Karnataka	
Jammu and Kashmir	Himachal Pradesh	Kerala	West Bengal	Nagaland	Haryana	Gujarat	
Gujarat	Nagaland	MADHYA PRADESH	Haryana	Uttar Pradesh (incl. Uttarakhand)	West Bengal	Kerala	
Uttarakhand	Punjab	Haryana	Rajasthan	Orissa	Rajasthan	Rajasthan	
Karnataka	Jharkhand	Punjab	Punjab	Madhya Pradesh (incl. Chattisgarh)	Chattisgarh	Orissa	
Mizoram	Tripura	Bihar	Himachal Pradesh	Andhra Pradesh	Uttarakhand	Punjab	
Tripura	Andhra Pradesh	Orissa	Kerala	Arunachal Pradesh	Punjab	Haryana	
Sikkim	Mizoram	Jharkhand	Assam	Maharashtra	Madhya Pradesh	Assam	

Rajasthan	Arunachal Pradesh	Chattisgarh	Bihar (Jharkhand)	Bihar (incl. Jharkhand)	Himachal Pradesh	Jammu and Kashmir
Andhra Pradesh	Meghalaya	Assam	Goa	Rajasthan	Kerala	Himachal Pradesh
Orissa	West Bengal	Uttarakhand	Jammu and Kashmir	Jammu and Kashmir	Assam	Tripura
Nagaland	Rajasthan	Himachal Pradesh	Meghalaya	Assam	Goa	Nagaland
Meghalaya	Jammu and Kashmir	Jammu and Kashmir	Tripura	Gujarat	Bihar	Manipur
Jharkhand	Madhya Pradesh	Goa	Sikkim	Manipur	Jammu and Kashmir	Goa
Manipur	Chhattisgarh	Tripura	Manipur	Sikkim	Meghalaya	Meghalaya
Madhya Pradesh	Orissa	Meghalaya	Nagaland	Goa	Sikkim	Arunachal Pradesh
Chhattisgarh	Kerala	Nagaland	Mizoram	Punjab	Tripura	Mizoram
Bihar	Manipur	Manipur	Arunachal Pradesh	Haryana	Manipur	Sikkim
Assam	Assam	Arunachal Pradesh	Gujarat	Himachal Pradesh	Nagaland	Uttar Pradesh
Arunachal Pradesh	Uttar Pradesh	Sikkim	Maharashtra	Mizoram		Maharashtra
Uttar Pradesh	Bihar	Mizoram				Orissa

Source: Summary tables based on the analysis in the paper and earlier studies by the author (Gundimeda, How equitable and sustainable is the growth in India, 2016).

minerals, the net rents are negative. All these could result in an underestimate of the value of minerals. It should also be remembered that mining is often involved with significant environmental degradation and health impacts, which are not considered in the study because of lack of data. Similarly, the forests have a lot of unaccounted benefits and they are not properly reflected in the national accounts and thus these values are to be viewed as conservative. The data on produced capital stocks are not available and the data on gross capital formation are not available for all the states, limiting the analysis. These are some of the limitations of this study and more recent estimates of capital stock will be useful and these estimates are being updated by the author and are still under progress.

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Part III

New insights

7 Human capital

Educational attainment progress

Barbara M. Fraumeni and Gang Liu

1. Introduction

Human capital is an essential component of individual well-being and vital for a country's sustainability (e.g. OECD, 2013; UNU-IHDP and UNEP, 2014). Arguably more attention around the world has been paid to gross domestic product (GDP) than any other indicators, including human capital. Although GDP is an important macroeconomic construct, it fails to consider environmental and inequality impacts, and the future viability of a country (e.g. Stiglitz et al., 2010).

Human capital and other wealth measures as presented in this report will help to fill the gaps in GDP. This chapter focuses on human capital, particularly on those that are captured in levels and trends in country's educational attainment, with reference to the United Nations' Millennium Project and Sustainable Development education goals.

The UN Millennium Project, an international effort which operated from 2002 through 2006, established eight goals and 18 technical indicators with 48 associated targets to measure progress towards the Millennium Development Goals (MDGs). Two goals relate to education: Goal 2 – Achieve Universal Primary Education and Goal 3 – Promote Gender Equality and Empower Women. The stated objective of Target 3 of Goal 2 is to have all boys and girls complete a full course of primary schooling by 2015. The stated objective of Target 4 of Goal 3 is to eliminate gender disparity in primary and secondary education in the short-run (2005) and in all levels of education in the intermediate run (2015).

However, as stated in the report of the UN Secretary-General, despite progress, the world failed to meet the MDGs of achieving universal primary education by 2015. For instance, in 2013, 59 million children of primary school age were out of school. Estimates show that, among those 59 million children, 1 in 5 of those children had dropped out. In addition, recent trends suggest that 2 in 5 of out-of-school children will never set foot in a classroom (UN, 2016).

In 2015, the United Nations' member states reached agreement on 17 Sustainable Development Goals (SDGs) with 169 associated targets. SDG 4 and SDG 5 are similar to MDG 2 and MDG 3, respectively. SDG 4 calls for inclusive and quality education for all and the promotion of lifelong learning by 2030. SDG 5 calls for gender equality by 2030, noting the importance of education and the elimination of discrimination in jobs, unpaid work and political office in achieving the goal.

Following an indicators-based approach to measuring human capital,[1] human capital developed due to education is frequently proxied by educational attainment,

such as average years of schooling. A famous example in this field is the Barro-Lee dataset that has been established through many years' research (see Barro and Lee, 2001, 2013). The previous Inclusive Wealth Reports (IWR) also used the Barro-Lee dataset as one of the primary data sources for calculating monetary estimates of human capital (e.g. IWR, 2012, 2014).

This chapter, by using numerical estimates based mainly on the latest Barro-Lee dataset (Barro and Lee, 2016), tries to investigate educational attainment progress across major regions in the world, and over the time period of 1950–2010. We also investigate what has been achieved during this time period with reference to the educational attainment gender gaps and age differences in different regions. As the quality of education matters as well as the average years of schooling, discussions are also provided around the methods about how the quality side of educational attainment is practically taken into account.

In the next section, the methodology for compiling the Barro-Lee dataset is summarized. This is followed by the section presenting and discussing several numerical results. A subsequent section focuses on the quality of education, where by using the implicit quality-adjustment method, the findings drawn from the progress of primary, secondary and tertiary education are presented and discussed as well. The final section concludes.

2. Barro-Lee methodology

Barro-Lee average years of schooling estimates enter into the IWR human capital (due to education) calculations in two ways. The IWR uses a country representative adult approach. The representative adult's educational attainment by gender (*Edu*) comes from the Barro-Lee average years of schooling. The minimum age of an adult in a country by gender is determined by *Edu*+5. The total number of adults by gender is equal to the number of individuals in the country who are at least the minimum age. All adult individuals are counted whether or not they perform paid work. A complete description of the IWR human capital measuring methodology is in Annex 2.

The Barro-Lee dataset (2016) is available by gender in five calendar year increments from 1950 through 2010 for five-year age groups from age 15 through 74, and for age 75 and over, for 146 countries. The data used in this chapter by age groups and gender include population, the no school percentage and the average years of total schooling, as well as the average years of primary, secondary and tertiary schooling, respectively.

The Barro-Lee benchmark data are collected from various census and / or survey information and compiled by UNESCO, Eurostat, national statistic agencies and other sources.[2] The Barro-Lee dataset uses a variety of techniques to fill in gaps in observations and educational attainment subcategories, with the purpose to avoid misestimating of average years of schooling.

To fill in missing observations (as benchmarks are not available for all five-year periods), they begin by calculating the distribution of educational attainment among four broad categories: no formal education (h_u), primary (h_p), secondary (h_s) and tertiary education (h_h). Primary and tertiary are further divided into complete and incomplete; secondary is further divided into lower secondary and upper secondary.

Most missing observations are filled in with backward or forward extrapolation with an appropriate time lag. The 13 five-year age groups are referred to by *ag* = 1

(15–19 years old) through to ag = 13 (75 years and over). The forward extrapolation method assumes that the educational attainment distribution of the age group ag at time t is identical to that of the age group that was five years younger at time $t - 5$.

Equation 1

$$h_{j,t}^{ag} = h_{j,t-5}^{ag-1},$$

where $j = u, p, s, h$ and ag = 3 (25–29 years old), through to ag = 11 (65–69 years old).

This forward extrapolation applies to individuals who have completed their schooling by time $t - 5$. As those younger than 25 are potentially still in school, a different methodology is employed.

Similarly, the backward extrapolation assumes that the educational attainment distribution of the age group ag at time t is the same as that of the age group that is five years older at time t+5.

Equation 2

$$h_{j,t}^{ag} = h_{j,t+5}^{ag+1},$$

where $j = u, p, s, h$, and ag = 2 (20–24 years old), through to ag = 10 (60–64 years old).

As a result, the net effect of this methodology is to hold an individual's educational attainment constant from age 25 through to 64.

For older individuals, the probability of dying is observed to differ by educational attainment level. Accordingly, for the three oldest age groups: ag = 11 (65–69 years old), ag = 12 (70–74 years old) and ag = 13 (75 years and over), survival probabilities are estimated by educational attainment level. Highly educated individuals live, on average, longer than their less educated peers; this correction is necessary to ensure accurate estimations of average educational attainment for older age groups. For all younger age groups (ag = 10 (60–64 years old) and below), it is assumed that survival rates do not differ by educational attainment.

The process for creating subcategories of educational attainment (complete and incomplete for primary and higher education; lower and upper for secondary school) depends upon the age level. For primary school, the Barro-Lee dataset uses country and age-specific completion ratio profiles to estimate the subcategories for ag = 1 (15–19 years old) and ag = 2 (20–24 years old). For ag = 3 (25–29 years old), the primary school completion rate is set equal to the ratio of the number of individuals who completed primary school, but did not enter secondary school, to the number of individuals who entered primary school. Backward and forward extrapolation and other methods are used to fill in any missing observations for ag = 3 (25–29 years old) and above.

When there are missing observations, secondary school enrollees for ag = 1 (15–19 years old) are assumed to be incompletely educated at the secondary level, and higher-school enrollees for ag = 2 (20–24 years old) are assumed to be incompletely educated at the higher level.

Other estimation problems arise because some countries do not report the proportion of the population who have no formal education, but do report on the proportion of the educated population who have achieved primary, secondary or

tertiary level of education. Alternatively, the proportion of the population with no formal education, or who have achieved at most some level of primary education, is often reported as a single number. The Barro-Lee dataset uses illiteracy rate, primary enrolment ratio and / or data from other census years to resolve such inconsistencies.

Finally, estimations are made for the average number of years of schooling for the population aged 15 and above, and separately for each of the 13 five-year age groups. For those aged 15 and above, the average years of total schooling at time t, S_t, is measured as:

Equation 3

$$S_t = \sum_{ag} l_t^{ag} s_t^{ag},$$

where the summation is over all age groups (i.e. ag = 1 (15–19 years old), ag = 2 (20–24 years old), . . ., ag = 13 (75 years old and over); l_t^{ag} is the population share of the group ag in the total population aged 15 and above; s_t^{ag} is the average number of years of schooling for age group ag.

The average number of years of schooling by age group ag at time t is:

Equation 4

$$S_t^{ag} = \sum_j h_{j,t}^{ag} d_{j,t}^{ag},$$

where the summation is over educational attainment levels $j = p, s$ (incomplete, complete), h (incomplete, complete); $h_{j,t}^{ag}$ is the fraction of the group ag with the educational level j; $d_{j,t}^{ag}$ is the corresponding duration of school attendance in years.

3. Educational attainment, gender gaps and age differences

To examine educational attainment progress in the world and across the different regions, the 146 countries covered by the Barro-Lee dataset are divided first into two broad groups: Advanced and other economies. The Advanced Economies consist of 24 countries, other economies are divided into six regions: East Asia and the Pacific (19 countries or special administrative districts); Europe and Central Asia (20 countries); Latin America and Caribbean (25 countries); Middle East and North Africa (18 countries); South Asia (7 countries); and Sub-Saharan Africa (33 countries).[3]

In Table 7.1, information on the educational attainment (in terms of the average years of total schooling) is presented for the total population aged 15 and above, for both males and females, in all the seven regions over the period covered by Barro and Lee (2013), i.e. 1950–2010. As shown, all regions in the world have made significant progresses in educational attainment during this period.

By 2010, the Europe and Central Asia region has almost caught up with the Advanced Economies, and its average educational attainment levels for both males and females are just slightly lower than those of the latter. Until the most recent period of 2000–2010, the average rate of percentage increase per year for the Europe and Central Asia exceeds that for the Advanced Economies.

Table 7.1 Educational attainment, aged 15 and above, by region and gender

	Average years		*Average increase per year (percentage)*					
	2010		*1950–2010*		*1950–2000*		*2000–2010*	
	Female	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*
Advanced Economies	11.4	11.7	1.03	0.96	1.04	1.01	1.00	0.71
East Asia and the Pacific	7.6	8.3	3.17	2.21	3.48	2.48	1.67	0.87
Europe and Central Asia	11.2	11.4	1.72	1.35	1.90	1.51	0.82	0.54
Latin America and Caribbean	8.3	8.3	2.04	1.77	2.14	1.85	1.55	1.37
Middle East and North Africa	6.8	7.9	4.75	3.39	5.18	3.80	2.66	1.35
South Asia	4.8	7.3	4.23	2.62	4.68	2.86	2.03	1.41
Sub-Saharan Africa	4.8	5.9	2.81	2.19	2.94	2.40	2.19	1.14

Source: Authors' calculations based on Barro-Lee February 2016 version (www.barrolee.com).

Not surprisingly, the Sub-Saharan Africa region has the lowest average 2010 educational attainment, and for the period as a whole (1950–2010), and in the first subperiod (1950–2000), its average percentage increase per year is not among the highest in all regions. This is also true for males in the second subperiod (2000–2010). Only for females and in the second subperiod has its average percentage increase per year reached the second place among all regions.

For the whole period (1950–2010) and the first subperiod (1950–2000), the Middle East and North Africa region has the highest average percentage increase per year for both males and females, but in the last subperiod (2000–2010), although its average percentage increase per year is still the highest for females, it recedes to the third place for males in all regions. The South Asia region has the second highest average percentage increase per year both for the whole period (1950–2010) and the first subperiod (1950–2000), but in the second subperiod (2000–2010), its average percentage increase per year is the highest for males, while it falls to the third place for females in all regions. For all seven regions, the average percentage increase per year is lower in 2000–2010 than in 1950–2000, regardless of gender.

The slowdown in percentage growth rate of educational attainment progress is quite noticeable in the East Asia and the Pacific, the Europe and Central Asia, the Middle East and North Africa, and the South Asia regions, where the average percentage increase per year in 2000–2010 roughly halved for females, and more than halved for males, compared to the corresponding 1950–2000 percentage rates. For males in the Sub-Saharan Africa region, the average percentage increase per year in 2000–2010 more than halved its 1950–2000 percentage rate.

Average yearly percentage increases tend to fall as the level of educational attainment rises, indicating that advancement relative to existing levels may be significantly easier when educational attainments are low compared to when they are higher.

To answer the question whether the current educational attainment gaps among the regions can be filled up by 2030, a simulation analysis is carried out based on the estimates shown in Table 7.1. Three scenarios are simulated where Scenario M,

Scenario H and Scenario L refer to that all regions, starting from the 2010 educational attainment level, follow the average annual percentage increase rate of 1950–2010, 1950–2000 and 2000–2010, respectively. In other words, Scenario M, H and L represent relatively Middle, High and Low growth scenarios, respectively.

The simulation results are displayed in Figure 7.1, separately for males and females. Using the 2030 educational attainment level in the Advanced Economies as the target, the predicted 2030 levels in the Europe and Central Asia and the Middle East and North Africa regions, for both males and females, will be higher in Scenario M and Scenario H, while lower in Scenario L, than the corresponding levels in the Advanced Economies.

For the East Asia and the Pacific region, the predicted 2030 educational attainment level for females is higher than that in the Advanced Economies in Scenario M and Scenario H, while lower in Scenario L. For males, the predicted 2030 level in this region is lower in all three scenarios. As for the Latin America and Caribbean, the South Asia, and the Sub-Saharan Africa regions, their predicted 2030 educational attainment levels, for both males and females, and regardless of the scenario, are all lower than the corresponding levels in the Advanced Economies.

The situation is even more critical for the last mentioned three regions. For the Latin America and Caribbean region, the predicted 2030 educational attainment level in Scenario L is even lower than the 2010 level in the Advanced Economies. This is also true for the South Asia region; in addition for females in Scenario M, the predicted 2030 educational attainment level is lower than the 2010 level in the Advanced Economies. In the Sub-Saharan Africa region, in all scenarios and regardless of gender, the predicted 2030 levels are significantly lower than the corresponding 2010 levels in the Advanced Economies.

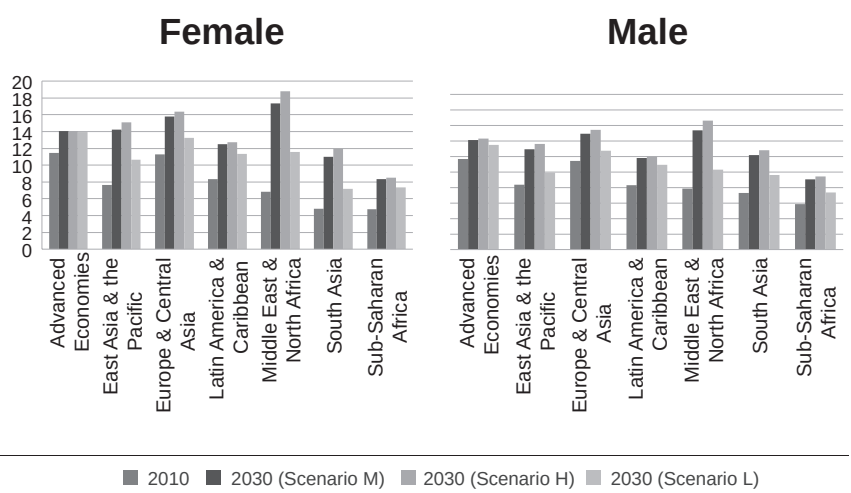

Figure 7.1 Predicted educational attainment in 2030 in different scenarios, by region, gender

Source: Authors' calculations based on Barro-Lee February 2016 version (www.barrolee.com).

Apparently, a variety of external factors in a number of countries may add to the difficulty of realizing educational gains, such as conflicts, poverty and recessions. Since the general state of many countries in the world, especially in the three last mentioned regions, points to the difficulty in attaining MDGs or SDGs educational attainment goals, more efforts are needed in order to catch up in the future.

Both MDGs and SDGs call for gender equity. As also shown in Table 7.1, in all regions, the average educational attainment of females is in general less than that of males in 2010. Only in the Latin America and the Caribbean region is there gender parity. In the Advanced Economies, East Asia and the Pacific, and Europe and Central Asia, the difference is at most 0.7 of a year of total schooling, but in the Middle East and North Africa, the Sub-Saharan Africa and the South Asia regions, it is substantially greater, i.e. 1.1, 1.1 and 2.5 years of total schooling, respectively.

However, for all periods and regions considered, the average percentage increase in educational attainment per year for females is without exception greater than that for males (see Table 7.1). As Table 7.2 shows, for the overall period, the Middle East and North Africa region is the leader in closing the gender gap in education, but the progress is notable for all regions except in the Advanced Economies and in the Latin America and the Caribbean region, which have the smallest average educational gender gaps already in 1950.

Note that the regions which have the largest educational attainment gender gaps in 2010 (the South Asia and the Sub-Saharan Africa regions) as shown in Table 7.2 are also those having lowest average years of total schooling as shown in Table 7.1. For the Sub-Saharan Africa region, the 2010 educational attainment gender gap can almost be filled up by 2030 if following the latest average annual gap reduction, while for the South Asia region, even faster (than that shown in Table 7.2) annual reductions are needed to fill the 2010 gap, which is the largest among all regions in 2010.

Literature review on private returns to schooling has demonstrated that returns to schooling seem to be higher in low or middle-income economies than in high-income economies. Moreover, estimated returns to schooling are higher for females

Table 7.2 The gender educational attainment gap*, aged 15 and above, by region

	Average gap (percentage)			*Average reduction per year (percentage points)*		
	1950	*2000*	*2010*	*1950–2010*	*1950–2000*	*2000–2010*
Advanced Economies	6.5	5.0	2.2	0.07	0.03	0.28
East Asia and the Pacific	48.1	15.6	8.6	0.66	0.65	0.70
Europe and Central Asia	20.8	4.3	1.6	0.32	0.33	0.27
Latin America and Caribbean	15.0	1.6	–0.1	0.25	0.27	0.17
Middle East and North Africa	60.4	23.5	13.0	0.79	0.74	1.05
South Asia	74.2	38.0	34.2	0.67	0.72	0.39
Sub-Saharan Africa	43.4	26.6	18.6	0.41	0.34	0.80

Source: Authors' calculations based on Barro-Lee February 2016 version (www.barrolee.com).

* The gender educational attainment gap in percentage points is defined as (1 − (female educational attainment / male educational attainment)) × 100.

than for males (e.g. Psacharopoulos, 1994; Psacharopoulos and Patrinos, 2004). This conclusion holds both for the world as a whole and for all regions individually (Montenegro and Patrinos, 2014). Therefore, investments in education are more rewarding in these regions than in others, as well as for females than for males.

A comparison of educational attainment of 25–34-year-olds to 55–64-year-olds gives a sense of what the future might look like given current levels of educational attainment of younger potential workers. Because younger workers have longer remaining working years than their elder counterparts, they will contribute more to the future economic growth. Table 7.3 reports on the educational attainment of aged 25–34 relative to those of aged 55–64 by percentage range groups. The individual cells of Table 7.3 show how many countries in each region fall in the five percentage range categories. For example, there are two countries in the Advanced Economies having the calculated percentage points between 50% and 100%, and nine countries in the range of 20% to 50%, etc.

As shown in Table 7.3, clearly the largest concentrations of the Sub-Saharan Africa and the South Asia countries are in the range of greater than 50% to at most 500% category. The largest concentrations of the Latin America and Caribbean and the East Asia and the Pacific countries are in the greater than 20% to at most 100% range category. The largest concentration of the Advanced Economies, however, is in the greater than 0% to at most 50% range category. Finally, the largest concentration of the Europe and Central Asia countries are in the range of 0 or less percent to at most 20% category, while the countries in the Middle East and North Africa regions are more or less evenly distributed over the five percent range categories.

These results in particular point toward the future educational attainment potential gains of the Sub-Saharan Africa countries, and the potential slowdown in

Table 7.3 Country distribution by educational attainment differences of younger (25–34) vs. older (55–64) in 2010

Percentage range (%)	*(100–500]*	*(50–100]*	*(20–50]*	*(0–20]*	*(-∞-0]*	*No. of countries*
Advanced Economies	0	2	9	12	1	24
East Asia and the Pacific	3	7	7	2	0	19
Europe and Central Asia	0	0	1	13	6	20
Latin America and Caribbean	2	9	9	4	1	25
Middle East and North Africa	6	3	4	2	2	17
South Asia	4	2	1	0	0	7
Sub-Saharan Africa	16	11	5	1	0	33
SUM						145

Source: Authors' calculations based on Barro-Lee February 2016 version (www.barrolee.com).

Notes:
1. The educational attainment differences of younger (25–34) vs. elder (55–64) in percentage points are defined as (educational attainment of aged 25–34 – educational attainment of aged 55–64) / educational attainment of aged 55–64;
2. Yemen (in Middle East & North Africa) is excluded from this table as its educational attainment of 25–34 year olds is approximately 5000% higher than that of 55–64 year olds.
3. The symbol "(" denotes greater than and the symbol "]" denotes less than or equal to.

educational attainment gains in Europe and Central Asia, as well as in Advanced Economies.

A goal of SDG 4 is for all youths to achieve literacy and numeracy by 2030. The facts and figures section of SDG 4 notes that almost half of all children not in school are in the Sub-Saharan Africa region. This comment is also reflected in analysis results based on the Barro-Lee dataset.[4] In 2010, the Sub-Saharan Africa region still has a larger number of countries than other regions with a high share of individuals aged 15–19 who have no years of schooling: 17 of 33 countries with no school percentages over 20%. In contrast, the other regions each have at most three countries with such a high percentage of individuals aged 15–19 with no school.

On the other hand, almost 25% (eight countries) of the Sub-Saharan Africa countries have at most two percent of individuals aged 15–19 without school. For all other regions in the Barro-Lee dataset, this low category of no school contained much larger shares of countries in each region, from a low of about 43% of countries for the South Asia to a high of 85% of countries for the Europe and Central Asia. In many countries of the regions considered, the goal of universal literacy has essentially been accomplished, but in others progress has yet to be made.

4. Quality of education

Up to now, focus has been put solely on the quantitative side of educational attainment, in terms of the average years of total schooling. An obvious fact is that human capital accumulated due to education will be different if the quality of education varies. Since quality education is more explicitly addressed in SDG 4, this section will discuss the quality side of educational attainment progress.

In contrast to the quantity of education, the quality of education is non-observable. It can only be reflected by indicators of outcomes, either directly (such as by test scores) or indirectly (such as by differentials of economic or non-economic benefits),[5] through the use of human capital. But all these direct or indirect outcomes are determined not only by human capital alone, but also by many other environmental factors that will play important roles leading to the occurrence of certain outcomes (see Liu and Fraumeni, 2016).

In order to take into account the qualitative side of the educational attainment, there are in general two ways, either explicitly or implicitly.

4.1. Education quality – treated explicitly

Taking quality *explicitly* is to directly focus on some quality indicators, which are constructed based on various outcomes. For instance, test scores are often used as good indicators of quality of educational attainment (e.g. Hanushek and Kimko, 2000; Angrist et al., 2013; Altinok et al., 2014; Barro and Lee, 2015). In some cases, internationally comparable test scores are even considered to be a direct measure of human capital stock (e.g. Hanushek and Kimko, 2000; Hanushek and Woessmann, 2012).

As mentioned, outcomes are jointly determined by many factors. Thus, one major challenge is how to separate the effects that are attributable to education from those due to other factors. For instance, innate ability is regarded as one of the important determinants of student's test achievements (see Hanushek, 1986; Hanushek and

Woessmann, 2011). Despite one element of human capital in a broad sense (see Liu and Fraumeni, 2014), at least some of the innate ability (such as natural-born talent) is not that type of human capital that is developed solely due to education.

Another difficulty of using test scores lies in translating test scores of different subject matters (e.g. reading, mathematics, science) into an aggregate common metric. The estimated relationship between the test scores (quality) and the average years of schooling (quantity) may depend on how the aggregate test scores are constructed.

In a recent dataset, the aggregate test scores are constructed based on scores for mathematics and science only, with those for reading excluded. It has been shown that the correlation coefficient of the average years of schooling and aggregate test scores for secondary students in 2010 among 146 countries is 0.70 (Barro and Lee, 2015).

However, as shown in Figure 7.2, the PISA aggregate test scores and the average years of schooling for those aged 15–19 in 2010 is not strongly correlated among 57 countries, with the calculated correlation coefficient between the corresponding rankings being just 0.24.[6,7] Note that here the PISA aggregate test scores are an equally weighted average of mean test scores of reading, mathematics and science.[8]

Results have also shown that in two small groups of economies (one group with 15 top-performers in educational attainment quantity, the other with 15 top-performers in secondary aggregate test scores), the correlation coefficient between the quantity (average years of schooling) and the quality (test scores) within each group is negative and low (Barro and Lee, 2015).

Therefore, the empirical results as regards the relationship between the average years of schooling (quantity) and the test scores (quality) drawn from internationally comparable test are mixed, and they depend not only on how the aggregate test scores are constructed, but also on the sample size as well.

To combine both the quantity and the quality side of educational attainment, research has been conducted by using the quality indicators to adjust the educational attainment quantity, the quality indicator including test scores (e.g. Barro and Lee, 2015), labour earnings (e.g. Barro and Lee, 2015) or lifetime income (IWR Reports, 2012, 2014). Since the data sources and the detailed choice of methodologies vary among these studies, findings from these studies may not be directly comparable.

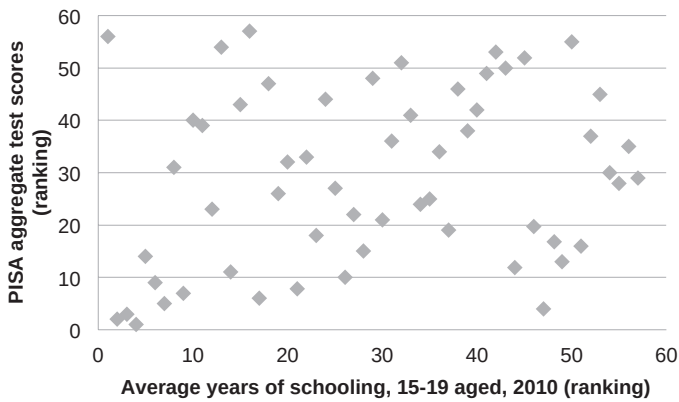

Figure 7.2 PISA aggregate test scores and average years of schooling (aged 15–19) in 2010

Sources: Barro-Lee February 2016 version (www.barrolee.com) and PISA mean test scores

4.2. Education quality – treated implicitly

Taking quality *implicitly* is to stratify quantitative educational attainment (e.g. average years of total schooling) into disaggregate categories (e.g. average years of primary, secondary and tertiary schooling), with the assumption that in terms of quality, all disaggregate categories are considered to be heterogeneous with each other, while homogenous within each single category.

Based on the Barro-Lee dataset, instead of using the average years of *total* schooling as discussed in previous sections, focus now is placed on the educational attainment progress in terms of average years of schooling by different categories, namely, primary, secondary and tertiary levels, across the world major regions and over 1950–2010.

As shown in Figure 7.3, in all regions, all three levels of educational attainment have increased over the observed period of 1950–2010. In particular, compared to

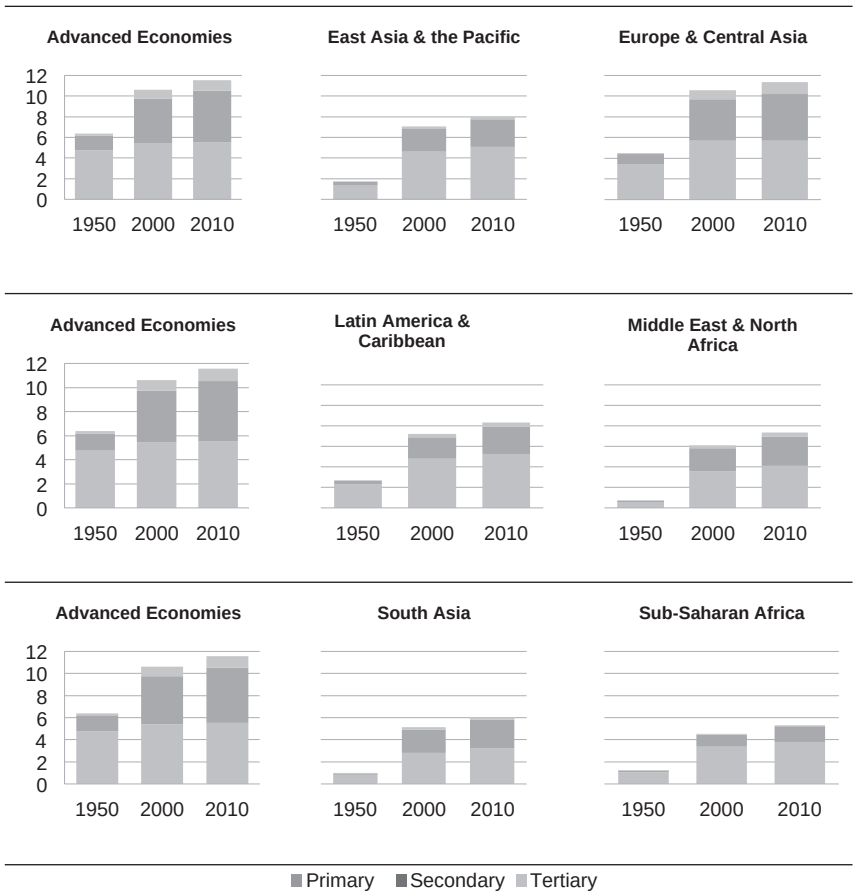

Figure 7.3 Average years of primary, secondary and tertiary schooling by regions, aged 15 and above, 1950, 2000, 2010

Source: Authors' calculations based on Barro-Lee February 2016 version (www.barrolee.com).

the Advanced Economies, the beginning all levels for other regions were lower in 1950, but progresses made in these regions are significant. For instance, the Europe and Central Asia region has acquired approximately the same corresponding levels as the Advanced Economies in 2010.

The Latin America and Caribbean regions has roughly the same primary educational level as the Advanced Economies in 2010.

Note that Advanced Economies had achieved almost the primary educational level of 2010 already in 2000, so had the Europe and Central Asia region. Using the education levels in 2010 in these two regions as target, the educational gaps are still visible for many other regions. And the secondary and tertiary levels in most of these regions are still lagging behind.

Human capital developed through education is one of the crucial driving forces for modern economic growth (e.g. Lucas, 1988; Romer, 1990a, 1990b), so demand for higher educated and skilled people is bound to be ever increasing in the days to come, both for the developed and for the developing countries as well.

Recent research has found that the private returns to tertiary education are higher than those to either primary or secondary education, in most of the regions considered in this chapter. In addition, among all regions, they are highest with a substantial margin in two regions with the lowest average years of tertiary schooling as shown in Figure 7.3, i.e. the South Asia and the Sub-Saharan Africa regions. These findings also hold for both males and females. Moreover, the returns to tertiary education for females are, without exception, larger than those for males in all regions (Montenegro and Patrinos, 2014).

5. Conclusions

Based on the Barro-Lee dataset, this chapter focuses on the level and trend of educational attainment progress, with reference to the MPGs and SDGs. In terms of the average years of total schooling, educational attainment has made significant progresses in the world and across the regions over 1950–2010. However, in 2010 the distribution of educational attainment is still uneven across the regions considered in the chapter, with some regions significantly lagging behind, if compared with Advanced Economies.

Filling these gaps by 2030 is challenging, especially for the Latin America and Caribbean, the South Asia and the Sub-Saharan Africa regions. Although some of these regions have shown considerable growth rates during the period of 1950–2010, because of low starting levels in 1950, their educational attainment levels in 2010 are still lower than that in Advanced Economies with sizable margins.

Simulation analyses indicate that even in the high growth scenario, the predicted 2030 educational attainment level in these regions (i.e. the Latin America and Caribbean, the South Asia and the Sub-Saharan Africa regions) will be lower than the corresponding level in Advanced Economies. Given that the average growth rate of the last subperiod (2000–2010) is significantly lower, compared to that in the first subperiod (1950–2000), to remove the currently existent gaps, more bolder efforts are needed, beyond the measures undertaken in the past.

MDGs and SDGs strongly support the reduction of gender disparity in education. Over the period of 1950–2010, the observed educational attainment gender gaps

have been decreasing. In particular, a significant progress has been achieved in the Middle East and North Africa, and the East Asia and the Pacific regions. However, large gaps are visible in the South Asia and the Sub-Saharan Africa regions in 2010, even though annual reduction of gender gaps in the two regions has accelerated and are the highest among all regions in the last subperiod (2000–2010). Thus, filling these gender gaps by 2030 demands more active actions.

In many regions considered in the chapter, the goal of universal literacy has essentially been accomplished in 2010, reflected by very low share of individuals aged 15–19 who have no years of schooling in the country of these regions. Unfortunately, in other regions, and in particular, in the Sub-Saharan Africa region, there are a large number of countries where the youth aged 15–19 are without school, and thus substantial progress needs to be made for these countries.

The quantity and equity of educational attainment are important, so is the quality. Education quality is more addressed in the SDGs. However, unlike the quantity, the quality of education is non-observable, and can only be proxied by some indicators, which are drawn based on various outcomes, such as test scores and labour earnings.

Research focusing on international comparable test scores and combining them with the quantitative average years of schooling is plentiful. However, due to the differences among the data sources, as well as the detailed methodological choices, results from these studies have yet to be further investigated.

Instead of focusing explicitly on the quality indicators, the chapter, by implicitly taking quality dimension into account, examines the educational attainment progress in terms of the average years of primary, secondary and tertiary schooling. Despite substantial progress in all levels, the secondary and tertiary levels are still significantly lagging behind for many of the regions, compared to Advanced Economies and the Europe and Central Asia region in 2010.

As economic development necessitates wide employment of higher educated people in the future, and research results have shown that private economic returns to the investments in higher education are larger than in primary education, and the returns are highest in the least developed regions, such as the South Asia and the Sub-Saharan Africa regions, more investments in higher education in these regions are therefore rewarding.

Notes

1 For discussions on other approaches to measuring human capital, as well as the strengths and weaknesses associated with each measuring approach, please refer to Liu and Fraumeni (2014).

2 The description of the Barro-Lee methodology draws heavily from Chapter 4 of the 2014 Inclusive Wealth Report (Fraumeni and Liu, 2014), which is the description of the methodology applied in Barro and Lee (2013).

3 The 24 Advanced Economies include: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States. The 19 East Asia and the Pacific countries or special administrative districts include: Brunei Darussalam, Cambodia, mainland China, China – Hong Kong, China – Macao, Fiji, Indonesia, Lao People's Democratic Republic, Malaysia, Mongolia, Myanmar, Papua New Guinea, Philippines, Republic of Korea, Singapore, Taiwan, Thailand, Tonga and Viet Nam. The 20 Europe and Central Asia countries include: Albania, Armenia, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Poland, Republic of Moldova,

Romania, Russian Federation, Serbia, Slovakia, Slovenia, Tajikistan and Ukraine. The 25 Latin America and Caribbean countries include: Argentina, Barbados, Belize, Bolivia, Brazil, Chile, Columbia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Trinidad and Tobago, Uruguay and Venezuela. The 18 Middle East and North Africa countries include: Algeria, Bahrain, Cyprus, Egypt, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kuwait, Libyan Arab Jamahiriya, Malta, Morocco, Qatar, Saudi Arabia, Syrian Arab Republic, Tunisia, United Arab Emirates and Yemen. The seven South Asia countries include: Afghanistan, Bangladesh, India, Maldives, Nepal, Pakistan and Sri Lanka. The 33 Sub-Saharan Africa countries include: Benin, Botswana, Burundi, Cameroon, Central African Republic, Congo, Cote d'Ivoire, Democratic Republic of the Congo, Gabon, Gambia, Ghana, Kenya, Lesotho, Liberia, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Reunion, Rwanda, Senegal, Sierra Leone, South Africa, Sudan, Swaziland, Togo, Uganda, United Republic of Tanzania, Zambia and Zimbabwe.

4 Detailed analysis and the results are not fully presented here but are available upon request.

5 Here "direct" or "indirect" is a relative concept, with indirect outcomes being further away than direct outcomes from the development / production process of human capital. From direct to indirect outcomes, more and more environmental factors other than human capital itself will play a part giving rise to certain outcomes (see Liu and Fraumeni, 2016).

6 The Programme for International Student Assessment (PISA) is an OECD test of subject matter competencies. The core tests are in reading, mathematics and science for 15–16-year-old students. PISA has been administered every three years, beginning in 2000, through to 2015 (see www.oecd.org / pisa /).

7 The 57 countries include Albania, Argentina, Australia, Austria, Brazil, Bulgaria, Canada, Chile, Colombia, Costa Rica, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong-China, Hungary, Iceland, Indonesia, Ireland, Israel, Italy, Japan, Jordan, Kazakhstan, Korea, Latvia, Lithuania, Luxembourg, Macao-China, Malaysia, Mexico, Netherlands, New Zealand, Norway, Peru, Poland, Portugal, Qatar, Romania, Russian Federation, Serbia, Singapore, Slovak, Slovenia Republic, Spain, Sweden, Switzerland, Thailand, Tunisia, Turkey, United Kingdom, United States and Uganda.

8 To make it more comparable, the aggregate test scores are an arithmetic average of those for 2006 and 2009, because the average years of schooling refer to those aged 15–19 in 2010.

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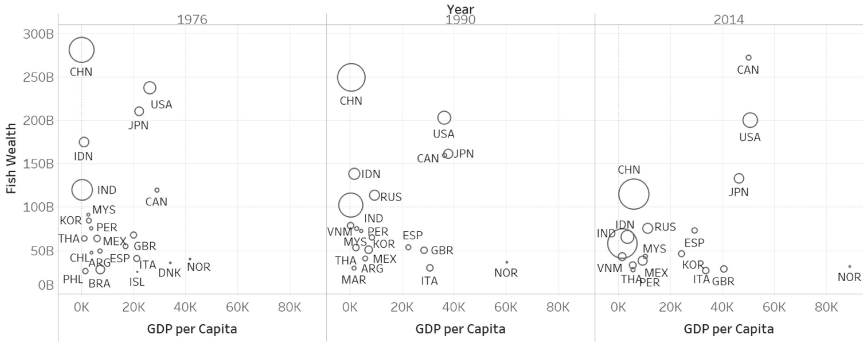

Figure 9.9 Comparison of fish stock capital for selected countries

over time as a result of continuously increasing fishing efforts, which are driven by economic development and population growth. Only a few countries, such as Canada and Spain, can maintain or increase their level of stock. From Figure 9.9, we can also see different patterns of fish stock depletion between developed and developing countries. Certain rich countries, regardless of their population, are found to have a declining rate of fish stock depletion. This finding may have resulted from the institution of better management systems and policies and the adoption of more advanced technologies. On the other hand, developing countries, which are characterized by increasing economies of scale, tend to have a steadily declining rate of fish stock depletion. In addition, we can see that the rate of stock depletion is also influenced by the size of the population. Countries that have a relatively large population, such as China, India and Indonesia, are very likely to have an increasing rate of stock depletion. However, Sugiawan et al. (2017) argue that this rapid depletion is inevitable but only occurs temporarily. The researchers argue that as the economy grows, there will be declining pressures on the marine ecosystem that will lead to stock recovery in the long-run.

From the discussion, we highlight certain important policy implications. First, the composition and technical effect of the economy, which are marked by, among others, the institution of better management systems and policies, investment in cleaner and more advanced technologies, and adoption of more stringent environmental regulations, are essential for decoupling economic growth from fish stock depletion. The immediate impact of these effects would be in reducing the volume of fish catches and discards. However, stock recovery is likely to be observed only in the long-term. These findings suggest the need to implement better fishing practices and fisheries management to achieve sustainability in the fisheries sector. Second, to maintain positive growth of total wealth, the inevitable stock depletion in the earlier stage of the economy should be compensated by a sufficient increase in other types of capital. Consequently, the constant pressure of population growth on fish stock should not only be considered a threat to sustainability but should be viewed as a potential asset, which needs to be managed to increase the productive base of an economy, that will compensate the declining level of natural capital.

TFP and social capital

TFP and sustainability implications

Arrow et al. (2004, 2012) suggested that total factor productivity (TFP) can contribute to social well-being not through three capital changes. Formally, TFP can be regarded as shadow value of time as a capital asset (UNU-IHDP and UNEP, 2012). IWR thus includes the change in TFP as an adjustment term, based on the finding that we need merely to add TFP growth to inclusive investment (Arrow et al., 2012).

A in the production function $A(t)F(\mathrm{K}(t))$, where $\mathrm{K}(t)$ is the vector of capital assets and $F(.)$ is the constant-returns-to-scale production function, can be interpreted to be an aggregate index of knowledge and the economy's institutions. In conventional growth accounting, $\mathrm{K}(t)$ include produced and human capital. In a remarkable move to include natural capital in growth accounting, however, Vouvaki and Xepapadeas (2009) observe that dismissing natural capital can mislead the analyst to interpret degradation of the environment as an improvement of knowledge and institutions. Brandt et al. (2013) argued that failing to account for natural capital tends to lead to a biased estimation of productivity growth. Natural capital has also remained largely hidden to policymakers due to the limitations of traditional economic indices (Fujii and Managi, 2013; Managi et al., 2004; Johnstone et al., 2017; Kurniawan and Managi, 2017).

In this report, therefore, we calculated TFP as a residual by expanding natural capital (forest, agriculture land, fish, fossil and minerals) as an explicit factor of input into the production process. By integrating natural capital, we can understand that the same productive base of a country can lead to an increase (decrease) in aggregate output over time regarding the effective utilization of its productive resources. In particular, the frontier approach in IWR 2018 measures TFP adjustment by capturing the efficient utilization of natural capital, as well as produced and human capital, by using the Malmquist Productivity Index approach. The result shows 55 of the 140 countries – more than one-third of our sample – have negative average TFP. Increasing investments in R&D tend to be focused on areas revolving around produced and human capital, but we need to shed a new light on ways to efficiently employ natural capital and the environment in modern economy. This brings us to the question of how environmental policy actually improves productivity.

Productivity and environmental policy

Porter and van der Linde (1995) postulated an apparent link between productivity and environmental policy. According to their hypothesis, well-designed environmental regulation can provide "a free lunch" and can trigger innovation, which in turn, can decrease and offset the costs of pollution abatement and enhance competitiveness. New evidence from the OECD countries shows that the more stringent environmental policies of recent years have had no negative effect on overall productivity growth (Ambec et al., 2013). The researchers found that before tighter environmental policies came into effect, the overall productivity growth of a country slowed, possibly because firms anticipated the changes and prepared themselves for new operating conditions. However, a rebound in productivity growth soon followed, with no

cumulative loss reflected in the data. Lanoie et al. (2008) also found a positive relationship between lagged regulatory stringency and productivity; innovations may take several years to develop, and capital expenditures are often delayed for a few years through normal budgetary cycles and building lags.

These results imply that more stringent environmental policies, when properly designed, can be introduced to benefit the environment with no loss of productivity. Well-designed market-based instruments, such as taxes on externalities or cap-and-trade schemes, score better in dynamic efficiency than environmental standards and effectively induce broadly defined innovation, providing firms more flexibility in the way they adapt to new environmental policy (De Serres et al., 2010). Global society is required to innovate environmental practices based on incentives for industries to perform well in their environmental management and formulate economic and environmental policies simultaneously to achieve the sustainability of the growth process.

Productivity on sectoral case

Innovations have minor importance in sustainable development issues with respect to exploiting resources for production, consumption and disposal by a better means. Thus, it has been pivotal to work toward a more advanced technological shift and shift in the progress up to this point, through the deployment of sustainable techniques and products (Hemmelskamp, 1999). Technology innovation and efficiency catch-up are driven by productivity growth. Consequently, environmentally friendly technologies, such as waste heat to electricity conversion, may lead to an improvement in productivity regarding which resources (energy) are used.

The widespread adoption of energy-saving technologies is necessary to have policy-induced impulses that help companies cope with the adoption barrier. Particularly, regarding energy efficiency, Jaffe and Stavins (1994) argued that several factors that cause energy-efficient technologies are not widely used without policy inducement. Contributing factors are a lack of information about available technologies, particularly when there are no incentives, principal/agent problems, low energy prices and high implicit discount rates. The most powerful driver to support energy efficiency is an economical aspect; if an energy efficiency project is profitable, everyone will participate in the projects. Investments in energy efficiency have many positive effects, not only an economic impact through maintaining energy security and increasing competitiveness but also environmental and health impacts by reducing GHG emissions. Arvanitis et al. (2016) proved that there is a direct positive effect of investment spending for energy-related technologies on labour productivity and indirect positive effects of energy taxes through investments in energy-related technology. Consequently, countries need to induce more investment in the energy efficiency sector.

In the agricultural sector, public policies, such as investments in research extension, education and infrastructure, and natural resource management have been the major sources of TFP growth. Chand et al. (2011) found that public investment in research has enhanced a significant source of TFP growth in most crops. The variables for natural agricultural resource management and produced capital have been important sources of TFP growth for most crops. Among natural resources, a dependable supply of irrigation revealed by the proportion of groundwater in total irrigation, in addition to the balanced use of fertilizers, has played a significant role

in increasing TFP. Investments in agricultural technologies, such as drought-resistant seed varieties, soil-improving technologies and solar energy sources, are options that may increase the productivity of the agricultural sector.

These results and previous discussions provide several noteworthy contributions to policymakers. First, these findings enhance our understanding of how particular countries can measure and manage their sustainability by incorporating natural capital into TFP. Second, countries need to develop well-designed environmental regulations to trigger innovation and utilize their productive assets in a more effective manner. Third, policymakers are encouraged to support the research and development of renewable resource technologies, although their impact on social well-being is yet to be captured (but see also Chapter 3). The contribution of investment in technology is crucial to confront the dwindling natural resources and to achieve the desired productivity growth in terms of social well-being.

Policy instruments: IWI-linked bonds

In its inaugural report, IWR 2012 has proposed that inclusive wealth, rather than GDP, interest rate, unemployment or other indicators, should be "mainstreamed" to be used in economic policymaking. We believe that conventional economic indices continue to play a key role in economic policymaking, as they represent how the economy, rather than social well-being, is performing overall. Conventional aspects of the economy have many ramifications. For instance, inflation and unemployment certainly affect our short-term well-being. It is well-known that job security is an important constituent of subjective well-being and a sense of dignity. Moreover, our index of inclusive wealth pertains more to the question of whether a productive base is on the increase in the long-run, rather than short-run fluctuations. Thus, we should be humble in what our index says about the sustainability of social well-being and the productive base in the long-run.

Having acknowledged this difference in focus, we also trust that inclusive wealth should be more highlighted in economic policymaking, if not mainstreamed. Political administrations naturally tend to increase their reputations and can thus be short-sighted. For example, it is expected that current administrations have an incentive to prefer policies that cater to the current generation and leave the policy burden to be dealt with by future generations. Therefore, inclusive wealth can be a headline index in economic, as well as social and ecological, policymaking, as a sort of commitment device for sustainable development.

There could be many alternative means to operationalize the idea of making inclusive wealth a headline index, as with the interest rates of stock prices. In a recent thought experiment, Yamaguchi and Managi (2017) proposed that national governments could issue bonds that are linked to the level or the growth rate of inclusive wealth. By linking bond coupons (fixed income) to inclusive wealth, holders of this financial asset would be "in the same boat" with the trend of inclusive wealth, an indicator of sustainable well-being.

However, the main intention of this proposal is much wider than garnering focus on inclusive wealth in the policy arena. In theory, this instrument would create macro-financial markets for a previously unnoted but important portion of wealth. Kamstra and Shiller (2009) refer to human capital, which accounts for a large proportion of wealth, particularly in high-income countries, but there is no reason not

to extend this discussion to natural capital. Therefore, the proposed financial vehicle can be seen as a plausible extension of the recent proposals of GDP-linked bonds (Borensztein and Mauro, 2004; Kamstra and Shiller, 2009; Barr et al., 2014).

By properly designing new bonds, governments could offer institutional and other investors opportunities to mobilize their financial resources into investments in the components of inclusive wealth: produced, human and natural capital. One way to accomplish this mobilization is to set aside the proceeds from the general budget and establish a bond revenue fund to be used for reinvestment in capital assets that comprise inclusive wealth.

In this case, the government, with the aid of the voice of citizens, is expected to craft investment strategies in capital assets. Suppose that, hopefully from the future editions of Inclusive Wealth Report, the shadow price of a forest in a given country is rising, due to aggressive deforestation and rising scarcities. Then, the national government would conduct a cost-benefit analysis, using the same shadow prices as well as cost estimates, to determine whether and how investment in the forest is justified (see, e.g., Collins et al., 2017). If the investment is indeed rationalized, then the government taps into the revenue from the proposed inclusive wealth-linked bonds for afforestation, reforestation or protection from illegal logging.

The bond of this kind can face some obstacles in practice. First, government budget deficits may increase, at least in the short-run, in a sluggish economy. GDP-linked bonds, it is argued, have an advantage of being countercyclical, by automatically suppressing interest payments when the output is not increasing. In the current proposal of IWI-linked bonds, interest payments are linked with a long-run productive base, which may conflict with the short-run trend in output. Second, unless we have a very transparent institution of measuring the shadow prices of the list of capital assets and democratically prioritizing public investments, the government may have an incentive to report (the growth rate in) inclusive wealth that is higher than the true value. This finding is particularly true of administrations facing the threat of being expelled from power. However, this mechanism may be attenuated to a certain extent due to the obligation of the government to pay IWI-linked interests.

To fix ideas, take India as an example. As Table 9.1 shows, produced, human and natural capital represented 8%, 61% and 31% of total capital of the nation in 1990, respectively. The relatively high position of natural capital in inclusive wealth is typical of developing countries, as discussed in Chapter 1. However, this position is reduced to as low as 15% in the latest figure. More fossil fuel (oil, natural gas and coal) experienced an across-the-board decline. Fisheries nearly halved, and pastureland also witnessed

Table 9.1 Inclusive wealth in India, 1990–2014

Year	*1990*		*2014*		*Annual change rate*	
	$billion	*Share*	*$billion*	*Share*		*Weighted*
Produced	867	7.5%	5,049	23.5%	7.62%	1.36%
Human	7,110	61.4%	13,215	61.5%	2.62%	1.61%
Natural	3,605	31.1%	3,242	15.1%	−0.44%	−0.09%
Total	11,582		21,505		2.61%	2.88%

a decline. In contrast, forest resources somewhat increased during the period. The last quarter century has also observed massive investment in infrastructure, contributing to the elevated share of produced capital in 2014 (24%). Interestingly, the relative share of human capital remained at 60%. Apparently, we could argue that the country has invested in produced capital, at the expense of certain natural capital resources.

Let us review the order of the magnitude of this financial instrument in this example. First, we study a possible bond whose interest payment is linked with the level of inclusive wealth of India. Suppose that the social discount rate is 5% per annum. Assuming, at a cost of rigour, that the NNP is the return on wealth (the latter being $21,505 billion in monetary units in 2014), we can simply estimate that the NNP in 2014 would be $1,075 billion (=$21,505 billion times 0.05). The interest payment would be a share of the corresponding NNP, which should be fixed before the issuance of the bond. Suppose that this constant share is 100 billionths of the current NNP. Then, the coupon payment would be $10.75 (=$1,075 billion / 100 billion).

Second, we could also consider a potential bond that is linked to the growth rate of wealth. Table 9.1 shows that inclusive wealth has increased at a rate of 2.6% annually since 1990.[2] This growth rate can be directly used as the coupon interest rate of this possible bond. As is often the case with an emerging economy, the ten-year government bond in India is higher than its peers in developed countries, with the latest figure being approximately 6.5% as of September 2017. This comparison shows that a premium would be needed to compensate investors for taking risks in the growth of inclusive wealth; in this case, the interest payment could be based on a benchmark rate, such as short-term government debt.

Finally, comparisons with other similar initiatives are in order. The proposal of GDP-linked bonds was innovative and provocative (Shiller, 1993), but their focus is on fiscal sustainability and the inclusion of capital assets, the income of which is revealed in the GDP boundary. This focus naturally needs to be extended to sustainable development and the inclusion of income from the non-GDP boundary (Yamaguchi and Managi, 2017).

Another relevant trend in the financial market is the increasing issuance of green bonds. As case studies demonstrate (Cochu, Annica, et al., 2016), green bonds are issued for specific projects that should be green in the fields of renewable energy, energy efficiency, low carbon transport, sustainable water, and waste and pollution, some of which overlap with natural capital investments. The IWI-linked bonds have an advantage of prioritizing projects on a macro scale, based on shadow prices for a wide variety of human and natural capital. This advantage would also enable the issuer to shift investments to more needy projects when relative scarcity changes in the long-run. Moreover, interest payments are linked with nationally aggregated IWI, such that the return to bond holders decreases when wealth does not increase sufficiently. This finding also demonstrates that the risk of the decreased well-being of the future generation is shared with investors in the current generation.

Notes

1 See Fors (2012) for a survey. Islam and Choe (2013) have investigated the role of microcredit in child labour and human capital formation. Shimamura and Lastarria-Cornhiel (2010) discuss the effect of credit programme participation.

2 If consumption does not grow, this rate should be equal to the growth in green NNP.

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Annex

Annex 1: key statistics

Table A1.1 Key statistics of Inclusive Wealth Report 2018

Code	*Country*	*Region*	*Income level*	*IW*			
				Growth rate	*Contribution by capital*		
					PC	*HC*	*NC*
AFG	Afghanistan	South-Central Asia	Low Income	4.4%	0.1%	4.3%	0.0%
ALB	Albania	Southern Europe	Lower Middle Income	0.7%	0.6%	0.1%	0.0%
ARE	United Arab Emirates	Western Asia	High Income	3.0%	0.5%	2.8%	−0.3%
ARG	Argentina	South America	Upper Middle Income	1.4%	0.6%	0.9%	−0.1%
ARM	Armenia	Western Asia	Lower Middle Income	0.1%	0.3%	−0.2%	0.1%
AUS	Australia	Australia / New Zealand	High Income	1.6%	1.3%	0.5%	−0.3%
AUT	Austria	Western Europe	High Income	1.7%	1.3%	0.4%	0.0%
BDI	Burundi	Eastern Africa	Low Income	2.9%	0.0%	2.8%	0.0%
BEL	Belgium	Western Europe	High Income	1.9%	1.4%	0.6%	0.0%
BEN	Benin	Western Africa	Low Income	3.3%	0.0%	3.3%	0.0%
BGD	Bangladesh	South−Central Asia	Low Income	1.8%	0.1%	1.7%	0.0%
BGR	Bulgaria	Eastern Europe	Upper Middle Income	−0.7%	0.1%	−0.7%	−0.1%
BHR	Bahrain	Western Asia	High Income	4.3%	2.5%	2.0%	−0.4%
BLZ	Belize	Central America	Lower Middle Income	0.5%	0.6%	0.3%	−0.4%
BOL	Bolivia (Plurinational State of)	South America	Lower Middle Income	0.2%	0.1%	0.5%	−0.4%
BRA	Brazil	South America	Upper Middle Income	0.7%	0.5%	0.5%	−0.3%
BRB	Barbados	Caribbean	High Income	1.0%	0.6%	0.5%	0.0%
BWA	Botswana	Southern Africa	Upper Middle Income	2.1%	0.2%	2.0%	−0.1%
CAF	Central African Republic	Middle Africa	Low Income	1.7%	0.0%	1.7%	0.0%
CAN	Canada	Northern America	High Income	0.8%	0.9%	0.4%	−0.6%
CHE	Switzerland	Western Europe	High Income	2.2%	1.8%	0.5%	0.0%
CHL	Chile	South America	Upper Middle Income	2.2%	1.6%	0.9%	−0.2%

(*Continued*)

Table A1.1 (Continued)

Code	*Country*	*Region*	*Income level*	*IW*			
				Growth rate	*Contribution by capital*		
					PC	*HC*	*NC*
CHN	China	Eastern Asia	Upper Middle Income	2.4%	1.4%	1.1%	−0.2%
CIV	Côte d'Ivoire	Western Africa	Lower Middle Income	2.3%	−0.1%	2.3%	0.0%
CMR	Cameroon	Middle Africa	Lower Middle Income	2.4%	0.0%	2.5%	−0.4%
COD	Democratic Republic of the Congo	Middle Africa	Low Income	−0.1%	0.0%	0.2%	−0.2%
COG	Congo	Middle Africa	Lower Middle Income	2.5%	0.1%	2.5%	−0.1%
COL	Colombia	South America	Upper Middle Income	0.2%	0.8%	0.8%	−2.1%
CRI	Costa Rica	Central America	Upper Middle Income	2.5%	1.5%	0.9%	0.3%
CUB	Cuba	Caribbean	Upper Middle Income	0.7%	0.0%	0.7%	0.0%
CYP	Cyprus	Western Asia	High Income	2.7%	1.4%	1.3%	0.0%
CZE	Czech Republic	Eastern Europe	High Income	1.3%	1.1%	0.3%	−0.1%
DEU	Germany	Western Europe	High Income	1.1%	0.9%	0.2%	0.0%
DNK	Denmark	Northern Europe	High Income	1.6%	1.4%	0.3%	−0.1%
DOM	Dominican Republic	Caribbean	Upper Middle Income	2.9%	1.5%	1.4%	0.0%
DZA	Algeria	Northern Africa	Upper Middle Income	1.5%	0.5%	1.6%	−0.7%
ECU	Ecuador	South America	Upper Middle Income	0.9%	0.6%	0.9%	−0.5%
EGY	Egypt	Northern Africa	Lower Middle Income	2.3%	0.2%	2.2%	−0.1%
ESP	Spain	Southern Europe	High Income	2.6%	1.9%	0.7%	0.0%
EST	Estonia	Northern Europe	High Income	1.0%	1.0%	−0.1%	0.0%
FIN	Finland	Northern Europe	High Income	1.4%	1.0%	0.5%	0.0%
FJI	Fiji	Melanesia	Lower Middle Income	1.3%	0.6%	0.7%	0.0%
FRA	France	Western Europe	High Income	1.9%	1.4%	0.5%	0.0%
GAB	Gabon	Middle Africa	Upper Middle Income	0.0%	0.0%	0.1%	−0.1%

Code	*Country*	*Region*	*Income level*	*IW*			
				Growth rate	*Contribution by capital*		
					PC	*HC*	*NC*
GBR	United Kingdom	Northern Europe	High Income	1.9%	1.6%	0.5%	−0.1%
GHA	Ghana	Western Africa	Lower Middle Income	2.3%	0.1%	2.1%	0.0%
GMB	Gambia	Western Africa	Low Income	2.7%	0.6%	2.5%	−0.4%
GRC	Greece	Southern Europe	High Income	1.2%	0.8%	0.5%	−0.1%
GTM	Guatemala	Central America	Lower Middle Income	2.1%	0.1%	2.0%	−0.1%
GUY	Guyana	South America	Lower Middle Income	0.6%	0.1%	0.0%	0.6%
HND	Honduras	Central America	Lower Middle Income	0.1%	0.9%	0.6%	−1.2%
HRV	Croatia	Southern Europe	High Income	1.0%	0.9%	0.1%	0.0%
HTI	Haiti	Caribbean	Low Income	1.9%	0.0%	1.8%	0.0%
HUN	Hungary	Eastern Europe	High Income	1.0%	0.7%	0.3%	0.0%
IDN	Indonesia	South-Eastern Asia	Lower Middle Income	1.4%	0.7%	1.2%	−0.4%
IND	India	South-Central Asia	Lower Middle Income	1.6%	0.0%	1.5%	0.0%
IRL	Ireland	Northern Europe	High Income	3.2%	2.5%	0.8%	−0.1%
IRN	Iran (Islamic Republic of)	South-Central Asia	Upper Middle Income	0.4%	0.3%	0.5%	−0.4%
IRQ	Iraq	Western Asia	Lower Middle Income	0.9%	0.1%	1.1%	−0.3%
ISL	Iceland	Northern Europe	High Income	0.7%	0.7%	0.3%	−0.2%
ISR	Israel	Western Asia	High Income	3.6%	2.0%	1.5%	0.0%
ITA	Italy	Southern Europe	High Income	1.5%	1.1%	0.4%	0.0%
JAM	Jamaica	Caribbean	Upper Middle Income	1.1%	0.7%	0.5%	−0.1%
JOR	Jordan	Western Asia	Upper Middle Income	4.4%	0.9%	3.4%	0.0%
JPN	Japan	Eastern Asia	High Income	1.3%	1.1%	0.3%	0.0%
KAZ	Kazakhstan	South-Central Asia	Upper Middle Income	0.5%	0.3%	0.3%	−0.1%
KEN	Kenya	Eastern Africa	Low Income	3.0%	0.1%	3.0%	0.0%
KGZ	Kyrgyzstan	South-Central Asia	Low Income	1.7%	0.1%	1.6%	0.0%

(*Continued*)

Table A1.1 (Continued)

Code	*Country*	*Region*	*Income level*	*IW*			
				Growth rate	*Contribution by capital*		
					PC	*HC*	*NC*
KHM	Cambodia	South-Eastern Asia	Low Income	0.3%	0.2%	1.0%	−0.8%
KOR	Republic of Korea	Eastern Asia	High Income	4.2%	3.8%	0.7%	0.0%
KWT	Kuwait	Western Asia	High Income	0.3%	0.3%	0.4%	−0.4%
LAO	Lao People's Democratic Republic	South-Eastern Asia	Lower Middle Income	1.3%	0.2%	1.1%	0.0%
LBR	Liberia	Western Africa	Low Income	2.9%	0.0%	2.9%	0.0%
LKA	Sri Lanka	South-Central Asia	Lower Middle Income	1.8%	0.6%	1.4%	−0.1%
LSO	Lesotho	Southern Africa	Lower Middle Income	0.3%	0.0%	0.2%	0.0%
LTU	Lithuania	Northern Europe	Upper Middle Income	0.5%	0.5%	0.0%	0.0%
LUX	Luxembourg	Western Europe	High Income	3.4%	2.4%	1.0%	0.0%
LVA	Latvia	Northern Europe	Upper Middle Income	0.7%	0.9%	−0.4%	0.1%
MAR	Morocco	Northern Africa	Lower Middle Income	1.6%	0.2%	1.4%	0.0%
MDA	Republic of Moldova	Eastern Europe	Lower Middle Income	−0.1%	−0.4%	0.4%	−0.3%
MDV	Maldives	South-Central Asia	Upper Middle Income	3.2%	1.5%	2.1%	−0.4%
MEX	Mexico	Central America	Upper Middle Income	2.3%	1.4%	1.2%	−0.1%
MLI	Mali	Western Africa	Low Income	2.9%	0.0%	2.9%	0.0%
MLT	Malta	Southern Europe	High Income	3.0%	2.1%	1.0%	0.0%
MMR	Myanmar	South-Eastern Asia	Low Income	1.3%	0.0%	1.3%	−0.1%
MNG	Mongolia	Eastern Asia	Lower Middle Income	0.5%	0.1%	0.7%	−0.2%
MOZ	Mozambique	Eastern Africa	Low Income	2.9%	0.0%	2.9%	0.0%
MRT	Mauritania	Western Africa	Low Income	2.6%	0.0%	2.5%	0.0%
MUS	Mauritius	Eastern Africa	Upper Middle Income	2.6%	1.8%	0.9%	−0.1%
MWI	Malawi	Eastern Africa	Low Income	2.8%	0.0%	2.7%	0.0%
MYS	Malaysia	South-Eastern Asia	Upper Middle Income	2.0%	2.0%	0.8%	−0.6%
NAM	Namibia	Southern Africa	Upper Middle Income	2.2%	0.4%	1.6%	0.2%

Code	*Country*	*Region*	*Income level*	*IW*			
				Growth rate	*Contribution by capital*		
					PC	*HC*	*NC*
NER	Niger	Western Africa	Low Income	3.6%	0.0%	3.6%	0.0%
NGA	Nigeria	Western Africa	Lower Middle Income	2.6%	0.0%	2.6%	0.0%
NIC	Nicaragua	Central America	Lower Middle Income	1.6%	0.2%	1.5%	−0.1%
NLD	Netherlands	Western Europe	High Income	1.7%	1.5%	0.4%	−0.1%
NOR	Norway	Northern Europe	High Income	0.8%	1.1%	0.4%	−0.7%
NPL	Nepal	South-Central Asia	Low Income	1.9%	0.0%	1.8%	−0.1%
NZL	New Zealand	Australia / New Zealand	High Income	0.8%	0.4%	0.2%	0.2%
PAK	Pakistan	South-Central Asia	Lower Middle Income	0.8%	0.3%	1.5%	−1.1%
PAN	Panama	Central America	Upper Middle Income	2.7%	1.6%	1.0%	0.0%
PER	Peru	South America	Upper Middle Income	0.8%	0.4%	0.4%	−0.1%
PHL	Philippines	South-Eastern Asia	Lower Middle Income	2.6%	0.4%	2.2%	0.0%
PNG	Papua New Guinea	Melanesia	Lower Middle Income	2.4%	0.0%	2.3%	0.0%
POL	Poland	Eastern Europe	High Income	1.2%	1.0%	0.3%	−0.1%
PRT	Portugal	Southern Europe	High Income	2.0%	1.6%	0.5%	0.0%
PRY	Paraguay	South America	Lower Middle Income	0.8%	0.4%	0.7%	−0.3%
QAT	Qatar	Western Asia	High Income	2.0%	1.8%	0.7%	−0.8%
ROU	Romania	Eastern Europe	Upper Middle Income	0.6%	0.6%	0.1%	−0.1%
RUS	Russian Federation	Eastern Europe	Upper Middle Income	0.2%	0.1%	0.0%	0.1%
RWA	Rwanda	Eastern Africa	Low Income	2.7%	0.0%	2.6%	0.0%
SAU	Saudi Arabia	Western Asia	High Income	0.8%	0.5%	0.6%	−0.2%
SDN	Sudan (former)	Northern Africa	Lower Middle Income	2.4%	0.0%	2.5%	−0.1%
SEN	Senegal	Western Africa	Lower Middle Income	2.7%	0.0%	2.6%	0.0%
SGP	Singapore	South-Eastern Asia	High Income	5.3%	4.0%	1.5%	0.0%
SLE	Sierra Leone	Western Africa	Low Income	1.5%	0.0%	1.5%	0.0%
SLV	El Salvador	Central America	Lower Middle Income	1.7%	0.6%	1.1%	0.0%

(*Continued*)

Table A1.1 (Continued)

Code	*Country*	*Region*	*Income level*	*IW*			
				Growth rate	*Contribution by capital*		
					PC	*HC*	*NC*
SRB	Serbia	Southern Europe	Upper Middle Income	0.2%	0.2%	0.0%	0.1%
SVK	Slovakia	Eastern Europe	High Income	1.2%	0.9%	0.3%	0.0%
SVN	Slovenia	Southern Europe	High Income	1.7%	1.4%	0.3%	0.0%
SWE	Sweden	Northern Europe	High Income	1.6%	1.2%	0.5%	−0.1%
SWZ	Swaziland	Southern Africa	Lower Middle Income	2.4%	0.7%	1.6%	0.1%
SYR	Syrian Arab Republic	Western Asia	Lower Middle Income	1.6%	0.4%	1.6%	−0.3%
TGO	Togo	Western Africa	Low Income	2.9%	0.0%	2.9%	0.0%
THA	Thailand	South-Eastern Asia	Upper Middle Income	2.1%	1.3%	1.1%	−0.1%
TJK	Tajikistan	South-Central Asia	Low Income	2.2%	−0.1%	2.2%	0.0%
TTO	Trinidad and Tobago	Caribbean	High Income	−0.7%	0.0%	0.4%	−1.3%
TUN	Tunisia	Northern Africa	Upper Middle Income	2.5%	0.9%	1.8%	−0.1%
TUR	Turkey	Western Asia	Upper Middle Income	2.6%	1.7%	1.1%	−0.1%
TZA	United Republic of Tanzania	Eastern Africa	Low Income	3.1%	0.0%	3.1%	0.0%
UGA	Uganda	Eastern Africa	Low Income	3.6%	0.0%	3.6%	0.0%
UKR	Ukraine	Eastern Europe	Lower Middle Income	−0.6%	0.0%	−0.6%	0.0%
URY	Uruguay	South America	Upper Middle Income	1.0%	0.5%	0.5%	0.0%
USA	United States of America	Northern America	High Income	2.0%	1.6%	0.5%	−0.1%
VEN	Venezuela (Bolivarian Republic of)	South America	Upper Middle Income	0.1%	0.2%	0.3%	−0.3%
VNM	Viet Nam	South-Eastern Asia	Lower Middle Income	2.0%	1.0%	1.3%	−0.1%
YEM	Yemen	Western Asia	Lower Middle Income	3.4%	0.1%	3.3%	0.0%
ZAF	South Africa	Southern Africa	Upper Middle Income	1.6%	0.3%	1.4%	−0.1%
ZMB	Zambia	Eastern Africa	Lower Middle Income	3.1%	0.0%	3.1%	0.0%
ZWE	Zimbabwe	Eastern Africa	Low Income	1.2%	0.0%	1.2%	0.0%

Annex 2: methodological annex[1]

1. *Overall framework*

In this Annex, we lay out the methodology and data used for the computation of inclusive wealth shown in Chapter 1. To recap our conceptual framework, we are interested in the change of intertemporal well-being at:

$$V(t) = \int_t^{\infty} U(C_\tau) e^{-\delta(\tau - t)} d\tau.$$

Assuming equivalence between wealth and well-being, this is measured by wealth in practice. Denoting produced, human and natural capital as K, H and N, the change in inclusive wealth W is expressed by:

$$\frac{dW(K, H, N, t)}{dt} = p_K \frac{dK}{dt} + p_H \frac{dH}{dt} + p_N \frac{dN}{dt} + \frac{\partial V}{\partial t},$$

where p_K, p_H and p_K are the marginal shadow prices of produced, human and natural capital, respectively. They are formally defined by

$$p_K \equiv \frac{\partial V}{\partial K}, p_H \equiv \frac{\partial V}{\partial H}, p_N \equiv \frac{\partial V}{\partial N},$$

given a forecast of how produced, human and natural capitals, as well as other flow variables, evolve in the future in the economy in question. Practically, shadow prices act as a weight factor attached to each capital, resulting in the measure of wealth, or IWI:

$$IWI = p_K K + p_H H + p_N N.$$

In practice, we can use W and IWI interchangeably, although they can differ in that IWI also uses shadow prices on the margin. In addition, the unit of IWI is dollar (monetary) terms, rather than utility units. Of course, this does not affect sustainability assessment.

Another point worth exploring is the effect of population. Aside from simple Malthusian effect (Arrow et al. 2004; Ferreira et al. 2008), wealth per capita may not represent well-being divided by current population (Arrow et al. 2003). Moreover, as expounded in Arrow et al. (2012), even if we employ well-being divided by future population, i.e. adopting dynamic average utilitarianism, inclusive wealth per capita is shown to be in line with social well-being, under simple assumptions. When these assumptions do not hold, sustainability assessment may change (Yamaguchi 2017).

2. *Produced capital*

Produced capital, also referred to as manufactured or reproducible capital, includes physical infrastructure, land, property and facilities of private firms, houses, etc. Upon calculation, we follow the method originated by Harberger (1978) and applied by

Table A2.1 Data sources and assumptions for the calculation of produced capital

Variables	*Data sources/assumptions*
Investment, I	United Nations Statistics Division (2013a)
Output, y	United Nations Statistics Division (2013a)
Depreciation rate, δ	4% (as taking the country average from Feenstra et al. (2013))
Capital lifetime	Indefinite

King and Levine (1994) and Feenstra et al. (2013). In particular, we employ perpetual inventory method (PIM), which is a simple summation of gross investment net of depreciation that occurs in each period. One cannot keep track of investment and depreciation indefinitely into the past, so should start from somewhere. This is called a benchmark year $t = 0$, in which the initial capital stock $K(0)$ is set. Formally, produced capital stock at t is:

$$K(t) = K(0)(1-\delta)^t + \sum_{\tau=1}^{t} I(\tau)(1-\delta)^{t-\tau},$$

where $I(t)$ and δ stand for investment at t and depreciation rate. In our computation, the initial capital stock $K(0)$ is estimated by assuming a steady state of capital-output ratio. That is, if we assume $0 = \frac{d}{dt}\left(\frac{K}{y}\right) = (I - \delta K) / K - \gamma$ where y is the economic growth rate, the steady state capital stock would be $K^{ss} = \frac{I}{\delta + \gamma}$.

Finally, it is worth noting that the shadow price of produced capital is unity, since national statisticians measure investment in produced capital in dollar terms, which is the unit of inclusive wealth. The dataset we employ is summarized in Table A2.1.

3. *Human capital*

As we mentioned in the main text of Chapter 1, we employ two approaches to human capital, and report them separately. However, both approaches have in common the education-induced human capital, so we start from that bit.

3.1. *Education*

Education pays off later in life as a raised lifetime income and well-being, both at personal and aggregate levels. In line with the literature on human capital, and for practical reasons, we focus on the return on formal education, but this does not mean that other non-formal education (e.g. early childhood education, vocational training) is not adequate as part of wealth. We estimate the value of human capital on the output of education production function. This is generally called income approach to human capital computation. In contrast, some other estimates use the input side of education production function, typically by educational expenditure (World Bank 2014). For a more detailed excellent review of human capital in general and a detailed account of this, see Chapters 3–4 of IWR 2014.

Table A2.2 Data sources and assumptions for the calculation of human capital

Variables	*Data sources/assumptions*
Educational attainment, *A*	Barro and Lee (2013)
Population *P* by age, gender, time	United Nations Population Division (2016)
Interest rate, ρ	8.5% (Klenow and Rodríguez-Clare 1997)
Discount rate, ρ	8.5%
Employment	International Labor Organization (2015); Conference Board (2016)
Compensation of employees	United Nations Statistics Division (2013a); OECD (2016); Feenstra et al. (2013); Lenzen et al. (2013); Conference Board (2016)

We estimate the value of human capital based on the idea that educational attainment yields returns to human capital. Following Arrow et al. (2012) and Klenow and Rodríguez-Clare (1997), educational attainment is proxied by the average years of total schooling per person, A, which is obtained from Barro and Lee (2013). The rate of return on education is assumed to be constant at p = 8.5%. This is multiplied by the population who has had education, P_{5+edu}. Thus, the stock of human capital is:

$$H = e^{\rho A} * P_{5+edu}$$

Regarding the shadow price of one unit of human capital, it is calculated by the present value of lifetime income, which is proxied by the average compensation to employees, w, per unit of human capital times the expected working years, T. This brings us to the following formula:

$$p_H(t) = \int_0^{T(t)} w(\tau) e^{-\delta\tau} d\tau$$

The dataset we employ is summarized in Table A2.2.

3.2. Health

The state of health affects human well-being through at least three channels: by directly contributing to well-being, raising productivity and extending life years (UNU-IHDP, 2014). We have computed the latter third value of health capital, largely because it is still challenging to account for the first and second contributions.

Health capital of an individual of age a is defined by

$$H(a) = \sum_{t=a}^{100} f(t \mid t \geq a) V(a,t),$$

where conditional density of age of death given survival to age a is

$$f\left(t \mid t \geq a\right) = \frac{f\left(t\right)}{\left[1 - F\left(a\right)\right]},$$

and

$$V\left(a,t\right) = \sum_{u=0}^{t-a} \left(1-\delta\right)^{u}$$

is the discount factor. Total health capital of a country is

$$H = \sum_{a=0}^{100} H\left(a\right) P\left(a\right),$$

where $P(a)$ is the population of age a.

The shadow price of health capital is simply the value of statistical life year (VSLY). For more detailed illustration, see Arrow et al. (2012, 2013) and UNU-IHDP and UNEP (2014).

3.3. Shadow price of human and health capital

In the frontier approach of calculation, we determine shadow prices of education- and health-induced human capital by employing a non-parametric method. In this subsection we outline this method. Previous measurement of that portion of longevity of health capital is based on the assumption that marginal willingness to pay to reduce the risk of death is common for all the age groups. Alternatively, we use non-parametric estimation of shadow prices with inputs being capital assets.

In particular, we assume a production possibility set, P, with input vector (produced, human, health and natural capital), x, output (GDP), y, and a directional vector $g = g_y$ with $g \in \Re^M$. Formally,

$$P\left(x\right) = \left\{\left(x,y\right) : x \text{ can produce } y\right\}$$
$$D\left(x,y;g\right) = \max_{\beta}\left\{\beta : y + \beta g_y \in P\left(x\right)\right\}$$

D is called the distance function, which maximizes the output, controlling the coefficient, β. By solving the revenue-maximizing problem and parametrizing DDF, the shadow price of human and health capital can be derived. For details, see Färe et al. (2005) and Tamaki et al. (2017).

4. Natural capital

For natural capital, the current edition of IWR accounts for non-renewable resources (fossil fuel and mineral) and renewable resources (agricultural land, forest and fishery). We illustrate how we account for the five classes in turn.

4.1. Fossil fuels

Our account scope for fossil fuels is coal, natural gas and oil. For a given resource, we start from the current stock, and then trace back past stocks by using each year production. In this way, we can construct a consistent time-series dataset that reflects more recent accurate flow (extraction) variables. In other words, the corresponding stock under study in year $t - 1$,$S(t - 1)$ is derived from the production, $P(t)$ and the stock in year t, $S(t)$ by

$$S(t-1) = S(t) + P(t).$$

The unit shadow price of a non-renewable resource, p_S, is the price net of extraction cost, which is sometimes called rental price. Ideally, the marginal cost of extraction should be used for corresponding remaining stock, but it is known to be hard to obtain. We instead assume that the rental rate of the total price is constant, which is obtained from Narayanan et al. (2012).

4.2. Metals and minerals

The methodology for accounting for minerals is much the same as fossil fuels, the other form of non-renewable resources. For rental rates, we retrieved sectoral rental rates of different mineral industries from Narayanan et al. (2012). For other data of reserves, extraction and prices are obtained from U.S. Geological Survey (2015), which is the most authorized dataset on the subject.

4.3. Agricultural land

Agricultural land is composed of cropland and pastureland. The methodology for accounting for these two classes is much the same. For the quantity of this natural capital, permanent cropland / pastureland area data from Food and Agricultural Organization (FAO 2015a) are simply employed.

Table A2.3 Data sources and assumptions for the calculation of fossil fuels

Variables	*Data sources/assumptions*
***S*: reserve**	U.S. Energy Information Administration (2015)
***P*: extraction**	U.S. Energy Information Administration (2015)
Prices	BP (2015) • Coal: averaged prices from US, northwestern Europe, Japan coking, and Japan steam • Natural gas: averaged prices from EU, UK, US, Japan and Canada • Oil: averaged prices of Dubai, Brent, Nigerian Forcados and West Texas Intermediate • adjusted for inflation before averaging over time using the US GDP deflator
Rental rates	Narayanan et al. (2012)

Table A2.4 Data sources and assumptions for the calculation of metal and mineral resources

Variables	*Data sources/assumptions*
***S*: reserve**	U.S. Geological Survey (2015)
***P*: Extraction**	U.S. Geological Survey (2015)
Prices	U.S. Geological Survey (2015)
Rental rates	Narayanan et al. (2012)

To quantify the marginal shadow price of a unit of agricultural land, we cannot use the market price as in the case of non-renewable resources, since there does not usually exist a market for agricultural land. Instead, we compute the shadow price as the net present value of the annual flow of services per hectare that the parcel yields, in line with World Bank (2011) and past editions of IWR. More specifically, rental price per hectare of cropland for country i in year t can be expressed as:

$$RPA_{it} = \left(\frac{1}{A}\right)\sum_{k=1}^{N} R_{ik}P_{itk}Q_{itk}$$

where A, R, P and Q are the harvested area in crops, rental rate, crop price and crop quantity produced, respectively. N stands for the number of crops, which is as many as 159 (k = 1,. . .,159) in the current study. t is the year of analysis, from 1990 to 2014. For the estimation of the rental rate by crop group, we mapped FAO crop classification (HS) with those sectoral rental rates provided by Narayanan et al. (2012).

Note that the above rental price corresponds to an annual flow of services; we need to capitalize it to be employed as the shadow price. Formally, the NPV of this rental price for country i in year t is written as:

$$p_{Ait} = \sum_{\tau=0}^{\infty} \frac{RPA_{it}}{(1+r)^{\tau}} = \frac{1+r}{r} RPA_{it},$$

where r is the discount rate, set at 5% per annum. Finally, to avoid unnecessary volatility in the social value of natural capital, we take the year average of this price for country i:

$$\overline{p_{Ai}} = \frac{1}{25}\sum_{t=1990}^{2014} p_{Ait}$$

which is used as the shadow price of cropland.

For the calculation of pastureland wealth, the difference from cropland lies in the fact that it is difficult to link rents to a particular amount of land involved in the production process. Thus, we opted to assume the shadow price of pastureland to be equal to cropland, which is a limitation of the current accounting.

4.4. Forest

In the current forest accounting, we follow IWR 2014 methodology. The forest wealth is composed of timber value and non-timber forest benefits (NTFB).

Table A2.5 Data sources and assumptions for the calculation of agricultural land

Variables	*Data sources/assumptions*
Quantity of crops produced, *Q*	FAO (2015a)
Price of crops produced, *P*	FAO (2015a)
Rental rate, *R*	Narayanan et al. (2012)
Harvested area in crops, *A*	FAO (2015a)
Discount rate, *r*	5%
Permanent cropland/pastureland area	FAO (2015a)

4.4.1. TIMBER

We estimate the volume of timber resources commercially available. For the quantity of this specific capital, the total forest area, excluding cultivated forest, is multiplied by timber density per area, and percentage of total volume that is commercially available. The exclusion of cultivated forest could be debatable, as it is regarded as contributing to timber and non-timber values. It is due to the fact that the activity of cultivating forest is categorized as a production activity in the System of National Accounts. In line with this reasoning, we have registered cultivated forest under produced capital in IWR 2014 and 2017.

For the computation of shadow prices, there are several steps involved, following IWR 2014. First, we followed the World Bank's (2006) method by adopting a weighted average price of two different commodities: industrial round wood and fuelwood, which are also country-specific parameters. The weight attached to the different prices is based on the quantity of the commodity manufactured, while industrial round wood and fuelwood prices are obtained from the value and quantity exported and produced, respectively. Second, we converted the annual estimated values from current to constant prices by using each country-specific gross domestic product (GDP) deflator. Third, we used information on the regional rental rates for timber estimated by Bolt et al. (2002). Such rates are assumed to be constant over time. Fourth, we then estimated the average price over the entire study period (1990 to 2014), thereby obtaining our proxy value for the shadow price of timber.

Finally, in the same manner as other resources, wealth corresponding to timber value is calculated as the product of quantity, price and average rental rate over time.

4.4.2. NON-TIMBER FOREST BENEFITS (NTFB)

Aside from provisioning services in the form of timber production, forest capital yields many ecosystem services. Following IWR 2014, we have accounted for this non-timber forest benefits in the following manner.

First, total forest area in the country under analysis excluding cultivated forest is retrieved from FAO (2015b), which we denote Q (ha). Second, fraction of the total forest area which is accessed by individuals to obtain benefits is assumed to be γ. The ecological literature has stressed that only the portion of the forest that contributes to well-being should be accounted for. For want of better assumptions, we assume γ to be 10%, following World Bank (2006).

Table A2.6 Data sources and assumptions for the calculation of forest

Variables	*Data sources/assumptions*
Forest stocks	FAO (2015b)
Forest stock commercially available	FAO (2006)
Wood production	FAO (2015b)
Value of wood production	FAO (2015b)
Rental rate, R	Bolt et al. (2002)

Table A2.7 Accounting of non-timber forest benefits

Select service	*Temperate and boreal forests (USD/yr/ha)*	*Tropical forest (USD/yr/ha)*
Provisioning services		
1 food	23	107
2 water	146	137
3 genetic	2	451
4 medical		475
5 raw materials		
6 ornamental		
Regulating services		
7 air quality	868	223
8 climate		
9 extreme events	0	33
10 water flows	2	14
11 waste	40	343
12 erosion	1	342
13 soil fertility	37	129
14 pollination	418	54
15 bio control	20	13
Habitat services		
16 nursery		17
17 genepool	506	396
Cultural services		
18 aesthetic		
19 recreation	27	257
20 inspiration	0	
21 spiritual		
22 cognitive	0	
Total	2,091	2,990

Source: Van der Ploeg and de Groot (2010).

Third, the unit benefit of non-timber forest to intertemporal social well-being is taken from Ecosystem Service Valuation Database (ESVD) database of van der Ploeg and de Groot (2010). We denote this by P (USD / ha / year). The average value per hectare should be different for temperate and boreal, and tropical forest,

as shown in Table A2.7. Accordingly, we weighted the corresponding values by the share of each forest type in the total forest of the country. Fourth, to make this benefit into capital asset value, we take its net present value, using the discount rate of r = 5%.

In short, the value of NTFB forest wealth is calculated as

$$\sum_{\tau=t}^{\infty} \frac{PQ_{\tau}\gamma}{(1+r)^{\tau-t}} = \frac{1+r}{r} PQ\,\gamma.$$

4.5. Fisheries

This edition is the first to estimate fish capital stock as part of renewable natural capital. Estimating the fish stock is a herculean task, compared to other classes of natural capital, for many reasons. They cannot be estimated based on the habitat area, unlike the case of forest or agricultural land, whose computation can be based on the area. Moreover, the sheer mobility of the resource not only makes the exercise harder, but also poses a fundamental question: to which area can a given fishery be attributed, given that a marine fishery habitat is usually not within national borders? In the current exercise, we simplify the matter by assuming that the fish stock belongs to a country where harvest arises and the resource is loaded. Of course, this is a crude treatment in many ways. In particular, just because a fishery biomass is loaded to country A does not necessarily mean that the fishery belongs to A. Having acknowledged this shortcoming, we have no alternative sound theory to allocate harvest to countries.

In renewable resource economics, or just bioeconomics in short, there is a long tradition of assuming resource dynamics. The stock is the population growth net of harvest:

$$\frac{dS_t}{dt} = G(S_t) - H_t,$$

where S_t denotes the renewable resource biomass stock; $G(S_t)$ is the growth function; H_t is the harvest. Population, whether it is renewable resource or human being, is often assumed to follow a logistic growth function:

$$G(S_t) = rS_t\left(1 - \frac{S_t}{k}\right),$$

where r and k are the parameters which represent intrinsic (relative) growth rate and carrying capacity of the resource stock, respectively. Harvest, in turn, depends on the resource abundance. A simple but empirically supported harvest production function is to assume it is proportional to the product of effort and stock, i.e.,

$$H_t = qE_tS_t,$$

where q is called catchability coefficient. E_t stands for effort put in the production process, which is often proxied by the number of vessels or fishermen working

hours. Combining these two equations, we arrive at a well-known Gordon-Schaeffer model:

$$\frac{dS_t}{dt} = rS_t\left(1 - \frac{S_t}{k}\right) - qE_tS_t$$

All this means that, to estimate the fishery stock, S_t, we can resort either to harvest function, (1), or total resource dynamics, (2). World's fish stocks are commonly assessed by examining the trend in catch or harvest data. Although this catch-based assessment method has attracted a lot of criticism (see for instance Daan et al. (2011)), either due to its technical and conceptual flaws, it is still being considered as the most reliable method for assessing fish stock (Froese et al. 2012; Kleisner et al. 2013). The main reason is simply because the only data available for most fisheries are the weight of fish caught each year (Pauly et al. 2013). If effort and harvest are known data, as well as catchability coefficient q, then s_t can be estimated solely from the Schaefer production function (Yamaguchi et al. 2016).

But effort data are sparse worldly, so we cannot employ this method for inclusive wealth accounting all over the globe. Alternatively, we use the resource dynamics; however, there is no reliable data on r and k for most fish stocks. Given this constraint, we followed Martell and Froese (2013) who developed an algorithm to randomly generate feasible (r, k) pairs from a uniform distribution function. The likelihood of the generated (r, k) pairs are further evaluated by using Bernoulli distribution to ensure that the estimated stock meets the following assumptions: it has never collapsed or exceeded the carrying capacity, and that the final stock lies within the assumed range of depletion.

In a case where the values of (r, k) are not obtainable, the stocks are simply estimated according to the following rules:

- If the year under study is after the year of maximum catch, then the biomass stock is estimated as twice the catch;
- Otherwise, the biomass stock is estimated as twice maximum catch, net of catch (2 × Maximum Catch − Catch).

Time-series data of catch (tonnage and value) of each country's economic exclusive zone (EEZ) for the period of 1950–2010 are obtained from Sea Around Us Project (SAUP 2016). We only evaluate the stock that has a catch record for at least 20 years and which has a total catch in a given area of at least 1,000 tonnes over the time span.

5. *Adjustments*

As we outlined in Chapter 1, we treated three adjustments that are not covered by familiar capital assets that however contribute to social well-being change: carbon damage, oil capital gain and total factor productivity. We basically follow IWR 2014 methodology for these adjustments.

5.1. Carbon damage

Following Arrow et al. (2012), we can think of carbon damage as a mostly exogenous change in social well-being, as this does not correspond to each country's emission. As in IWR 2014, the key methodological steps can be described as follows:

1 Obtain the total global carbon emissions for the period under analysis, 1990 to 2014;
2 Derive the total global damages as a function of the emissions; and
3 Allocate the global damages to the countries according to the potential effect of global warming in their economies.

Global carbon emissions: Two sources of carbon emissions were taken into account: (i) carbon emissions stemming from fuel consumption and cement, which were obtained from the Carbon Dioxide Information Analysis Centre (Boden et al. 2011); and (ii) emissions resulting from global deforestation. In this case, we used FAO (2013) data on the changes in annual global forest land. It is further estimated that the average carbon release per hectare is equal to 100 tonnes of carbon (Lampietti and Dixon 1995).

Global carbon damages: The damages per tonne of carbon released to the atmosphere are estimated at US$50 (see Tol 2009). By multiplying the total amount of global tonnes of carbon released to the atmosphere by the price per tonne, we obtain the total global carbon damages. Note that this parameter is constant over time.

Assigning carbon damages to countries: To calculate the distribution of the damages that each region suffers, we referred to the study of Nordhaus and Boyer (2000). This study presents the distribution of damages which different regions and the global economy as a whole will suffer as a percentage of the corresponding regional and global GDP. By using country and global GDP information, we were able to reestimate regional percentage damages in terms of the total global GDP – and not related to the country GDP – as initially presented in Nordhaus and Boyer (2000). Finally, we apportioned the global damages estimated in previous steps according to this latter percentage.

5.2. Oil capital gain and loss

If oil price goes up, oil-rich nations enjoy wealth increase. This is not a gain in quantity of natural capital, but so long as countries can tap into this windfall to improve social well-being, this should be accounted for in wealth accounting. An annual increase of 3% in the rental price of oil is assumed, which corresponds to the annual average oil price increase during 1990–2014 (BP 2015). Conversely, importing countries may have fewer investment opportunities due to higher oil prices, so oil capital losses are distributed to consuming countries.

5.3. Total factor productivity

Total factor productivity of a nation is a source of resource that can be accessed even though they are tangible. We take different methods in computing TFP: for frontier analysis, we used a non-parametric analysis called Malmquist productivity

index, which in turn is based on the concept of data envelopment analysis. For IWR 2014 methods, we directly use the TFP data calculated conventionally by Conference Board (2017), in line with Arrow et al. (2012) and IWR 2012 (UNU-IHDP, 2012).

For frontier analysis, let

- x_t: Inputs (produced, human and natural capital)
- y_t: Outputs (GDP)
- Distance function: $d\left(x_t, y_t\right) = \max\left\{\delta; (x_t, y_t \mid \delta) \in T\left(t\right)\right\}$
- Malmquist Productivity Index $M\left(Y_{it}, K_{it}, H_{it}, N_{it}, Y_{it+1}, K_{it+1}, H_{it+1}, N_{it+1}\right)$

$$= \left[\frac{d^t\left(Y_{it+1}, K_{it+1}, H_{it+1}, N_{it+1}\right)}{d^t\left(Y_{it}, K_{it}, H_{it}, N_{it}\right)} \times \frac{d^{t+1}\left(Y_{it+1}, K_{it+1}, H_{it+1}, N_{it+1}\right)}{d^{t+1}\left(Y_{it}, K_{it}, H_{it}, N_{it}\right)}\right]^{\frac{1}{2}}$$

where d is the geometric distance to the production frontier caused by production inefficiency, while the frontier denotes the best available technology from the given inputs and outputs. i refers to the country under analysis, running i from 1 up to 140 nations in our sample; Y is the corresponding value of gross domestic product; K, H and N stand for produced, human and natural capital inputs.

Note

1 Rintaro Yamaguchi and Moinul Islam have provided excellent research assistance in preparing this methodological appendix.

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Annex 3: data

Table A3.1 Wealth (Inclusive wealth in billions of constant 2005 US$)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	177	237	283	353	422	493
2	Albania	118	116	118	125	135	141
3	Algeria	1,426	1,509	1,596	1,692	1,853	2,032
4	Argentina	2,364	2,497	2,655	2,789	3,046	3,273
5	Armenia	129	120	117	119	129	134
6	Australia	6,270	6,592	7,048	7,666	8,480	9,207
7	Austria	1,613	1,792	1,955	2,124	2,272	2,394
8	Bahrain	49	57	65	81	121	134
9	Bangladesh	9,243	10,336	11,433	12,427	13,372	14,088
10	Barbados	21	22	23	24	26	27
11	Belgium	1,770	1,946	2,142	2,352	2,609	2,803
12	Belize	17	17	18	18	19	19
13	Benin	2,085	2,496	2,918	3,418	4,013	4,504
14	Bolivia (Plurinational State of)	882	888	900	908	918	931
15	Botswana	528	581	612	684	799	877
16	Brazil	11,367	11,624	11,943	12,261	12,731	13,407
17	Bulgaria	2,425	2,273	2,172	2,108	2,097	2,056
18	Burundi	2,747	2,915	3,377	3,959	4,715	5,436
19	Cambodia	341	346	348	348	357	368
20	Cameroon	2,240	2,516	2,814	3,195	3,679	3,951
21	Canada	9,663	10,046	10,545	11,179	11,937	11,659
22	Central African Republic	681	746	806	861	951	1,024
23	Chile	779	847	937	1,036	1,170	1,315
24	China	34,176	37,795	41,374	45,731	52,592	60,253
25	Colombia	1,797	1,909	2,005	2,085	2,246	1,878
26	Congo	1,014	1,118	1,223	1,391	1,681	1,845
27	Costa Rica	112	120	132	147	168	203
28	Côte d'Ivoire	2,263	2,623	2,936	3,234	3,618	3,912
29	Croatia	370	373	385	421	463	470
30	Cuba	439	461	475	489	507	522
31	Cyprus	77	92	105	120	140	146
32	Czech Republic	1,068	1,131	1,197	1,269	1,399	1,468
33	Democratic Republic of the Congo	1,389	1,378	1,365	1,357	1,356	1,361
34	Denmark	1,168	1,244	1,367	1,492	1,629	1,707
35	Dominican Republic	223	253	299	342	398	439
36	Ecuador	538	552	564	581	610	665
37	Egypt	3,737	4,179	4,545	5,090	5,792	6,512
38	El Salvador	150	167	183	199	214	225

(*Continued*)

Table A3.1 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
39	Estonia	132	123	122	144	158	166
40	Fiji	25	27	28	29	31	34
41	Finland	1,207	1,269	1,363	1,466	1,635	1,690
42	France	9,425	10,349	11,354	12,592	13,859	14,733
43	Gabon	1,176	1,173	1,171	1,170	1,171	1,179
44	Gambia	12	13	15	17	20	23
45	Germany	17,894	19,362	20,605	21,486	22,377	23,091
46	Ghana	1,349	1,495	1,633	1,832	2,080	2,321
47	Greece	1,395	1,482	1,591	1,749	1,910	1,873
48	Guatemala	1,358	1,518	1,688	1,864	2,072	2,248
49	Guyana	208	209	209	209	210	242
50	Haiti	3,038	3,405	3,808	4,201	3,678	4,724
51	Honduras	139	137	134	136	140	142
52	Hungary	910	952	998	1,063	1,122	1,155
53	Iceland	163	165	171	180	192	193
54	India	320,231	341,430	375,521	407,938	440,219	465,400
55	Indonesia	5,429	5,769	6,137	6,542	7,035	7,497
56	Iran (Islamic Republic of)	6,169	6,242	6,353	6,533	6,792	6,867
57	Iraq	1,908	1,964	2,029	2,111	2,227	2,362
58	Ireland	595	640	766	975	1,186	1,268
59	Israel	477	600	730	826	971	1,105
60	Italy	8,332	9,010	9,758	10,727	11,582	11,917
61	Jamaica	109	119	127	134	139	142
62	Japan	26,237	29,594	32,324	34,102	35,458	36,085
63	Jordan	97	130	151	177	227	269
64	Kazakhstan	1,761	1,866	1,811	1,815	1,912	1,995
65	Kenya	2,606	2,996	3,351	3,917	4,736	5,345
66	Kuwait	2,400	2,224	2,282	2,343	2,469	2,572
67	Kyrgyzstan	149	160	175	189	208	226
68	Lao People's Democratic Republic	262	278	293	306	325	357
69	Latvia	168	164	167	177	193	197
70	Lesotho	1,011	1,057	1,043	994	1,058	1,078
71	Liberia	1,833	1,691	2,362	2,658	3,366	3,662
72	Lithuania	271	278	284	291	303	308
73	Luxembourg	100	116	137	163	194	222
74	Malawi	3,551	3,653	4,076	4,728	5,882	6,924
75	Malaysia	931	1,039	1,148	1,223	1,328	1,481
76	Maldives	9	11	12	14	17	19
77	Mali	3,695	4,174	4,787	5,611	6,580	7,417
78	Malta	21	25	30	35	40	43
79	Mauritania	1,055	1,223	1,371	1,559	1,766	1,945

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
80	Mauritius	33	37	43	49	55	60
81	Mexico	4,361	4,876	5,483	6,099	6,893	7,581
82	Mongolia	345	348	365	360	369	393
83	Morocco	3,146	3,444	3,727	4,011	4,330	4,596
84	Mozambique	10,425	12,809	14,617	16,216	18,475	20,599
85	Myanmar	3,120	3,371	3,623	3,843	4,049	4,226
86	Namibia	141	157	175	190	217	240
87	Nepal	2,873	3,298	3,646	3,941	4,194	4,467
88	Netherlands	2,914	3,179	3,542	3,889	4,230	4,413
89	New Zealand	2,038	2,076	2,131	2,146	2,599	2,495
90	Nicaragua	209	234	253	270	288	307
91	Niger	4,024	4,719	5,603	6,733	8,174	9,482
92	Nigeria	26,856	30,327	34,102	38,984	44,866	49,966
93	Norway	1,868	1,886	1,934	1,981	2,124	2,263
94	Pakistan	2,637	2,705	2,784	2,873	3,027	3,172
95	Panama	97	104	116	125	146	183
96	Papua New Guinea	4,247	4,823	5,473	6,165	6,835	7,452
97	Paraguay	170	176	188	192	201	205
98	Peru	1,696	1,716	1,756	1,780	1,849	2,031
99	Philippines	1,665	1,932	2,221	2,525	2,830	3,092
100	Poland	2,471	2,552	2,718	2,857	3,097	3,306
101	Portugal	804	900	1,052	1,195	1,301	1,309
102	Qatar	500	496	498	525	671	812
103	Republic of Korea	2,595	3,444	4,358	5,280	6,249	6,938
104	Republic of Moldova	129	134	132	132	133	125
105	Romania	1,415	1,420	1,451	1,468	1,562	1,618
106	Russian Federation	26,878	29,296	28,635	28,060	28,226	28,491
107	Rwanda	799	635	968	1,134	1,355	1,528
108	Saudi Arabia	6,746	7,333	7,307	7,402	7,677	8,141
109	Senegal	1,986	2,254	2,538	2,899	3,341	3,722
110	Serbia	880	882	878	889	922	920
111	Sierra Leone	4,189	3,856	3,788	4,821	5,517	5,961
112	Singapore	258	349	481	574	746	898
113	Slovakia	408	428	459	483	521	548
114	Slovenia	200	209	230	257	289	297
115	South Africa	4,121	4,449	4,788	5,074	5,609	6,058
116	Spain	4,460	5,045	5,729	6,846	7,958	8,272
117	Sri Lanka	406	447	489	511	536	626
118	Sudan (former)	6,699	8,211	9,335	10,679	11,151	11,880
119	Swaziland	27	33	38	41	44	47
120	Sweden	1,970	2,105	2,260	2,466	2,726	2,893

(*Continued*)

Table A3.1 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
121	Switzerland	2,068	2,542	2,850	3,009	3,295	3,502
122	Syrian Arab Republic	460	518	581	648	749	665
123	Tajikistan	160	182	197	218	244	268
124	Thailand	1,801	2,116	2,350	2,555	2,759	2,963
125	Togo	289	323	377	431	502	572
126	Trinidad and Tobago	173	169	167	166	158	145
127	Tunisia	251	287	323	361	415	458
128	Turkey	2,101	2,381	2,720	3,034	3,453	3,928
129	Uganda	8,879	10,463	12,130	14,883	17,941	20,789
130	Ukraine	18,805	18,568	17,495	16,637	16,481	16,308
131	United Arab Emirates	2,599	2,925	3,330	3,868	4,736	5,224
132	United Kingdom	8,276	8,973	9,996	11,079	12,166	12,962
133	United Republic of Tanzania	8,561	9,934	11,219	13,092	15,526	17,857
134	United States of America	54,549	59,962	67,699	76,021	83,540	88,166
135	Uruguay	262	277	294	300	315	333
136	Venezuela (Bolivarian Republic of)	5,599	5,602	5,584	5,567	5,654	5,749
137	Viet Nam	1,000	1,102	1,212	1,328	1,488	1,626
138	Yemen	1,864	2,288	2,678	3,118	3,663	4,120
139	Zambia	6,020	6,770	7,673	8,960	10,895	12,415
140	Zimbabwe	10,731	11,113	10,964	10,660	11,562	14,264

Table A3.2 IW per capita (Inclusive wealth per capita in thousands of constant 2005 US$)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	15	14	14	14	15	16
2	Albania	36	36	38	42	46	49
3	Algeria	55	52	51	51	51	52
4	Argentina	72	71	72	71	74	76
5	Armenia	36	37	38	39	43	44
6	Australia	367	365	368	376	385	392
7	Austria	210	226	244	258	272	280
8	Bahrain	99	101	97	93	96	98
9	Bangladesh	87	87	87	87	88	89
10	Barbados	81	82	84	89	92	94
11	Belgium	178	192	209	224	239	250

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
12	Belize	90	83	72	64	58	54
13	Benin	417	417	420	418	422	425
14	Bolivia (Plurinational State of)	129	117	108	100	93	88
15	Botswana	383	369	352	367	390	395
16	Brazil	76	71	68	65	64	65
17	Bulgaria	278	270	266	272	284	285
18	Burundi	489	467	499	499	498	503
19	Cambodia	38	32	29	26	25	24
20	Cameroon	186	181	177	176	179	173
21	Canada	348	342	343	346	351	328
22	Central African Republic	232	224	216	212	214	213
23	Chile	59	60	62	64	69	74
24	China	30	31	33	35	39	44
25	Colombia	52	51	50	48	49	39
26	Congo	425	411	393	397	413	409
27	Costa Rica	36	34	34	35	37	43
28	Côte d'Ivoire	186	182	178	178	180	177
29	Croatia	77	80	87	95	105	111
30	Cuba	41	42	43	43	45	46
31	Cyprus	100	108	111	116	126	127
32	Czech Republic	103	110	117	124	134	140
33	Democratic Republic of the Congo	40	33	28	24	21	18
34	Denmark	227	238	256	275	294	302
35	Dominican Republic	31	32	35	37	40	42
36	Ecuador	53	48	45	42	41	42
37	Egypt	66	67	67	68	71	73
38	El Salvador	29	30	32	33	35	37
39	Estonia	84	85	87	106	118	126
40	Fiji	34	35	35	35	36	38
41	Finland	242	248	263	280	305	309
42	France	161	174	186	199	213	222
43	Gabon	1,235	1,079	951	849	760	699
44	Gambia	13	12	12	12	12	12
45	Germany	225	237	251	261	274	285
46	Ghana	92	89	87	86	86	87
47	Greece	137	140	147	159	172	172
48	Guatemala	148	147	144	141	141	140
49	Guyana	289	288	282	282	279	317
50	Haiti	428	435	445	453	368	447
51	Honduras	28	24	21	20	19	18
52	Hungary	88	92	98	105	112	117
53	Iceland	638	616	608	608	603	591
54	India	368	355	357	357	358	359
55	Indonesia	30	29	29	29	29	29
56	Iran (Islamic Republic of)	110	103	96	93	91	88

(*Continued*)

Table A3.2 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
57	Iraq	109	97	86	78	72	67
58	Ireland	169	177	201	234	260	275
59	Israel	102	108	116	119	127	135
60	Italy	147	159	171	185	195	196
61	Jamaica	46	48	49	51	52	52
62	Japan	212	236	255	267	277	284
63	Jordan	29	30	32	33	35	36
64	Kazakhstan	108	118	122	120	117	115
65	Kenya	111	109	108	111	117	119
66	Kuwait	1,166	1,358	1,183	1,035	807	685
67	Kyrgyzstan	34	35	36	37	38	39
68	Lao People's Democratic Republic	62	57	55	53	52	53
69	Latvia	63	66	71	79	92	99
70	Lesotho	633	602	562	516	526	511
71	Liberia	872	813	817	813	850	833
72	Lithuania	73	77	81	88	98	105
73	Luxembourg	261	284	315	351	382	398
74	Malawi	377	372	364	371	398	415
75	Malaysia	51	50	49	47	47	50
76	Maldives	42	41	43	45	46	48
77	Mali	436	433	433	436	434	434
78	Malta	60	68	77	85	96	101
79	Mauritania	521	524	506	494	492	490
80	Mauritius	31	33	36	40	44	47
81	Mexico	51	52	53	56	58	60
82	Mongolia	158	152	152	143	136	135
83	Morocco	126	127	129	132	135	135
84	Mozambique	780	805	800	768	760	757
85	Myanmar	74	75	76	77	78	79
86	Namibia	100	95	92	94	99	100
87	Nepal	153	154	154	155	156	159
88	Netherlands	195	206	222	238	255	262
89	New Zealand	612	565	553	519	597	553
90	Nicaragua	50	51	50	50	50	51
91	Niger	509	504	499	499	502	496
92	Nigeria	281	280	277	279	281	281
93	Norway	440	433	431	428	434	440
94	Pakistan	25	22	20	19	18	17
95	Panama	39	38	38	38	40	47
96	Papua New Guinea	1,021	1,023	1,018	1,013	998	998
97	Paraguay	40	37	35	33	32	31
98	Peru	78	71	68	64	63	66
99	Philippines	27	28	28	29	30	31

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
100	Poland	65	66	71	75	81	87
101	Portugal	81	90	102	114	123	126
102	Qatar	1,050	991	840	627	380	374
103	Republic of Korea	61	76	93	110	126	138
104	Republic of Moldova	35	36	36	37	37	35
105	Romania	61	63	65	69	77	81
106	Russian Federation	181	197	195	196	198	198
107	Rwanda	110	107	121	126	132	135
108	Saudi Arabia	412	389	342	299	273	264
109	Senegal	264	259	257	257	258	254
110	Serbia	116	116	117	119	126	129
111	Sierra Leone	1,066	1,005	933	951	955	944
112	Singapore	85	99	119	135	147	164
113	Slovakia	77	80	85	90	97	101
114	Slovenia	100	105	116	128	141	144
115	South Africa	117	114	109	107	110	112
116	Spain	115	128	142	157	171	178
117	Sri Lanka	24	25	26	26	27	30
118	Sudan (former)	335	333	332	334	309	302
119	Swaziland	31	35	36	37	37	37
120	Sweden	230	238	255	273	291	298
121	Switzerland	308	361	397	405	421	428
122	Syrian Arab Republic	37	36	36	36	36	35
123	Tajikistan	30	31	32	32	32	32
124	Thailand	32	36	37	39	41	44
125	Togo	76	75	77	77	79	80
126	Trinidad and Tobago	142	135	132	128	119	107
127	Tunisia	31	32	34	36	39	42
128	Turkey	39	41	43	45	48	51
129	Uganda	511	513	511	531	541	550
130	Ukraine	362	360	356	353	359	360
131	United Arab Emirates	1,435	1,245	1,092	863	569	575
132	United Kingdom	145	155	170	183	194	201
133	United Republic of Tanzania	336	332	330	335	340	345
134	United States of America	219	225	240	257	270	276
135	Uruguay	84	86	88	90	93	97
136	Venezuela (Bolivarian Republic of)	282	252	228	208	195	187
137	Viet Nam	15	15	16	16	17	18
138	Yemen	156	150	150	152	155	157
139	Zambia	739	732	725	744	783	790
140	Zimbabwe	1,023	951	877	821	827	936

Table A3.3 IW Growth (unadjusted) (Inclusive wealth change (%) with respect to base year 1990)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	6.0%	12.5%	18.8%	24.3%	40.7%
2	Albania	−0.4%	−0.2%	1.4%	3.3%	6.1%
3	Algeria	1.1%	2.9%	4.4%	6.8%	12.5%
4	Argentina	1.1%	3.0%	4.2%	6.5%	11.5%
5	Armenia	−1.4%	−2.4%	−2.1%	−0.1%	1.1%
6	Australia	1.0%	3.0%	5.2%	7.8%	13.7%
7	Austria	2.1%	4.9%	7.1%	8.9%	14.1%
8	Bahrain	3.0%	7.0%	13.1%	25.1%	39.7%
9	Bangladesh	2.3%	5.5%	7.7%	9.7%	15.1%
10	Barbados	0.6%	2.0%	3.9%	5.1%	8.3%
11	Belgium	1.9%	4.9%	7.4%	10.2%	16.6%
12	Belize	0.4%	1.1%	1.8%	2.4%	3.8%
13	Benin	3.7%	8.8%	13.2%	17.8%	29.3%
14	Bolivia (Plurinational State of)	0.1%	0.5%	0.7%	1.0%	1.8%
15	Botswana	1.9%	3.8%	6.7%	10.9%	18.4%
16	Brazil	0.4%	1.2%	1.9%	2.9%	5.7%
17	Bulgaria	−1.3%	−2.7%	−3.4%	−3.6%	−5.4%
18	Burundi	1.2%	5.3%	9.6%	14.5%	25.5%
19	Cambodia	0.3%	0.5%	0.5%	1.2%	2.6%
20	Cameroon	2.4%	5.9%	9.3%	13.2%	20.8%
21	Canada	0.8%	2.2%	3.7%	5.4%	6.5%
22	Central African Republic	1.8%	4.3%	6.0%	8.7%	14.5%
23	Chile	1.7%	4.7%	7.4%	10.7%	19.1%
24	China	2.0%	4.9%	7.6%	11.4%	20.8%
25	Colombia	1.2%	2.8%	3.8%	5.7%	1.5%
26	Congo	2.0%	4.8%	8.2%	13.5%	22.1%
27	Costa Rica	1.5%	4.2%	7.1%	10.8%	21.9%
28	Côte d'Ivoire	3.0%	6.7%	9.3%	12.4%	20.0%
29	Croatia	0.2%	1.0%	3.3%	5.7%	8.3%
30	Cuba	1.0%	2.0%	2.8%	3.7%	6.0%
31	Cyprus	3.7%	8.0%	11.8%	16.1%	23.8%
32	Czech Republic	1.1%	2.9%	4.4%	7.0%	11.2%
33	Democratic Republic of the Congo	−0.2%	−0.4%	−0.6%	−0.6%	−0.7%
34	Denmark	1.3%	4.0%	6.3%	8.7%	13.5%
35	Dominican Republic	2.6%	7.6%	11.3%	15.6%	25.3%
36	Ecuador	0.5%	1.2%	1.9%	3.2%	7.3%
37	Egypt	2.3%	5.0%	8.0%	11.6%	20.3%
38	El Salvador	2.1%	5.1%	7.3%	9.2%	14.4%
39	Estonia	−1.5%	−2.1%	2.1%	4.5%	7.9%
40	Fiji	2.0%	3.4%	4.1%	5.9%	10.9%
41	Finland	1.0%	3.1%	5.0%	7.9%	11.9%
42	France	1.9%	4.8%	7.5%	10.1%	16.1%
43	Gabon	−0.1%	−0.1%	−0.1%	−0.1%	0.1%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
44	Gambia	1.1%	4.7%	9.1%	13.8%	23.8%
45	Germany	1.6%	3.6%	4.7%	5.7%	8.9%
46	Ghana	2.1%	4.9%	8.0%	11.4%	19.8%
47	Greece	1.2%	3.3%	5.8%	8.2%	10.3%
48	Guatemala	2.3%	5.6%	8.2%	11.1%	18.3%
49	Guyana	0.1%	0.1%	0.1%	0.2%	5.2%
50	Haiti	2.3%	5.8%	8.4%	4.9%	15.9%
51	Honduras	−0.4%	−1.0%	−0.6%	0.2%	0.7%
52	Hungary	0.9%	2.3%	3.9%	5.4%	8.2%
53	Iceland	0.3%	1.3%	2.6%	4.2%	5.9%
54	India	1.3%	4.1%	6.2%	8.3%	13.3%
55	Indonesia	1.2%	3.1%	4.8%	6.7%	11.4%
56	Iran (Islamic Republic of)	0.2%	0.7%	1.4%	2.4%	3.6%
57	Iraq	0.6%	1.6%	2.6%	3.9%	7.4%
58	Ireland	1.5%	6.5%	13.1%	18.8%	28.7%
59	Israel	4.7%	11.2%	14.7%	19.4%	32.3%
60	Italy	1.6%	4.0%	6.5%	8.6%	12.7%
61	Jamaica	1.8%	3.8%	5.3%	6.2%	9.1%
62	Japan	2.4%	5.4%	6.8%	7.8%	11.2%
63	Jordan	6.1%	11.8%	16.4%	23.8%	40.7%
64	Kazakhstan	1.2%	0.7%	0.8%	2.1%	4.2%
65	Kenya	2.8%	6.5%	10.7%	16.1%	27.1%
66	Kuwait	−1.5%	−1.2%	−0.6%	0.7%	2.3%
67	Kyrgyzstan	1.4%	4.1%	6.1%	8.6%	14.8%
68	Lao People's Democratic Republic	1.2%	2.8%	3.9%	5.5%	10.8%
69	Latvia	−0.4%	−0.1%	1.4%	3.5%	5.4%
70	Lesotho	0.9%	0.8%	−0.4%	1.1%	2.2%
71	Liberia	−1.6%	6.5%	9.7%	16.4%	26.0%
72	Lithuania	0.5%	1.2%	1.8%	2.9%	4.4%
73	Luxembourg	3.1%	8.4%	13.2%	18.1%	30.5%
74	Malawi	0.6%	3.5%	7.4%	13.4%	24.9%
75	Malaysia	2.2%	5.4%	7.1%	9.3%	16.7%
76	Maldives	2.9%	8.0%	11.9%	17.0%	28.6%
77	Mali	2.5%	6.7%	11.0%	15.5%	26.1%
78	Malta	3.2%	8.4%	12.7%	16.6%	26.4%
79	Mauritania	3.0%	6.8%	10.3%	13.7%	22.6%
80	Mauritius	2.8%	7.3%	10.6%	14.1%	22.4%
81	Mexico	2.3%	5.9%	8.7%	12.1%	20.2%
82	Mongolia	0.2%	1.4%	1.1%	1.7%	4.4%
83	Morocco	1.8%	4.3%	6.3%	8.3%	13.5%
84	Mozambique	4.2%	8.8%	11.7%	15.4%	25.5%
85	Myanmar	1.6%	3.8%	5.4%	6.7%	10.7%
86	Namibia	2.1%	5.5%	7.7%	11.4%	19.4%
87	Nepal	2.8%	6.1%	8.2%	9.9%	15.8%

(*Continued*)

Table A3.3 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
88	Netherlands	1.8%	5.0%	7.5%	9.8%	14.8%
89	New Zealand	0.4%	1.1%	1.3%	6.3%	7.0%
90	Nicaragua	2.3%	4.9%	6.7%	8.4%	13.7%
91	Niger	3.2%	8.6%	13.7%	19.4%	33.1%
92	Nigeria	2.5%	6.2%	9.8%	13.7%	23.0%
93	Norway	0.2%	0.9%	1.5%	3.3%	6.6%
94	Pakistan	0.5%	1.4%	2.2%	3.5%	6.4%
95	Panama	1.5%	4.5%	6.6%	10.8%	23.7%
96	Papua New Guinea	2.6%	6.5%	9.8%	12.6%	20.6%
97	Paraguay	0.7%	2.5%	3.1%	4.3%	6.4%
98	Peru	0.2%	0.9%	1.2%	2.2%	6.2%
99	Philippines	3.0%	7.5%	11.0%	14.2%	22.9%
100	Poland	0.6%	2.4%	3.7%	5.8%	10.2%
101	Portugal	2.3%	6.9%	10.4%	12.8%	17.6%
102	Qatar	−0.2%	−0.1%	1.2%	7.6%	17.5%
103	Republic of Korea	5.8%	13.8%	19.4%	24.6%	38.8%
104	Republic of Moldova	0.8%	0.6%	0.5%	0.9%	−1.0%
105	Romania	0.1%	0.6%	0.9%	2.5%	4.6%
106	Russian Federation	1.7%	1.6%	1.1%	1.2%	2.0%
107	Rwanda	−4.5%	4.9%	9.1%	14.1%	24.1%
108	Saudi Arabia	1.7%	2.0%	2.3%	3.3%	6.5%
109	Senegal	2.6%	6.3%	9.9%	13.9%	23.3%
110	Serbia	0.0%	0.0%	0.2%	1.2%	1.5%
111	Sierra Leone	−1.6%	−2.5%	3.6%	7.1%	12.5%
112	Singapore	6.2%	16.8%	22.1%	30.4%	51.5%
113	Slovakia	1.0%	3.0%	4.3%	6.3%	10.3%
114	Slovenia	0.9%	3.5%	6.5%	9.7%	14.0%
115	South Africa	1.5%	3.8%	5.3%	8.0%	13.7%
116	Spain	2.5%	6.5%	11.3%	15.6%	22.9%
117	Sri Lanka	2.0%	4.8%	6.0%	7.2%	15.5%
118	Sudan (former)	4.2%	8.7%	12.4%	13.6%	21.0%
119	Swaziland	4.4%	9.2%	11.2%	13.3%	20.6%
120	Sweden	1.3%	3.5%	5.8%	8.5%	13.7%
121	Switzerland	4.2%	8.4%	9.8%	12.4%	19.2%
122	Syrian Arab Republic	2.4%	6.0%	9.0%	13.0%	13.1%
123	Tajikistan	2.6%	5.4%	8.0%	11.1%	18.8%
124	Thailand	3.3%	6.9%	9.1%	11.3%	18.0%
125	Togo	2.3%	6.9%	10.5%	14.8%	25.6%
126	Trinidad and Tobago	−0.5%	−0.9%	−1.0%	−2.3%	−5.8%
127	Tunisia	2.7%	6.4%	9.5%	13.4%	22.1%
128	Turkey	2.5%	6.7%	9.6%	13.2%	23.2%
129	Uganda	3.3%	8.1%	13.8%	19.2%	32.8%
130	Ukraine	−0.3%	−1.8%	−3.0%	−3.2%	−4.6%
131	United Arab Emirates	2.4%	6.4%	10.5%	16.2%	26.2%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
132	United Kingdom	1.6%	4.8%	7.6%	10.1%	16.1%
133	United Republic of Tanzania	3.0%	7.0%	11.2%	16.0%	27.8%
134	United States of America	1.9%	5.5%	8.7%	11.2%	17.4%
135	Uruguay	1.1%	2.9%	3.5%	4.7%	8.3%
136	Venezuela (Bolivarian Republic of)	0.0%	−0.1%	−0.1%	0.2%	0.9%
137	Viet Nam	2.0%	4.9%	7.3%	10.4%	17.6%
138	Yemen	4.2%	9.5%	13.7%	18.4%	30.3%
139	Zambia	2.4%	6.3%	10.5%	16.0%	27.3%
140	Zimbabwe	0.7%	0.5%	−0.2%	1.9%	9.9%

Table A3.4 IW per capita growth (unadjusted) (Inclusive wealth per capita change (%) with respect to base year 1990)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	−0.7%	−0.5%	−0.4%	0.7%	2.1%
2	Albania	0.2%	1.4%	3.6%	6.4%	10.7%
3	Algeria	−1.0%	−1.8%	−2.0%	−1.7%	−1.7%
4	Argentina	−0.2%	−0.2%	−0.3%	0.6%	1.8%
5	Armenia	0.4%	1.1%	1.9%	4.5%	6.9%
6	Australia	−0.1%	0.0%	0.6%	1.2%	2.2%
7	Austria	1.4%	3.8%	5.3%	6.6%	10.1%
8	Bahrain	0.3%	−0.6%	−1.6%	−0.9%	−0.3%
9	Bangladesh	0.0%	0.0%	−0.1%	0.3%	0.5%
10	Barbados	0.2%	1.1%	2.6%	3.3%	5.3%
11	Belgium	1.6%	4.2%	6.0%	7.8%	12.0%
12	Belize	−1.5%	−5.6%	−8.2%	−10.5%	−15.8%
13	Benin	0.0%	0.2%	0.1%	0.3%	0.6%
14	Bolivia (Plurinational State of)	−1.8%	−4.3%	−6.2%	−7.9%	−11.8%
15	Botswana	−0.7%	−2.0%	−1.1%	0.5%	1.1%
16	Brazil	−1.1%	−2.6%	−3.7%	−4.0%	−4.9%
17	Bulgaria	−0.6%	−1.1%	−0.5%	0.5%	0.8%
18	Burundi	−0.9%	0.5%	0.5%	0.5%	0.9%
19	Cambodia	−3.1%	−6.8%	−8.9%	−10.0%	−14.1%
20	Cameroon	−0.5%	−1.2%	−1.3%	−0.9%	−2.2%
21	Canada	−0.3%	−0.4%	−0.1%	0.2%	−1.9%
22	Central African Republic	−0.7%	−1.7%	−2.2%	−2.0%	−2.8%
23	Chile	0.1%	1.0%	2.1%	3.8%	7.7%
24	China	0.8%	2.1%	3.9%	6.9%	13.6%
25	Colombia	−0.6%	−1.4%	−2.1%	−1.7%	−9.2%
26	Congo	−0.7%	−1.9%	−1.7%	−0.7%	−1.2%
27	Costa Rica	−1.1%	−1.8%	−1.0%	0.6%	5.7%
28	Côte d'Ivoire	−0.4%	−1.1%	−1.0%	−0.9%	−1.7%

(*Continued*)

Table A3.4 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
29	Croatia	0.6%	3.0%	5.2%	7.8%	12.7%
30	Cuba	0.4%	0.8%	1.2%	2.0%	3.5%
31	Cyprus	1.4%	2.6%	3.7%	6.0%	8.0%
32	Czech Republic	1.2%	3.1%	4.7%	6.6%	10.5%
33	Democratic Republic of the Congo	−3.8%	−8.0%	−11.7%	−15.2%	−22.9%
34	Denmark	0.9%	3.0%	4.9%	6.6%	10.0%
35	Dominican Republic	0.6%	3.0%	4.5%	6.7%	10.8%
36	Ecuador	−1.7%	−4.0%	−5.3%	−6.1%	−7.4%
37	Egypt	0.2%	0.1%	0.6%	1.6%	3.1%
38	El Salvador	0.9%	2.5%	4.0%	5.4%	8.8%
39	Estonia	0.3%	0.8%	5.9%	8.9%	14.5%
40	Fiji	0.8%	0.6%	1.0%	1.6%	3.9%
41	Finland	0.5%	2.1%	3.7%	5.9%	8.5%
42	France	1.5%	3.7%	5.5%	7.3%	11.2%
43	Gabon	−2.7%	−6.3%	−8.9%	−11.4%	−17.3%
44	Gambia	−1.9%	−2.7%	−2.5%	−2.4%	−3.3%
45	Germany	1.0%	2.7%	3.7%	5.0%	8.2%
46	Ghana	−0.7%	−1.5%	−1.8%	−1.9%	−2.1%
47	Greece	0.5%	1.9%	3.9%	5.9%	7.9%
48	Guatemala	−0.2%	−0.7%	−1.2%	−1.3%	−1.8%
49	Guyana	−0.1%	−0.6%	−0.7%	−0.9%	3.1%
50	Haiti	0.3%	1.0%	1.5%	−3.7%	1.5%
51	Honduras	−2.9%	−6.8%	−8.7%	−9.9%	−14.3%
52	Hungary	1.0%	2.7%	4.7%	6.3%	10.1%
53	Iceland	−0.7%	−1.2%	−1.2%	−1.4%	−2.5%
54	India	−0.7%	−0.8%	−0.8%	−0.7%	−0.8%
55	Indonesia	−0.4%	−0.8%	−0.9%	−0.7%	−0.5%
56	Iran (Islamic Republic of)	−1.2%	−3.2%	−4.0%	−4.5%	−7.2%
57	Iraq	−2.3%	−5.8%	−8.0%	−9.8%	−15.0%
58	Ireland	0.9%	4.4%	8.4%	11.3%	17.5%
59	Israel	1.1%	3.2%	3.9%	5.6%	9.5%
60	Italy	1.5%	3.9%	5.9%	7.4%	10.1%
61	Jamaica	1.1%	1.7%	2.6%	3.1%	4.5%
62	Japan	2.1%	4.7%	5.9%	6.8%	10.1%
63	Jordan	0.9%	2.4%	3.7%	4.9%	8.0%
64	Kazakhstan	1.8%	3.1%	2.7%	2.1%	2.3%
65	Kenya	−0.3%	−0.8%	−0.1%	1.4%	2.3%
66	Kuwait	3.1%	0.4%	−2.9%	−8.8%	−16.2%
67	Kyrgyzstan	0.7%	1.3%	1.9%	2.9%	4.4%
68	Lao People's Democratic Republic	−1.5%	−2.9%	−3.6%	−4.2%	−4.8%
69	Latvia	1.0%	2.9%	5.9%	9.9%	16.1%
70	Lesotho	−1.0%	−2.9%	−5.0%	−4.5%	−6.9%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
71	Liberia	−1.4%	−1.6%	−1.7%	−0.6%	−1.5%
72	Lithuania	0.9%	2.6%	4.6%	7.5%	12.8%
73	Luxembourg	1.7%	4.8%	7.7%	10.0%	15.2%
74	Malawi	−0.3%	−0.9%	−0.4%	1.4%	3.2%
75	Malaysia	−0.4%	−1.0%	−1.9%	−2.0%	−1.0%
76	Maldives	−0.2%	0.9%	1.6%	2.7%	5.0%
77	Mali	−0.1%	−0.1%	0.0%	−0.1%	−0.1%
78	Malta	2.3%	6.4%	9.0%	12.1%	18.7%
79	Mauritania	0.1%	−0.7%	−1.3%	−1.4%	−2.0%
80	Mauritius	1.6%	4.3%	6.5%	9.5%	15.5%
81	Mexico	0.3%	1.2%	2.2%	3.4%	5.9%
82	Mongolia	−0.8%	−0.9%	−2.5%	−3.6%	−5.1%
83	Morocco	0.1%	0.5%	1.1%	1.7%	2.4%
84	Mozambique	0.6%	0.7%	−0.4%	−0.6%	−1.0%
85	Myanmar	0.3%	0.6%	0.9%	1.3%	2.1%
86	Namibia	−1.0%	−1.9%	−1.6%	−0.1%	0.1%
87	Nepal	0.1%	0.0%	0.2%	0.4%	1.1%
88	Netherlands	1.1%	3.4%	5.2%	6.9%	10.3%
89	New Zealand	−1.6%	−2.5%	−4.0%	−0.6%	−3.3%
90	Nicaragua	0.1%	−0.1%	−0.1%	−0.1%	0.5%
91	Niger	−0.2%	−0.5%	−0.5%	−0.3%	−0.8%
92	Nigeria	−0.1%	−0.3%	−0.1%	0.1%	0.1%
93	Norway	−0.4%	−0.6%	−0.7%	−0.3%	0.0%
94	Pakistan	−2.1%	−4.8%	−6.5%	−7.7%	−11.2%
95	Panama	−0.5%	−0.6%	−1.0%	0.7%	6.5%
96	Papua New Guinea	0.0%	−0.1%	−0.2%	−0.6%	−0.8%
97	Paraguay	−1.7%	−3.2%	−4.8%	−5.4%	−8.1%
98	Peru	−1.7%	−3.4%	−4.6%	−5.1%	−5.5%
99	Philippines	0.6%	1.5%	2.2%	3.1%	5.1%
100	Poland	0.4%	2.3%	3.7%	5.8%	10.3%
101	Portugal	2.2%	6.1%	9.0%	11.2%	16.0%
102	Qatar	−1.2%	−5.4%	−12.1%	−22.4%	−29.1%
103	Republic of Korea	4.8%	11.2%	16.0%	20.2%	31.5%
104	Republic of Moldova	0.9%	1.0%	1.2%	1.8%	0.3%
105	Romania	0.5%	1.5%	3.1%	6.1%	10.0%
106	Russian Federation	1.7%	1.9%	1.9%	2.2%	3.0%
107	Rwanda	−0.5%	2.3%	3.4%	4.6%	7.0%
108	Saudi Arabia	−1.2%	−4.6%	−7.7%	−9.8%	−13.9%
109	Senegal	−0.4%	−0.7%	−0.7%	−0.6%	−1.4%
110	Serbia	−0.1%	0.2%	0.7%	2.2%	3.6%
111	Sierra Leone	−1.2%	−3.3%	−2.8%	−2.7%	−4.0%
112	Singapore	3.1%	9.0%	12.3%	14.7%	24.7%
113	Slovakia	0.7%	2.6%	4.0%	5.9%	9.5%
114	Slovenia	1.0%	3.7%	6.4%	9.0%	12.9%

(*Continued*)

Table A3.4 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
115	South Africa	−0.6%	−1.8%	−2.1%	−1.4%	−1.4%
116	Spain	2.2%	5.5%	8.1%	10.5%	15.7%
117	Sri Lanka	0.8%	2.5%	2.7%	2.9%	8.2%
118	Sudan (former)	−0.1%	−0.2%	−0.1%	−2.0%	−3.4%
119	Swaziland	2.1%	3.6%	4.5%	4.5%	6.1%
120	Sweden	0.7%	2.6%	4.4%	6.0%	9.0%
121	Switzerland	3.2%	6.5%	7.1%	8.1%	11.6%
122	Syrian Arab Republic	−0.4%	−0.9%	−0.8%	−0.5%	−1.3%
123	Tajikistan	0.8%	1.4%	1.4%	1.6%	2.3%
124	Thailand	2.3%	4.2%	5.1%	6.8%	11.2%
125	Togo	−0.2%	0.3%	0.3%	0.7%	1.8%
126	Trinidad and Tobago	−1.0%	−1.9%	−2.5%	−4.3%	−9.0%
127	Tunisia	0.7%	2.3%	4.0%	6.3%	10.6%
128	Turkey	0.9%	2.5%	3.5%	5.3%	9.2%
129	Uganda	0.1%	0.0%	1.0%	1.5%	2.5%
130	Ukraine	−0.1%	−0.5%	−0.6%	−0.2%	−0.3%
131	United Arab Emirates	−2.8%	−6.6%	−11.9%	−20.7%	−26.3%
132	United Kingdom	1.4%	4.1%	6.1%	7.6%	11.5%
133	United Republic of Tanzania	−0.2%	−0.5%	−0.1%	0.3%	0.8%
134	United States of America	0.6%	2.4%	4.2%	5.4%	8.2%
135	Uruguay	0.4%	1.2%	1.7%	2.6%	5.0%
136	Venezuela (Bolivarian Republic of)	−2.2%	−5.2%	−7.3%	−8.8%	−12.7%
137	Viet Nam	0.2%	0.8%	1.6%	3.1%	5.8%
138	Yemen	−0.8%	−0.9%	−0.6%	−0.1%	0.3%
139	Zambia	−0.2%	−0.5%	0.2%	1.4%	2.2%
140	Zimbabwe	−1.5%	−3.8%	−5.4%	−5.2%	−2.9%

Table A3.5 Human capital (Human capital in billions of constant 2005 US$)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	139	200	248	316	382	451
2	Albania	73	73	74	75	75	76
3	Algeria	526	639	757	871	1,019	1,154
4	Argentina	1,009	1,116	1,222	1,336	1,455	1,559
5	Armenia	111	103	101	100	101	103
6	Australia	1,596	1,734	1,901	2,095	2,341	2,545
7	Austria	750	796	816	853	882	919
8	Bahrain	17	20	25	34	52	58
9	Bangladesh	9,128	10,212	11,285	12,243	13,128	13,778
10	Barbados	10	11	11	12	12	13
11	Belgium	890	937	988	1,045	1,124	1,191

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
12	Belize	1	1	2	2	2	3
13	Benin	2,037	2,449	2,872	3,372	3,965	4,453
14	Bolivia (Plurinational State of)	132	149	171	193	217	240
15	Botswana	453	504	532	600	708	776
16	Brazil	1,925	2,174	2,429	2,717	2,987	3,185
17	Bulgaria	2,296	2,147	2,045	1,964	1,920	1,887
18	Burundi	2,739	2,908	3,370	3,952	4,707	5,426
19	Cambodia	90	108	125	137	153	167
20	Cameroon	1,962	2,250	2,557	2,945	3,429	3,837
21	Canada	2,137	2,315	2,511	2,705	2,895	3,088
22	Central African Republic	467	532	594	650	742	815
23	Chile	337	380	423	465	508	545
24	China	23,086	26,012	28,448	30,647	32,811	34,371
25	Colombia	523	601	677	757	838	902
26	Congo	698	802	912	1,084	1,370	1,522
27	Costa Rica	37	43	50	56	61	66
28	Côte d'Ivoire	2,054	2,403	2,692	3,012	3,413	3,727
29	Croatia	253	254	250	260	266	263
30	Cuba	297	322	340	356	367	376
31	Cyprus	36	43	50	58	65	70
32	Czech Republic	605	636	643	645	679	692
33	Democratic Republic of the Congo	19	24	29	35	43	51
34	Denmark	572	592	615	635	655	676
35	Dominican Republic	139	158	179	200	223	241
36	Ecuador	115	134	156	177	201	221
37	Egypt	3,423	3,864	4,219	4,746	5,398	6,088
38	El Salvador	118	130	141	151	160	167
39	Estonia	81	76	77	76	77	77
40	Fiji	11	13	13	13	14	16
41	Finland	501	531	552	574	656	668
42	France	3,997	4,244	4,530	4,861	5,176	5,439
43	Gabon	11	14	16	20	23	27
44	Gambia	6	7	9	11	14	16
45	Germany	9,052	9,467	9,692	9,806	9,890	9,928
46	Ghana	1,241	1,389	1,526	1,723	1,960	2,158
47	Greece	567	623	671	718	759	763
48	Guatemala	1,207	1,368	1,534	1,705	1,908	2,071
49	Guyana	2	2	2	2	2	2
50	Haiti	3,022	3,389	3,790	4,180	3,655	4,699

(*Continued*)

Table A3.5 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
51	Honduras	17	20	24	27	31	34
52	Hungary	554	585	604	617	627	636
53	Iceland	25	27	29	32	35	37
54	India	315,760	336,737	370,475	402,271	433,257	457,110
55	Indonesia	2,145	2,472	2,793	3,145	3,533	3,851
56	Iran (Islamic Republic of)	844	961	1,124	1,303	1,489	1,655
57	Iraq	307	383	478	586	717	853
58	Ireland	268	285	313	363	419	439
59	Israel	260	315	366	408	482	536
60	Italy	3,484	3,644	3,808	4,045	4,280	4,510
61	Jamaica	42	46	50	53	56	57
62	Japan	12,310	12,931	13,528	13,987	14,505	14,688
63	Jordan	63	90	106	127	165	197
64	Kazakhstan	571	567	552	576	648	705
65	Kenya	2,526	2,913	3,262	3,822	4,624	5,208
66	Kuwait	708	554	651	745	869	966
67	Kyrgyzstan	125	135	150	164	179	195
68	Lao People's Democratic Republic	110	127	143	156	172	185
69	Latvia	114	110	108	106	102	99
70	Lesotho	1,007	1,051	1,036	986	1,050	1,069
71	Liberia	1,792	1,652	2,324	2,622	3,330	3,627
72	Lithuania	186	194	197	193	188	183
73	Luxembourg	49	55	60	66	74	84
74	Malawi	3,519	3,622	4,046	4,698	5,850	6,892
75	Malaysia	168	207	252	298	344	381
76	Maldives	5	7	8	9	11	12
77	Mali	3,614	4,092	4,704	5,528	6,497	7,355
78	Malta	15	16	17	19	20	22
79	Mauritania	1,030	1,200	1,349	1,536	1,741	1,915
80	Mauritius	23	25	28	29	31	32
81	Mexico	1,747	2,045	2,363	2,631	2,968	3,247
82	Mongolia	110	121	130	140	152	165
83	Morocco	2,947	3,228	3,484	3,730	3,980	4,186
84	Mozambique	10,148	12,536	14,347	15,947	18,087	20,200
85	Myanmar	2,864	3,130	3,398	3,631	3,838	4,000
86	Namibia	75	88	102	111	126	141
87	Nepal	2,642	3,083	3,448	3,751	3,998	4,266
88	Netherlands	1,344	1,426	1,507	1,584	1,640	1,688
89	New Zealand	217	245	264	288	308	324
90	Nicaragua	148	174	192	210	228	241
91	Niger	3,998	4,695	5,581	6,710	8,148	9,452

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
92	Nigeria	25,718	29,233	33,063	38,005	43,909	49,003
93	Norway	596	623	653	683	735	788
94	Pakistan	1,033	1,207	1,397	1,603	1,853	2,087
95	Panama	33	38	44	50	56	62
96	Papua New Guinea	3,912	4,497	5,155	5,853	6,529	7,032
97	Paraguay	37	43	50	58	64	70
98	Peru	211	245	278	309	343	374
99	Philippines	1,342	1,579	1,823	2,085	2,329	2,533
100	Poland	1,501	1,560	1,599	1,637	1,674	1,707
101	Portugal	341	360	392	429	458	466
102	Qatar	21	23	27	39	82	102
103	Republic of Korea	1,301	1,465	1,635	1,762	1,903	1,996
104	Republic of Moldova	87	91	93	96	98	100
105	Romania	920	933	957	947	931	940
106	Russian Federation	12,773	12,865	12,753	12,543	12,708	12,962
107	Rwanda	794	629	962	1,127	1,343	1,513
108	Saudi Arabia	452	572	695	890	1,091	1,267
109	Senegal	1,891	2,160	2,444	2,803	3,239	3,614
110	Serbia	793	794	788	787	789	783
111	Sierra Leone	4,167	3,834	3,767	4,801	5,497	5,939
112	Singapore	121	150	182	199	254	285
113	Slovakia	246	253	261	264	272	279
114	Slovenia	99	101	104	107	111	114
115	South Africa	3,163	3,491	3,807	4,050	4,459	4,801
116	Spain	1,796	1,982	2,132	2,433	2,709	2,796
117	Sri Lanka	292	331	369	385	392	449
118	Sudan (former)	6,279	7,807	8,939	10,271	10,727	11,597
119	Swaziland	14	17	20	22	25	28
120	Sweden	807	861	903	951	1,014	1,070
121	Switzerland	1,047	1,117	1,159	1,210	1,295	1,365
122	Syrian Arab Republic	336	397	464	527	618	535
123	Tajikistan	141	162	179	200	227	252
124	Thailand	1,146	1,263	1,406	1,555	1,657	1,752
125	Togo	276	311	365	420	490	558
126	Trinidad and Tobago	52	55	57	60	63	65
127	Tunisia	157	184	211	237	273	305
128	Turkey	952	1,076	1,214	1,359	1,498	1,662
129	Uganda	8,820	10,403	12,068	14,814	17,859	20,695
130	Ukraine	17,579	17,244	16,241	15,419	15,267	15,132

(*Continued*)

Table A3.5 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
131	United Arab Emirates	971	1,309	1,719	2,245	3,008	3,396
132	United Kingdom	3,960	4,117	4,323	4,548	4,848	5,129
133	United Republic of Tanzania	8,259	9,635	10,926	12,798	15,218	17,381
134	United States of America	22,901	24,852	26,787	28,289	30,118	31,265
135	Uruguay	190	200	210	214	220	225
136	Venezuela (Bolivarian Republic of)	315	367	419	478	536	587
137	Viet Nam	618	703	777	846	924	991
138	Yemen	1,758	2,185	2,575	3,016	3,529	3,981
139	Zambia	5,642	6,401	7,309	8,597	10,529	12,037
140	Zimbabwe	10,625	11,013	10,872	10,575	11,484	14,190

Table A3.6 Human capital per capita (Human capital per capita in thousands of constant 2005 US$)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	11.6	11.9	12.6	12.9	13.7	14.2
2	Albania	22.3	23.0	24.0	24.8	25.7	26.2
3	Algeria	20.3	22.1	24.3	26.2	28.3	29.6
4	Argentina	30.8	31.9	33.0	34.1	35.3	36.3
5	Armenia	31.4	31.9	32.7	33.3	34.1	34.4
6	Australia	93.5	95.9	99.3	102.7	106.3	108.4
7	Austria	97.7	100.2	101.9	103.7	105.4	107.6
8	Bahrain	33.9	35.7	37.2	39.2	41.6	42.7
9	Bangladesh	86.1	86.2	85.9	85.7	86.6	86.6
10	Barbados	39.7	41.1	40.9	42.8	43.2	45.9
11	Belgium	89.3	92.4	96.4	99.8	103.2	106.1
12	Belize	6.7	6.9	7.1	7.2	7.4	7.6
13	Benin	407.3	409.2	413.3	412.1	417.0	420.1
14	Bolivia (Plurinational State of)	19.2	19.7	20.6	21.2	21.9	22.7
15	Botswana	328.2	319.9	306.5	321.6	345.5	349.4
16	Brazil	12.8	13.4	13.8	14.4	15.0	15.5
17	Bulgaria	263.4	255.4	250.3	253.7	259.5	261.2
18	Burundi	487.9	466.1	498.0	498.1	497.5	501.7
19	Cambodia	9.9	10.1	10.3	10.3	10.7	10.9
20	Cameroon	162.5	161.5	160.6	162.4	166.5	168.5
21	Canada	76.9	78.9	81.6	83.7	85.1	86.9

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
22	Central African Republic	158.9	159.6	159.3	160.3	166.9	169.7
23	Chile	25.6	26.7	27.9	28.9	29.9	30.7
24	China	20.3	21.6	22.5	23.5	24.5	25.2
25	Colombia	15.3	16.1	16.8	17.5	18.2	18.9
26	Congo	292.3	294.8	293.3	309.5	336.9	337.9
27	Costa Rica	11.9	12.3	12.7	13.1	13.5	13.8
28	Côte d'Ivoire	168.8	166.9	163.0	166.1	169.5	168.2
29	Croatia	52.9	54.3	56.6	58.6	60.3	62.0
30	Cuba	28.1	29.5	30.5	31.6	32.4	33.1
31	Cyprus	46.9	49.8	52.8	56.1	59.0	61.0
32	Czech Republic	58.6	61.6	62.7	63.2	64.8	65.7
33	Democratic Republic of the Congo	0.5	0.6	0.6	0.6	0.7	0.7
34	Denmark	111.3	113.2	115.1	117.1	118.1	119.7
35	Dominican Republic	19.4	20.0	20.9	21.6	22.6	23.2
36	Ecuador	11.2	11.7	12.3	12.9	13.4	13.9
37	Egypt	60.7	61.9	61.7	63.3	65.8	68.0
38	El Salvador	22.4	23.3	24.3	25.3	26.4	27.4
39	Estonia	51.8	53.1	55.0	56.4	57.9	58.6
40	Fiji	15.3	16.8	16.3	15.8	16.5	18.1
41	Finland	100.5	104.0	106.7	109.4	122.2	122.2
42	France	68.3	71.3	74.4	76.9	79.6	81.8
43	Gabon	11.7	12.5	13.3	14.3	15.1	15.8
44	Gambia	6.5	6.8	7.2	7.6	8.0	8.4
45	Germany	114.0	115.9	117.9	118.9	120.9	122.6
46	Ghana	84.9	82.8	81.1	80.5	80.6	80.6
47	Greece	55.6	59.0	62.1	65.4	68.2	70.1
48	Guatemala	131.7	132.1	131.2	129.3	129.5	129.3
49	Guyana	2.5	2.6	2.6	2.7	2.8	2.8
50	Haiti	425.7	433.4	443.3	451.3	365.6	444.5
51	Honduras	3.5	3.6	3.8	3.9	4.1	4.2
52	Hungary	53.4	56.7	59.1	61.2	62.7	64.5
53	Iceland	99.5	101.2	103.9	107.5	110.2	112.5
54	India	362.7	350.4	351.8	351.6	352.0	353.0
55	Indonesia	11.8	12.5	13.2	13.9	14.6	15.1
56	Iran (Islamic Republic of)	15.0	15.9	17.1	18.6	20.1	21.2
57	Iraq	17.5	18.9	20.3	21.7	23.2	24.2
58	Ireland	76.3	78.9	82.3	87.4	91.9	95.1
59	Israel	55.7	56.9	58.2	58.9	63.3	65.3
60	Italy	61.4	64.1	66.9	69.8	72.2	74.2
61	Jamaica	17.8	18.7	19.5	20.2	20.7	21.1
62	Japan	99.7	103.1	106.7	109.4	113.2	115.6
63	Jordan	18.7	20.8	22.3	23.9	25.3	26.6
64	Kazakhstan	35.0	35.9	37.1	38.1	39.7	40.8

(*Continued*)

Table A3.6 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
65	Kenya	107.7	106.4	105.0	108.1	114.7	116.1
66	Kuwait	343.7	338.2	337.6	329.1	283.9	257.3
67	Kyrgyzstan	28.4	29.6	30.6	31.7	32.8	33.5
68	Lao People's Democratic Republic	25.8	26.2	26.7	27.2	27.5	27.7
69	Latvia	42.7	44.2	45.7	47.3	48.5	49.5
70	Lesotho	630.5	599.3	558.0	512.1	522.2	506.7
71	Liberia	852.3	794.3	803.6	801.8	841.4	824.9
72	Lithuania	50.4	53.4	56.2	58.2	60.7	62.4
73	Luxembourg	129.3	133.8	137.2	142.0	146.9	151.0
74	Malawi	374.1	368.7	361.5	368.5	396.1	412.8
75	Malaysia	9.3	10.0	10.8	11.5	12.2	12.8
76	Maldives	24.7	25.8	27.1	28.2	30.2	30.0
77	Mali	426.1	424.4	425.8	429.2	428.3	430.5
78	Malta	41.5	42.9	44.8	46.7	48.7	50.8
79	Mauritania	508.9	514.3	497.7	487.1	484.7	482.4
80	Mauritius	21.5	22.2	23.2	24.0	24.8	25.3
81	Mexico	20.4	21.7	23.0	24.0	25.0	25.9
82	Mongolia	50.6	52.6	54.4	55.4	56.0	56.6
83	Morocco	118.1	118.8	120.4	122.7	123.9	123.4
84	Mozambique	758.9	787.8	785.5	754.8	743.7	742.2
85	Myanmar	68.2	70.0	71.3	72.6	74.2	74.9
86	Namibia	52.7	53.0	53.5	54.9	57.5	58.7
87	Nepal	141.0	144.1	145.2	147.0	148.8	151.4
88	Netherlands	89.9	92.2	94.6	97.0	98.7	100.1
89	New Zealand	65.1	66.8	68.5	69.7	70.9	71.9
90	Nicaragua	35.6	37.7	38.2	39.0	39.7	40.0
91	Niger	505.3	501.5	497.2	497.6	500.1	494.5
92	Nigeria	269.0	269.7	269.0	272.2	275.5	276.1
93	Norway	140.5	142.9	145.3	147.8	150.4	153.5
94	Pakistan	9.6	9.8	10.1	10.4	10.9	11.3
95	Panama	13.2	13.9	14.5	15.0	15.6	16.0
96	Papua New Guinea	941.0	953.6	959.2	961.6	953.4	942.2
97	Paraguay	8.8	9.1	9.5	9.9	10.4	10.6
98	Peru	9.7	10.2	10.7	11.2	11.7	12.1
99	Philippines	21.7	22.6	23.4	24.2	25.0	25.6
100	Poland	39.4	40.4	41.8	42.9	44.0	44.9
101	Portugal	34.1	35.9	38.1	40.8	43.3	44.8
102	Qatar	43.1	44.9	45.7	46.5	46.5	46.8
103	Republic of Korea	30.4	32.5	34.8	36.6	38.5	39.6
104	Republic of Moldova	23.6	24.8	25.7	26.6	27.5	28.1
105	Romania	39.6	41.1	42.6	44.4	46.0	47.2
106	Russian Federation	86.1	86.7	87.0	87.4	89.0	90.1
107	Rwanda	109.3	106.4	119.9	125.2	130.5	133.4

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
108	Saudi Arabia	27.6	30.4	32.5	36.0	38.8	41.0
109	Senegal	251.7	248.0	247.9	248.7	250.0	246.3
110	Serbia	104.5	104.1	104.9	105.8	108.2	109.8
111	Sierra Leone	1,059.9	999.0	927.7	946.6	951.6	940.4
112	Singapore	39.8	42.6	45.2	46.8	50.1	52.1
113	Slovakia	46.4	47.1	48.4	49.2	50.5	51.5
114	Slovenia	49.5	50.8	52.1	53.4	54.3	55.4
115	South Africa	89.9	89.2	86.5	85.7	87.8	88.8
116	Spain	46.2	50.3	53.0	55.7	58.2	60.2
117	Sri Lanka	17.1	18.3	19.8	19.9	19.5	21.6
118	Sudan (former)	313.8	316.2	318.4	321.1	297.0	294.7
119	Swaziland	16.1	17.2	18.4	19.7	21.1	22.3
120	Sweden	94.3	97.6	101.8	105.4	108.1	110.3
121	Switzerland	156.0	158.6	161.4	162.7	165.5	166.7
122	Syrian Arab Republic	27.0	27.7	28.3	29.1	29.8	28.5
123	Tajikistan	26.6	28.0	28.9	29.4	29.9	30.3
124	Thailand	20.3	21.3	22.4	23.6	24.8	25.9
125	Togo	72.8	72.6	74.9	75.2	76.7	78.5
126	Trinidad and Tobago	42.2	43.7	45.3	46.1	47.4	48.2
127	Tunisia	19.2	20.6	22.0	23.6	25.9	27.7
128	Turkey	17.6	18.4	19.2	20.0	20.7	21.4
129	Uganda	507.3	509.6	507.9	528.3	538.8	547.7
130	Ukraine	338.8	334.8	330.3	327.3	332.8	333.6
131	United Arab Emirates	536.0	557.0	563.5	500.9	361.1	373.8
132	United Kingdom	69.2	71.0	73.4	75.3	77.2	79.4
133	United Republic of Tanzania	324.4	322.2	321.4	327.6	333.4	335.4
134	United States of America	91.7	93.3	94.9	95.7	97.4	98.0
135	Uruguay	61.0	61.9	63.1	64.4	65.2	65.9
136	Venezuela (Bolivarian Republic of)	15.9	16.5	17.1	17.9	18.5	19.1
137	Viet Nam	9.4	9.8	10.0	10.3	10.6	10.9
138	Yemen	147.0	143.1	144.7	147.1	149.6	152.0
139	Zambia	692.9	691.7	690.5	713.8	756.5	765.7
140	Zimbabwe	1,013.4	942.7	869.8	814.4	821.8	930.8

Table A3.7 Human capital growth (Human capital change (%) with respect to base year 1990)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	7.5%	15.4%	22.7%	28.7%	47.8%
2	Albania	0.1%	0.4%	0.6%	0.6%	1.3%
3	Algeria	4.0%	9.5%	13.5%	18.0%	30.0%

(*Continued*)

Table A3.7 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
4	Argentina	2.0%	4.9%	7.3%	9.6%	15.6%
5	Armenia	−1.5%	−2.5%	−2.5%	−2.3%	−2.4%
6	Australia	1.7%	4.5%	7.0%	10.0%	16.8%
7	Austria	1.2%	2.1%	3.3%	4.1%	7.0%
8	Bahrain	3.6%	10.2%	19.2%	32.9%	51.3%
9	Bangladesh	2.3%	5.4%	7.6%	9.5%	14.7%
10	Barbados	1.1%	1.7%	3.2%	4.0%	8.0%
11	Belgium	1.0%	2.6%	4.1%	6.0%	10.2%
12	Belize	2.5%	8.5%	13.0%	17.4%	28.5%
13	Benin	3.8%	9.0%	13.4%	18.1%	29.8%
14	Bolivia (Plurinational State of)	2.5%	6.8%	10.0%	13.3%	22.1%
15	Botswana	2.2%	4.1%	7.3%	11.8%	19.6%
16	Brazil	2.5%	6.0%	9.0%	11.6%	18.3%
17	Bulgaria	−1.3%	−2.9%	−3.8%	−4.4%	−6.3%
18	Burundi	1.2%	5.3%	9.6%	14.5%	25.6%
19	Cambodia	3.9%	8.7%	11.3%	14.4%	23.0%
20	Cameroon	2.8%	6.9%	10.7%	15.0%	25.1%
21	Canada	1.6%	4.1%	6.1%	7.9%	13.1%
22	Central African Republic	2.7%	6.2%	8.6%	12.3%	20.4%
23	Chile	2.4%	5.9%	8.4%	10.8%	17.4%
24	China	2.4%	5.4%	7.3%	9.2%	14.2%
25	Colombia	2.8%	6.7%	9.7%	12.5%	19.9%
26	Congo	2.8%	6.9%	11.7%	18.4%	29.7%
27	Costa Rica	3.2%	7.9%	10.8%	13.6%	21.2%
28	Côte d'Ivoire	3.2%	7.0%	10.0%	13.5%	22.0%
29	Croatia	0.1%	−0.2%	0.7%	1.3%	1.3%
30	Cuba	1.6%	3.4%	4.6%	5.4%	8.2%
31	Cyprus	3.4%	8.5%	12.6%	16.0%	25.1%
32	Czech Republic	1.0%	1.5%	1.6%	2.9%	4.6%
33	Democratic Republic of the Congo	4.7%	10.8%	16.4%	22.5%	38.4%
34	Denmark	0.7%	1.8%	2.6%	3.4%	5.7%
35	Dominican Republic	2.6%	6.5%	9.5%	12.6%	20.2%
36	Ecuador	3.2%	7.9%	11.4%	15.0%	24.4%
37	Egypt	2.5%	5.4%	8.5%	12.1%	21.2%
38	El Salvador	2.1%	4.6%	6.3%	7.9%	12.4%
39	Estonia	−1.2%	−1.4%	−1.5%	−1.3%	−1.7%
40	Fiji	3.1%	4.2%	3.7%	6.2%	12.8%
41	Finland	1.2%	2.5%	3.5%	6.9%	10.0%
42	France	1.2%	3.2%	5.0%	6.7%	10.8%
43	Gabon	4.1%	10.1%	15.2%	20.2%	33.6%
44	Gambia	3.9%	10.1%	16.1%	22.7%	39.0%
45	Germany	0.9%	1.7%	2.0%	2.2%	3.1%
46	Ghana	2.3%	5.3%	8.5%	12.1%	20.2%
47	Greece	1.9%	4.3%	6.1%	7.5%	10.4%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
48	Guatemala	2.5%	6.2%	9.0%	12.1%	19.7%
49	Guyana	0.7%	2.3%	2.9%	4.0%	6.0%
50	Haiti	2.3%	5.8%	8.4%	4.9%	15.8%
51	Honduras	3.5%	8.3%	12.1%	15.8%	25.5%
52	Hungary	1.1%	2.2%	2.7%	3.2%	4.7%
53	Iceland	1.3%	3.6%	5.9%	8.4%	13.2%
54	India	1.3%	4.1%	6.2%	8.2%	13.1%
55	Indonesia	2.9%	6.8%	10.0%	13.3%	21.5%
56	Iran (Islamic Republic of)	2.6%	7.4%	11.5%	15.3%	25.2%
57	Iraq	4.5%	11.7%	17.6%	23.7%	40.7%
58	Ireland	1.2%	4.0%	7.9%	11.8%	17.9%
59	Israel	4.0%	9.0%	11.9%	16.7%	27.3%
60	Italy	0.9%	2.2%	3.8%	5.3%	9.0%
61	Jamaica	1.8%	4.4%	5.9%	7.0%	10.6%
62	Japan	1.0%	2.4%	3.2%	4.2%	6.1%
63	Jordan	7.5%	14.1%	19.4%	27.4%	46.5%
64	Kazakhstan	−0.2%	−0.9%	0.2%	3.2%	7.3%
65	Kenya	2.9%	6.6%	10.9%	16.3%	27.3%
66	Kuwait	−4.8%	−2.1%	1.3%	5.3%	10.9%
67	Kyrgyzstan	1.6%	4.8%	7.0%	9.4%	16.2%
68	Lao People's Democratic Republic	3.0%	6.8%	9.2%	11.9%	19.0%
69	Latvia	−0.7%	−1.2%	−1.8%	−2.7%	−4.6%
70	Lesotho	0.9%	0.7%	−0.5%	1.0%	2.0%
71	Liberia	−1.6%	6.7%	10.0%	16.8%	26.5%
72	Lithuania	0.8%	1.4%	0.9%	0.2%	−0.6%
73	Luxembourg	2.1%	4.9%	7.5%	10.8%	19.4%
74	Malawi	0.6%	3.5%	7.5%	13.5%	25.1%
75	Malaysia	4.2%	10.6%	15.3%	19.6%	31.3%
76	Maldives	4.1%	9.5%	13.9%	19.7%	30.6%
77	Mali	2.5%	6.8%	11.2%	15.8%	26.7%
78	Malta	1.6%	3.8%	6.5%	8.3%	13.9%
79	Mauritania	3.1%	7.0%	10.5%	14.0%	23.0%
80	Mauritius	1.9%	4.9%	6.7%	8.1%	12.0%
81	Mexico	3.2%	7.8%	10.8%	14.2%	22.9%
82	Mongolia	1.8%	4.2%	6.1%	8.3%	14.3%
83	Morocco	1.8%	4.3%	6.1%	7.8%	12.4%
84	Mozambique	4.3%	9.0%	12.0%	15.5%	25.8%
85	Myanmar	1.8%	4.4%	6.1%	7.6%	11.8%
86	Namibia	3.3%	8.0%	10.5%	14.0%	23.6%
87	Nepal	3.1%	6.9%	9.2%	10.9%	17.3%
88	Netherlands	1.2%	2.9%	4.2%	5.1%	7.9%
89	New Zealand	2.5%	5.1%	7.4%	9.2%	14.3%
90	Nicaragua	3.3%	6.8%	9.2%	11.5%	17.7%
91	Niger	3.3%	8.7%	13.8%	19.5%	33.2%

(*Continued*)

Table A3.7 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
92	Nigeria	2.6%	6.5%	10.3%	14.3%	24.0%
93	Norway	0.9%	2.3%	3.5%	5.4%	9.8%
94	Pakistan	3.2%	7.8%	11.6%	15.7%	26.4%
95	Panama	3.1%	7.7%	11.1%	14.6%	23.6%
96	Papua New Guinea	2.8%	7.1%	10.6%	13.7%	21.6%
97	Paraguay	3.2%	8.0%	11.6%	14.7%	23.4%
98	Peru	3.0%	7.1%	10.0%	12.9%	21.0%
99	Philippines	3.3%	8.0%	11.6%	14.8%	23.6%
100	Poland	0.8%	1.6%	2.2%	2.8%	4.4%
101	Portugal	1.1%	3.6%	5.9%	7.7%	11.0%
102	Qatar	1.9%	7.2%	17.3%	41.4%	70.5%
103	Republic of Korea	2.4%	5.9%	7.9%	10.0%	15.3%
104	Republic of Moldova	0.9%	1.8%	2.3%	2.9%	4.6%
105	Romania	0.3%	1.0%	0.7%	0.3%	0.7%
106	Russian Federation	0.1%	0.0%	−0.5%	−0.1%	0.5%
107	Rwanda	−4.5%	4.9%	9.2%	14.1%	24.0%
108	Saudi Arabia	4.8%	11.3%	18.4%	24.6%	41.0%
109	Senegal	2.7%	6.6%	10.3%	14.4%	24.1%
110	Serbia	0.0%	−0.1%	−0.2%	−0.1%	−0.4%
111	Sierra Leone	−1.7%	−2.5%	3.6%	7.2%	12.5%
112	Singapore	4.4%	10.7%	13.3%	20.3%	33.0%
113	Slovakia	0.6%	1.5%	1.8%	2.6%	4.3%
114	Slovenia	0.4%	1.2%	2.0%	3.0%	5.0%
115	South Africa	2.0%	4.7%	6.4%	9.0%	14.9%
116	Spain	2.0%	4.4%	7.9%	10.8%	15.9%
117	Sri Lanka	2.6%	6.1%	7.2%	7.7%	15.5%
118	Sudan (former)	4.5%	9.2%	13.1%	14.3%	22.7%
119	Swaziland	3.6%	9.0%	11.9%	16.1%	26.8%
120	Sweden	1.3%	2.9%	4.2%	5.9%	9.8%
121	Switzerland	1.3%	2.6%	3.7%	5.5%	9.2%
122	Syrian Arab Republic	3.4%	8.4%	11.9%	16.5%	16.8%
123	Tajikistan	2.8%	6.2%	9.2%	12.7%	21.4%
124	Thailand	2.0%	5.2%	7.9%	9.6%	15.2%
125	Togo	2.4%	7.3%	11.1%	15.5%	26.5%
126	Trinidad and Tobago	1.2%	2.7%	3.8%	5.1%	8.2%
127	Tunisia	3.3%	7.6%	10.8%	14.9%	24.8%
128	Turkey	2.5%	6.3%	9.3%	12.0%	20.4%
129	Uganda	3.4%	8.2%	13.8%	19.3%	32.9%
130	Ukraine	−0.4%	−2.0%	−3.2%	−3.5%	−4.9%
131	United Arab Emirates	6.2%	15.3%	23.3%	32.7%	51.8%
132	United Kingdom	0.8%	2.2%	3.5%	5.2%	9.0%
133	United Republic of Tanzania	3.1%	7.2%	11.6%	16.5%	28.2%
134	United States of America	1.6%	4.0%	5.4%	7.1%	10.9%
135	Uruguay	1.0%	2.5%	3.1%	3.8%	5.9%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
136	Venezuela (Bolivarian Republic of)	3.1%	7.4%	11.0%	14.2%	23.0%
137	Viet Nam	2.6%	5.9%	8.2%	10.6%	17.1%
138	Yemen	4.4%	10.0%	14.4%	19.0%	31.3%
139	Zambia	2.6%	6.7%	11.1%	16.9%	28.7%
140	Zimbabwe	0.7%	0.6%	−0.1%	2.0%	10.1%

Table A3.8 Human capital per capita growth (Human capital per capita change (%) with respect to base year 1990)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	0.7%	2.1%	2.9%	4.3%	7.2%
2	Albania	0.7%	1.9%	2.8%	3.7%	5.7%
3	Algeria	1.7%	4.6%	6.6%	8.6%	13.5%
4	Argentina	0.7%	1.7%	2.6%	3.5%	5.6%
5	Armenia	0.3%	1.1%	1.5%	2.1%	3.1%
6	Australia	0.5%	1.5%	2.4%	3.2%	5.1%
7	Austria	0.5%	1.1%	1.5%	1.9%	3.3%
8	Bahrain	1.0%	2.4%	3.7%	5.2%	8.0%
9	Bangladesh	0.0%	0.0%	−0.1%	0.1%	0.2%
10	Barbados	0.7%	0.8%	1.9%	2.1%	5.0%
11	Belgium	0.7%	1.9%	2.8%	3.7%	5.9%
12	Belize	0.5%	1.3%	1.9%	2.6%	4.2%
13	Benin	0.1%	0.4%	0.3%	0.6%	1.0%
14	Bolivia (Plurinational State of)	0.5%	1.7%	2.4%	3.3%	5.7%
15	Botswana	−0.5%	−1.7%	−0.5%	1.3%	2.1%
16	Brazil	0.9%	1.9%	3.0%	4.1%	6.5%
17	Bulgaria	−0.6%	−1.3%	−0.9%	−0.4%	−0.3%
18	Burundi	−0.9%	0.5%	0.5%	0.5%	0.9%
19	Cambodia	0.4%	0.8%	0.9%	1.8%	3.0%
20	Cameroon	−0.1%	−0.3%	0.0%	0.6%	1.2%
21	Canada	0.5%	1.5%	2.1%	2.6%	4.2%
22	Central African Republic	0.1%	0.1%	0.2%	1.2%	2.2%
23	Chile	0.9%	2.1%	3.0%	3.9%	6.2%
24	China	1.2%	2.6%	3.7%	4.8%	7.4%
25	Colombia	1.0%	2.4%	3.5%	4.6%	7.3%
26	Congo	0.2%	0.1%	1.4%	3.6%	5.0%
27	Costa Rica	0.7%	1.7%	2.4%	3.2%	5.1%
28	Côte d'Ivoire	−0.2%	−0.9%	−0.4%	0.1%	−0.1%
29	Croatia	0.6%	1.7%	2.6%	3.3%	5.4%
30	Cuba	1.0%	2.1%	3.0%	3.7%	5.7%
31	Cyprus	1.2%	3.0%	4.6%	5.9%	9.2%
32	Czech Republic	1.0%	1.7%	1.9%	2.6%	3.9%

(*Continued*)

Table A3.8 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
33	Democratic Republic of the Congo	0.9%	2.4%	3.5%	4.6%	7.3%
34	Denmark	0.3%	0.9%	1.3%	1.5%	2.5%
35	Dominican Republic	0.7%	1.9%	2.8%	3.9%	6.2%
36	Ecuador	0.9%	2.4%	3.5%	4.6%	7.3%
37	Egypt	0.4%	0.4%	1.1%	2.0%	3.8%
38	El Salvador	0.8%	2.0%	3.1%	4.2%	6.9%
39	Estonia	0.5%	1.5%	2.1%	2.8%	4.2%
40	Fiji	1.8%	1.5%	0.7%	1.9%	5.7%
41	Finland	0.7%	1.5%	2.1%	5.0%	6.7%
42	France	0.9%	2.1%	3.0%	3.9%	6.2%
43	Gabon	1.4%	3.2%	5.0%	6.6%	10.4%
44	Gambia	0.9%	2.4%	3.7%	5.2%	8.5%
45	Germany	0.3%	0.9%	1.1%	1.5%	2.5%
46	Ghana	−0.5%	−1.1%	−1.3%	−1.3%	−1.7%
47	Greece	1.2%	2.8%	4.1%	5.2%	8.0%
48	Guatemala	0.1%	−0.1%	−0.5%	−0.4%	−0.6%
49	Guyana	0.5%	1.5%	2.1%	2.8%	4.0%
50	Haiti	0.4%	1.0%	1.5%	−3.7%	1.4%
51	Honduras	0.9%	1.9%	3.0%	4.1%	6.7%
52	Hungary	1.2%	2.6%	3.5%	4.1%	6.5%
53	Iceland	0.3%	1.1%	1.9%	2.6%	4.2%
54	India	−0.7%	−0.8%	−0.8%	−0.7%	−0.9%
55	Indonesia	1.2%	2.8%	4.1%	5.5%	8.6%
56	Iran (Islamic Republic of)	1.2%	3.2%	5.5%	7.5%	12.1%
57	Iraq	1.5%	3.7%	5.5%	7.3%	11.3%
58	Ireland	0.7%	1.9%	3.5%	4.8%	7.6%
59	Israel	0.4%	1.1%	1.4%	3.2%	5.4%
60	Italy	0.9%	2.1%	3.2%	4.1%	6.5%
61	Jamaica	1.0%	2.4%	3.2%	3.9%	6.0%
62	Japan	0.7%	1.7%	2.4%	3.2%	5.1%
63	Jordan	2.2%	4.6%	6.4%	8.0%	12.5%
64	Kazakhstan	0.5%	1.5%	2.1%	3.2%	5.3%
65	Kenya	−0.2%	−0.6%	0.1%	1.6%	2.5%
66	Kuwait	−0.3%	−0.5%	−1.1%	−4.7%	−9.2%
67	Kyrgyzstan	0.9%	1.9%	2.8%	3.7%	5.7%
68	Lao People's Democratic Republic	0.3%	0.9%	1.3%	1.5%	2.3%
69	Latvia	0.7%	1.7%	2.6%	3.2%	5.1%
70	Lesotho	−1.0%	−3.0%	−5.1%	−4.6%	−7.0%
71	Liberia	−1.4%	−1.5%	−1.5%	−0.3%	−1.1%
72	Lithuania	1.2%	2.8%	3.7%	4.8%	7.4%
73	Luxembourg	0.7%	1.5%	2.4%	3.2%	5.3%
74	Malawi	−0.3%	−0.9%	−0.4%	1.4%	3.3%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
75	Malaysia	1.5%	3.9%	5.7%	7.3%	11.3%
76	Maldives	0.9%	2.3%	3.4%	5.1%	6.6%
77	Mali	−0.1%	0.0%	0.2%	0.1%	0.3%
78	Malta	0.7%	1.9%	3.0%	4.1%	7.0%
79	Mauritania	0.2%	−0.6%	−1.1%	−1.2%	−1.8%
80	Mauritius	0.7%	1.9%	2.8%	3.7%	5.7%
81	Mexico	1.2%	3.0%	4.1%	5.2%	8.3%
82	Mongolia	0.8%	1.8%	2.3%	2.6%	3.8%
83	Morocco	0.1%	0.5%	1.0%	1.2%	1.5%
84	Mozambique	0.7%	0.9%	−0.1%	−0.5%	−0.7%
85	Myanmar	0.5%	1.1%	1.6%	2.1%	3.2%
86	Namibia	0.1%	0.4%	1.0%	2.2%	3.6%
87	Nepal	0.4%	0.7%	1.1%	1.4%	2.4%
88	Netherlands	0.5%	1.3%	1.9%	2.4%	3.6%
89	New Zealand	0.5%	1.3%	1.7%	2.1%	3.3%
90	Nicaragua	1.2%	1.8%	2.3%	2.8%	4.0%
91	Niger	−0.2%	−0.4%	−0.4%	−0.3%	−0.7%
92	Nigeria	0.1%	0.0%	0.3%	0.6%	0.9%
93	Norway	0.3%	0.9%	1.3%	1.7%	3.0%
94	Pakistan	0.5%	1.3%	2.1%	3.2%	5.5%
95	Panama	1.0%	2.4%	3.2%	4.1%	6.5%
96	Papua New Guinea	0.3%	0.5%	0.5%	0.3%	0.0%
97	Paraguay	0.7%	1.9%	3.0%	4.1%	6.5%
98	Peru	1.0%	2.6%	3.7%	4.8%	7.6%
99	Philippines	0.9%	1.9%	2.8%	3.7%	5.7%
100	Poland	0.5%	1.5%	2.1%	2.8%	4.5%
101	Portugal	1.0%	2.8%	4.6%	6.1%	9.5%
102	Qatar	0.9%	1.5%	1.9%	1.9%	2.8%
103	Republic of Korea	1.4%	3.5%	4.8%	6.1%	9.2%
104	Republic of Moldova	1.0%	2.1%	3.0%	3.9%	6.0%
105	Romania	0.7%	1.8%	2.9%	3.8%	6.0%
106	Russian Federation	0.1%	0.2%	0.4%	0.8%	1.5%
107	Rwanda	−0.5%	2.3%	3.4%	4.5%	6.9%
108	Saudi Arabia	1.9%	4.1%	6.8%	8.9%	14.0%
109	Senegal	−0.3%	−0.4%	−0.3%	−0.2%	−0.7%
110	Serbia	−0.1%	0.1%	0.3%	0.9%	1.7%
111	Sierra Leone	−1.2%	−3.3%	−2.8%	−2.7%	−3.9%
112	Singapore	1.4%	3.2%	4.1%	5.9%	9.4%
113	Slovakia	0.3%	1.1%	1.5%	2.1%	3.6%
114	Slovenia	0.5%	1.3%	1.9%	2.4%	3.9%
115	South Africa	−0.1%	−0.9%	−1.2%	−0.6%	−0.4%
116	Spain	1.7%	3.5%	4.8%	5.9%	9.2%
117	Sri Lanka	1.4%	3.7%	3.9%	3.3%	8.2%
118	Sudan (former)	0.1%	0.4%	0.6%	−1.4%	−2.1%

(*Continued*)

Table A3.8 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
119	Swaziland	1.4%	3.5%	5.2%	7.0%	11.5%
120	Sweden	0.7%	1.9%	2.8%	3.5%	5.4%
121	Switzerland	0.3%	0.9%	1.1%	1.5%	2.2%
122	Syrian Arab Republic	0.5%	1.3%	1.9%	2.6%	1.9%
123	Tajikistan	1.0%	2.1%	2.6%	3.0%	4.5%
124	Thailand	1.0%	2.6%	3.9%	5.2%	8.5%
125	Togo	−0.1%	0.7%	0.8%	1.3%	2.5%
126	Trinidad and Tobago	0.7%	1.8%	2.3%	3.0%	4.5%
127	Tunisia	1.4%	3.5%	5.2%	7.7%	13.0%
128	Turkey	0.9%	2.1%	3.2%	4.1%	6.7%
129	Uganda	0.1%	0.0%	1.0%	1.5%	2.6%
130	Ukraine	−0.2%	−0.6%	−0.9%	−0.4%	−0.5%
131	United Arab Emirates	0.8%	1.3%	−1.7%	−9.4%	−11.3%
132	United Kingdom	0.5%	1.5%	2.1%	2.8%	4.7%
133	United Republic of Tanzania	−0.1%	−0.2%	0.2%	0.7%	1.1%
134	United States of America	0.3%	0.9%	1.1%	1.5%	2.2%
135	Uruguay	0.3%	0.9%	1.4%	1.7%	2.6%
136	Venezuela (Bolivarian Republic of)	0.9%	1.9%	3.0%	3.9%	6.4%
137	Viet Nam	0.9%	1.7%	2.4%	3.2%	5.3%
138	Yemen	−0.5%	−0.4%	0.0%	0.4%	1.1%
139	Zambia	0.0%	−0.1%	0.7%	2.2%	3.4%
140	Zimbabwe	−1.4%	−3.7%	−5.3%	−5.1%	−2.8%

Table A3.9 Produced capital (Produced capital in billions of constant 2005 US$)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	25	25	24	24	28	31
2	Albania	25	23	24	31	41	47
3	Algeria	280	293	309	346	421	512
4	Argentina	488	533	608	634	770	915
5	Armenia	15	15	14	16	23	25
6	Australia	1,333	1,557	1,900	2,397	3,105	3,755
7	Austria	805	937	1,077	1,210	1,330	1,418
8	Bahrain	25	30	34	42	65	74
9	Bangladesh	53	66	91	130	190	259
10	Barbados	10	10	11	12	13	13
11	Belgium	875	1,004	1,148	1,300	1,478	1,605
12	Belize	1	2	2	3	3	4
13	Benin	9	11	12	15	18	21
14	Bolivia (Plurinational State of)	13	15	19	21	25	32

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
15	Botswana	8	13	18	25	35	47
16	Brazil	1,899	2,068	2,316	2,506	2,904	3,435
17	Bulgaria	48	46	49	66	99	114
18	Burundi	2	2	2	3	3	5
19	Cambodia	4	4	6	9	15	21
20	Cameroon	32	34	36	42	51	61
21	Canada	2,010	2,295	2,686	3,227	3,899	4,468
22	Central African Republic	4	4	4	4	4	4
23	Chile	91	129	186	248	352	465
24	China	1,537	2,365	3,831	6,445	11,534	18,000
25	Colombia	276	338	382	420	530	669
26	Congo	16	19	20	22	30	45
27	Costa Rica	23	29	37	46	60	75
28	Côte d'Ivoire	147	146	160	138	121	102
29	Croatia	94	95	110	135	170	183
30	Cuba	111	106	101	97	106	113
31	Cyprus	40	48	54	61	73	74
32	Czech Republic	383	418	483	558	659	719
33	Democratic Republic of the Congo	50	47	43	40	45	53
34	Denmark	519	583	693	809	933	997
35	Dominican Republic	47	58	84	107	140	164
36	Ecuador	88	99	106	121	145	180
37	Egypt	95	117	150	188	260	307
38	El Salvador	24	28	33	39	45	49
39	Estonia	31	31	35	46	59	68
40	Fiji	6	6	7	8	9	10
41	Finland	539	570	639	727	818	868
42	France	5,152	5,829	6,548	7,452	8,404	9,019
43	Gabon	42	42	45	47	50	55
44	Gambia	1	1	1	2	2	3
45	Germany	7,209	8,321	9,384	10,196	11,045	11,749
46	Ghana	30	32	36	43	59	84
47	Greece	579	616	693	812	940	906
48	Guatemala	42	48	59	70	82	90
49	Guyana	3	4	5	5	6	7
50	Haiti	8	9	11	15	17	20
51	Honduras	16	20	26	31	39	43
52	Hungary	288	301	332	385	437	462
53	Iceland	31	34	40	49	58	59
54	India	867	1,141	1,557	2,241	3,618	5,049
55	Indonesia	310	485	660	811	1,056	1,343
56	Iran (Islamic Republic of)	558	599	652	793	989	1,096

(*Continued*)

Table A3.9 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
57	Iraq	60	54	48	56	77	112
58	Ireland	285	320	419	580	736	799
59	Israel	203	270	349	404	475	557
60	Italy	4,493	5,021	5,594	6,326	6,941	7,072
61	Jamaica	34	40	44	49	53	54
62	Japan	13,360	16,115	18,265	19,606	20,452	20,939
63	Jordan	26	32	37	43	55	65
64	Kazakhstan	259	284	260	265	327	386
65	Kenya	34	38	44	51	69	90
66	Kuwait	86	95	107	127	192	248
67	Kyrgyzstan	9	9	9	9	11	13
68	Lao People's Democratic Republic	2	3	5	7	13	20
69	Latvia	33	32	35	47	64	73
70	Lesotho	4	5	7	7	8	9
71	Liberia	3	3	3	2	3	4
72	Lithuania	67	67	70	79	97	108
73	Luxembourg	49	60	76	96	118	136
74	Malawi	7	7	7	8	10	11
75	Malaysia	134	234	337	413	512	638
76	Maldives	1	1	1	2	4	5
77	Mali	6	7	9	11	14	16
78	Malta	7	9	12	15	19	21
79	Mauritania	5	5	5	7	10	17
80	Mauritius	7	10	14	17	22	26
81	Mexico	1,463	1,724	2,065	2,465	2,973	3,385
82	Mongolia	13	15	16	18	19	27
83	Morocco	115	135	163	204	275	335
84	Mozambique	5	6	8	11	16	33
85	Myanmar	3	3	5	9	23	51
86	Namibia	12	13	15	18	25	35
87	Nepal	9	12	16	20	26	31
88	Netherlands	1,413	1,616	1,915	2,200	2,501	2,651
89	New Zealand	213	235	275	338	401	458
90	Nicaragua	19	19	21	23	26	31
91	Niger	12	11	11	11	15	19
92	Nigeria	185	177	171	168	216	265
93	Norway	688	730	830	928	1,091	1,224
94	Pakistan	157	196	231	265	315	339
95	Panama	18	22	29	34	49	74
96	Papua New Guinea	7	8	9	11	14	22
97	Paraguay	18	23	26	27	31	36
98	Peru	153	166	192	208	272	363
99	Philippines	181	212	256	298	353	419
100	Poland	426	469	615	740	962	1,152

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
101	Portugal	402	477	595	703	781	784
102	Qatar	28	31	41	75	206	359
103	Republic of Korea	875	1,562	2,297	3,081	3,906	4,548
104	Republic of Moldova	36	37	32	29	28	24
105	Romania	278	278	293	330	444	495
106	Russian Federation	3,185	3,466	3,189	3,127	3,439	3,774
107	Rwanda	3	3	4	4	7	11
108	Saudi Arabia	411	462	521	639	965	1,328
109	Senegal	13	15	19	24	31	38
110	Serbia	63	62	64	71	90	101
111	Sierra Leone	2	3	2	3	4	6
112	Singapore	137	198	299	374	491	613
113	Slovakia	148	160	183	203	234	255
114	Slovenia	77	83	101	124	151	157
115	South Africa	477	497	543	613	766	895
116	Spain	2,368	2,763	3,287	4,103	4,939	5,167
117	Sri Lanka	35	42	52	64	86	113
118	Sudan (former)	6	7	14	34	61	80
119	Swaziland	11	14	16	16	16	16
120	Sweden	954	1,039	1,158	1,313	1,515	1,669
121	Switzerland	935	1,340	1,606	1,714	1,916	2,054
122	Syrian Arab Republic	43	50	57	71	89	94
123	Tajikistan	13	13	12	11	10	10
124	Thailand	310	522	635	710	829	939
125	Togo	8	7	7	7	8	10
126	Trinidad and Tobago	50	47	48	53	54	52
127	Tunisia	66	76	89	104	123	136
128	Turkey	499	664	871	1,053	1,368	1,683
129	Uganda	11	14	18	26	41	56
130	Ukraine	555	599	538	512	519	496
131	United Arab Emirates	282	318	363	427	591	743
132	United Kingdom	3,826	4,439	5,347	6,279	7,115	7,667
133	United Republic of Tanzania	12	21	28	40	66	95
134	United States of America	20,669	24,439	30,540	37,543	43,404	47,411
135	Uruguay	34	39	46	49	58	72
136	Venezuela (Bolivarian Republic of)	496	520	539	546	651	739
137	Viet Nam	24	41	76	131	227	307
138	Yemen	16	19	25	33	48	58
139	Zambia	29	25	25	29	37	50
140	Zimbabwe	3	4	4	5	5	5

Table A3.10 Produced capital per capita (Produced capital per capita in thousands of constant 2005 US$)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	2.1	1.5	1.2	1.0	1.0	1.0
2	Albania	7.8	7.3	7.9	10.4	14.1	16.2
3	Algeria	10.8	10.1	9.9	10.4	11.7	13.1
4	Argentina	14.9	15.2	16.4	16.2	18.7	21.3
5	Armenia	4.3	4.5	4.5	5.3	7.7	8.4
6	Australia	78.1	86.1	99.2	117.5	140.9	160.0
7	Austria	104.8	117.8	134.5	147.1	159.1	166.0
8	Bahrain	49.9	53.8	51.7	49.0	51.7	54.2
9	Bangladesh	0.5	0.6	0.7	0.9	1.3	1.6
10	Barbados	38.3	38.0	41.1	44.4	46.7	46.5
11	Belgium	87.8	99.1	111.9	124.1	135.7	142.9
12	Belize	7.9	9.6	10.0	10.6	10.8	10.7
13	Benin	1.9	1.8	1.8	1.8	1.8	2.0
14	Bolivia (Plurinational State of)	1.9	1.9	2.2	2.3	2.5	3.0
15	Botswana	6.0	8.0	10.4	13.6	17.3	21.4
16	Brazil	12.6	12.7	13.2	13.3	14.6	16.7
17	Bulgaria	5.5	5.4	6.0	8.6	13.3	15.7
18	Burundi	0.4	0.4	0.4	0.4	0.4	0.4
19	Cambodia	0.4	0.4	0.5	0.7	1.0	1.4
20	Cameroon	2.7	2.4	2.3	2.3	2.5	2.7
21	Canada	72.3	78.2	87.3	99.9	114.7	125.7
22	Central African Republic	1.3	1.2	1.1	1.0	0.9	0.8
23	Chile	6.9	9.1	12.3	15.4	20.7	26.2
24	China	1.4	2.0	3.0	4.9	8.6	13.2
25	Colombia	8.1	9.0	9.5	9.7	11.5	14.0
26	Congo	6.5	6.9	6.5	6.2	7.3	10.0
27	Costa Rica	7.3	8.1	9.3	10.8	13.2	15.8
28	Côte d'Ivoire	12.1	10.2	9.7	7.6	6.0	4.6
29	Croatia	19.8	20.3	24.8	30.4	38.4	43.1
30	Cuba	10.5	9.7	9.1	8.7	9.3	9.9
31	Cyprus	51.7	56.4	56.8	58.8	66.3	64.4
32	Czech Republic	37.0	40.4	47.1	54.6	62.9	68.3
33	Democratic Republic of the Congo	1.4	1.1	0.9	0.7	0.7	0.7
34	Denmark	100.9	111.4	129.8	149.3	168.3	176.7
35	Dominican Republic	6.5	7.4	9.8	11.6	14.1	15.7
36	Ecuador	8.6	8.7	8.4	8.8	9.7	11.3
37	Egypt	1.7	1.9	2.2	2.5	3.2	3.4
38	El Salvador	4.6	5.0	5.8	6.6	7.4	8.0
39	Estonia	19.6	21.9	25.2	33.7	44.5	51.9
40	Fiji	7.7	8.0	8.6	9.8	10.3	10.7
41	Finland	108.1	111.5	123.5	138.5	152.6	158.8

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
42	France	88.0	97.9	107.5	117.9	129.2	135.6
43	Gabon	43.8	38.9	36.8	33.8	32.1	32.5
44	Gambia	0.7	0.8	0.9	1.3	1.4	1.4
45	Germany	90.8	101.9	114.1	123.6	135.1	145.1
46	Ghana	2.0	1.9	1.9	2.0	2.4	3.1
47	Greece	56.8	58.3	64.1	73.9	84.5	83.2
48	Guatemala	4.6	4.6	5.0	5.3	5.6	5.6
49	Guyana	4.7	5.7	6.5	7.1	8.1	8.9
50	Haiti	1.2	1.2	1.3	1.6	1.8	1.9
51	Honduras	3.2	3.5	4.1	4.5	5.1	5.4
52	Hungary	27.7	29.1	32.5	38.1	43.7	46.8
53	Iceland	123.0	126.5	142.4	164.7	182.6	179.6
54	India	1.0	1.2	1.5	2.0	2.9	3.9
55	Indonesia	1.7	2.5	3.1	3.6	4.4	5.3
56	Iran (Islamic Republic of)	9.9	9.9	9.9	11.3	13.3	14.0
57	Iraq	3.4	2.7	2.0	2.1	2.5	3.2
58	Ireland	81.0	88.7	110.1	139.3	161.3	173.1
59	Israel	43.6	48.7	55.5	58.3	62.3	67.7
60	Italy	79.2	88.3	98.2	109.1	117.1	116.3
61	Jamaica	14.4	16.1	16.9	18.5	19.5	19.8
62	Japan	108.2	128.5	144.0	153.4	159.7	164.7
63	Jordan	7.8	7.5	7.8	8.0	8.4	8.7
64	Kazakhstan	15.9	18.0	17.5	17.5	20.0	22.3
65	Kenya	1.5	1.4	1.4	1.5	1.7	2.0
66	Kuwait	41.6	58.2	55.2	56.0	62.7	66.2
67	Kyrgyzstan	2.0	2.0	1.8	1.7	1.9	2.2
68	Lao People's Democratic Republic	0.5	0.7	0.9	1.3	2.1	2.9
69	Latvia	12.4	13.0	15.0	21.0	30.7	36.5
70	Lesotho	2.3	3.1	3.7	3.8	4.0	4.4
71	Liberia	1.4	1.2	0.9	0.7	0.8	0.9
72	Lithuania	18.2	18.4	19.9	23.9	31.4	36.7
73	Luxembourg	128.6	147.2	174.4	206.1	232.0	245.0
74	Malawi	0.8	0.8	0.7	0.6	0.7	0.6
75	Malaysia	7.4	11.3	14.4	16.0	18.2	21.4
76	Maldives	2.9	3.8	5.2	7.4	11.1	13.5
77	Mali	0.7	0.8	0.8	0.8	0.9	0.9
78	Malta	18.4	24.3	32.3	38.3	46.4	50.0
79	Mauritania	2.4	2.1	1.8	2.2	2.8	4.2
80	Mauritius	7.1	9.2	11.5	14.1	17.9	20.7
81	Mexico	17.1	18.3	20.1	22.5	25.1	27.0
82	Mongolia	6.1	6.5	6.9	7.3	7.0	9.2
83	Morocco	4.6	5.0	5.6	6.7	8.6	9.9
84	Mozambique	0.3	0.4	0.4	0.5	0.7	1.2

(*Continued*)

Table A3.10 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
85	Myanmar	0.1	0.1	0.1	0.2	0.4	1.0
86	Namibia	8.7	7.9	7.9	9.0	11.6	14.6
87	Nepal	0.5	0.6	0.7	0.8	1.0	1.1
88	Netherlands	94.5	104.5	120.3	134.8	150.5	157.2
89	New Zealand	63.9	64.0	71.3	81.7	92.2	101.5
90	Nicaragua	4.6	4.1	4.2	4.3	4.6	5.1
91	Niger	1.5	1.2	1.0	0.8	0.9	1.0
92	Nigeria	1.9	1.6	1.4	1.2	1.4	1.5
93	Norway	162.1	167.4	184.7	200.8	223.1	238.2
94	Pakistan	1.5	1.6	1.7	1.7	1.9	1.8
95	Panama	7.3	8.1	9.7	10.3	13.5	19.1
96	Papua New Guinea	1.8	1.7	1.7	1.8	2.1	2.9
97	Paraguay	4.3	4.8	4.8	4.7	4.9	5.5
98	Peru	7.0	6.9	7.4	7.5	9.3	11.7
99	Philippines	2.9	3.0	3.3	3.5	3.8	4.2
100	Poland	11.2	12.1	16.1	19.4	25.3	30.3
101	Portugal	40.2	47.6	57.8	67.0	73.9	75.4
102	Qatar	58.6	61.4	69.1	89.5	116.4	165.2
103	Republic of Korea	20.4	34.6	48.9	64.0	79.1	90.2
104	Republic of Moldova	9.7	10.0	8.8	8.1	7.9	6.7
105	Romania	12.0	12.3	13.0	15.5	21.9	24.9
106	Russian Federation	21.5	23.4	21.8	21.8	24.1	26.2
107	Rwanda	0.4	0.5	0.4	0.5	0.7	0.9
108	Saudi Arabia	25.1	24.5	24.4	25.8	34.4	43.0
109	Senegal	1.7	1.7	1.9	2.1	2.4	2.6
110	Serbia	8.2	8.2	8.5	9.6	12.4	14.2
111	Sierra Leone	0.6	0.7	0.6	0.5	0.6	0.9
112	Singapore	44.8	56.2	74.1	87.8	96.8	112.1
113	Slovakia	27.9	29.8	33.9	37.8	43.4	47.0
114	Slovenia	38.6	41.9	50.8	61.9	73.5	76.3
115	South Africa	13.6	12.7	12.3	13.0	15.1	16.6
116	Spain	61.0	70.1	81.6	94.0	106.0	111.2
117	Sri Lanka	2.1	2.3	2.8	3.3	4.3	5.4
118	Sudan (former)	0.3	0.3	0.5	1.1	1.7	2.0
119	Swaziland	12.2	14.7	14.9	14.9	13.6	12.5
120	Sweden	111.4	117.7	130.5	145.4	161.5	172.2
121	Switzerland	139.2	190.3	223.5	230.4	244.8	250.8
122	Syrian Arab Republic	3.4	3.5	3.5	3.9	4.3	5.0
123	Tajikistan	2.4	2.3	2.0	1.6	1.4	1.2
124	Thailand	5.5	8.8	10.1	10.8	12.4	13.9
125	Togo	2.0	1.6	1.4	1.3	1.2	1.4
126	Trinidad and Tobago	40.8	37.3	37.5	41.1	40.6	38.1
127	Tunisia	8.1	8.5	9.3	10.3	11.7	12.4
128	Turkey	9.2	11.4	13.8	15.5	18.9	21.7

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
129	Uganda	0.6	0.7	0.8	0.9	1.2	1.5
130	Ukraine	10.7	11.6	10.9	10.9	11.3	10.9
131	United Arab Emirates	155.7	135.2	119.0	95.2	70.9	81.7
132	United Kingdom	66.8	76.5	90.8	104.0	113.4	118.7
133	United Republic of Tanzania	0.5	0.7	0.8	1.0	1.4	1.8
134	United States of America	82.8	91.8	108.2	127.0	140.3	148.7
135	Uruguay	10.9	12.1	13.9	14.7	17.3	20.9
136	Venezuela (Bolivarian Republic of)	24.9	23.4	22.0	20.4	22.4	24.1
137	Viet Nam	0.4	0.6	1.0	1.6	2.6	3.4
138	Yemen	1.4	1.2	1.4	1.6	2.0	2.2
139	Zambia	3.5	2.7	2.3	2.4	2.7	3.2
140	Zimbabwe	0.3	0.3	0.3	0.4	0.3	0.3

Table A3.11 Produced capital growth (Produced capital change (%) with respect to base year 1990)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	−0.5%	−1.7%	−0.8%	2.6%	6.8%
2	Albania	−1.9%	−1.2%	5.3%	12.6%	22.5%
3	Algeria	0.8%	2.5%	5.4%	10.7%	22.2%
4	Argentina	1.8%	5.6%	6.7%	12.0%	23.3%
5	Armenia	−0.8%	−2.0%	1.3%	10.8%	18.6%
6	Australia	3.2%	9.3%	15.8%	23.5%	41.2%
7	Austria	3.1%	7.6%	10.7%	13.4%	20.8%
8	Bahrain	4.1%	8.7%	14.5%	27.4%	43.9%
9	Bangladesh	4.5%	14.4%	24.9%	37.2%	69.3%
10	Barbados	0.2%	2.7%	5.1%	7.0%	9.7%
11	Belgium	2.8%	7.0%	10.4%	14.0%	22.4%
12	Belize	6.2%	13.9%	19.6%	24.0%	36.6%
13	Benin	2.2%	6.9%	11.6%	16.6%	31.3%
14	Bolivia (Plurinational State of)	2.8%	10.2%	13.1%	18.3%	35.3%
15	Botswana	8.7%	21.5%	32.1%	43.6%	78.6%
16	Brazil	1.7%	5.1%	7.2%	11.2%	21.8%
17	Bulgaria	−0.8%	0.8%	8.6%	20.0%	33.7%
18	Burundi	−0.6%	−0.3%	3.1%	8.7%	23.6%
19	Cambodia	2.4%	10.6%	23.2%	39.7%	76.0%
20	Cameroon	0.8%	2.8%	7.0%	11.7%	23.3%
21	Canada	2.7%	7.5%	12.6%	18.0%	30.5%
22	Central African Republic	1.7%	1.6%	0.9%	0.9%	0.1%
23	Chile	7.2%	19.5%	28.4%	40.1%	72.1%

(*Continued*)

Table A3.11 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
24	China	9.0%	25.6%	43.1%	65.5%	127.1%
25	Colombia	4.1%	8.4%	11.0%	17.7%	34.2%
26	Congo	3.9%	6.8%	8.5%	17.4%	42.5%
27	Costa Rica	4.7%	12.6%	19.3%	27.5%	48.9%
28	Côte d'Ivoire	−0.1%	2.1%	−1.6%	−4.9%	−11.4%
29	Croatia	0.0%	3.8%	9.4%	15.8%	24.6%
30	Cuba	−1.0%	−2.4%	−3.2%	−1.2%	0.7%
31	Cyprus	4.0%	7.8%	11.2%	16.6%	23.3%
32	Czech Republic	1.8%	6.0%	9.9%	14.6%	23.4%
33	Democratic Republic of the Congo	−1.2%	−4.2%	−5.5%	−2.9%	1.4%
34	Denmark	2.4%	7.5%	11.8%	15.8%	24.3%
35	Dominican Republic	4.3%	15.5%	22.8%	31.3%	51.6%
36	Ecuador	2.4%	4.9%	8.3%	13.4%	27.0%
37	Egypt	4.2%	12.2%	18.6%	28.6%	47.8%
38	El Salvador	3.2%	8.8%	13.2%	17.0%	26.9%
39	Estonia	0.4%	3.4%	10.3%	17.8%	30.4%
40	Fiji	2.1%	5.5%	9.4%	12.0%	19.3%
41	Finland	1.1%	4.3%	7.7%	11.0%	17.2%
42	France	2.5%	6.2%	9.7%	13.0%	20.5%
43	Gabon	0.3%	2.1%	2.8%	4.4%	9.6%
44	Gambia	8.3%	17.4%	32.7%	41.0%	65.7%
45	Germany	2.9%	6.8%	9.1%	11.3%	17.7%
46	Ghana	1.6%	4.8%	9.6%	18.4%	41.4%
47	Greece	1.2%	4.6%	8.8%	12.9%	16.1%
48	Guatemala	2.6%	8.7%	13.7%	18.3%	29.1%
49	Guyana	3.8%	9.1%	11.5%	15.4%	25.7%
50	Haiti	2.0%	8.5%	15.1%	20.5%	34.5%
51	Honduras	4.9%	13.1%	18.6%	25.4%	40.7%
52	Hungary	0.9%	3.7%	7.5%	11.0%	17.1%
53	Iceland	1.5%	6.3%	11.7%	16.7%	23.3%
54	India	5.7%	15.8%	26.8%	42.9%	79.9%
55	Indonesia	9.4%	20.8%	27.2%	35.9%	63.1%
56	Iran (Islamic Republic of)	1.4%	4.0%	9.2%	15.4%	25.2%
57	Iraq	−2.2%	−5.7%	−2.0%	6.3%	23.0%
58	Ireland	2.4%	10.2%	19.5%	26.8%	41.1%
59	Israel	5.9%	14.5%	18.8%	23.7%	39.9%
60	Italy	2.2%	5.6%	8.9%	11.5%	16.3%
61	Jamaica	3.0%	6.3%	9.3%	11.2%	16.1%
62	Japan	3.8%	8.1%	10.1%	11.2%	16.2%
63	Jordan	4.3%	9.1%	13.0%	20.2%	35.2%
64	Kazakhstan	1.8%	0.1%	0.6%	5.9%	14.2%
65	Kenya	2.1%	6.4%	10.8%	19.0%	38.0%
66	Kuwait	2.1%	5.6%	10.3%	22.3%	42.6%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
67	Kyrgyzstan	0.8%	0.3%	0.5%	4.9%	13.1%
68	Lao People's Democratic Republic	10.7%	25.9%	38.9%	59.7%	113.7%
69	Latvia	−0.6%	1.7%	9.1%	18.0%	30.0%
70	Lesotho	8.2%	17.5%	19.3%	21.7%	36.5%
71	Liberia	−3.3%	−2.3%	−4.9%	0.7%	9.1%
72	Lithuania	−0.2%	0.8%	4.2%	9.6%	16.9%
73	Luxembourg	4.2%	11.6%	18.2%	24.4%	40.5%
74	Malawi	0.5%	0.5%	1.4%	8.9%	13.5%
75	Malaysia	11.8%	26.0%	32.5%	39.8%	68.3%
76	Maldives	9.2%	24.3%	39.5%	59.4%	105.2%
77	Mali	4.5%	10.4%	15.6%	22.8%	38.4%
78	Malta	6.6%	17.2%	24.1%	31.0%	48.5%
79	Mauritania	0.3%	0.6%	9.8%	20.6%	51.4%
80	Mauritius	6.6%	16.2%	23.5%	31.7%	51.7%
81	Mexico	3.3%	9.0%	13.9%	19.4%	32.3%
82	Mongolia	2.2%	5.3%	8.2%	9.3%	25.8%
83	Morocco	3.2%	9.1%	15.4%	24.2%	42.6%
84	Mozambique	3.7%	13.2%	22.8%	36.5%	91.4%
85	Myanmar	4.9%	18.6%	36.1%	71.2%	168.8%
86	Namibia	1.1%	5.2%	10.3%	19.9%	41.5%
87	Nepal	6.1%	15.3%	22.4%	29.9%	50.9%
88	Netherlands	2.7%	7.9%	11.7%	15.4%	23.3%
89	New Zealand	2.0%	6.6%	12.2%	17.2%	29.1%
90	Nicaragua	−0.1%	2.7%	5.2%	8.3%	17.2%
91	Niger	−1.1%	−1.9%	−0.4%	6.1%	17.7%
92	Nigeria	−0.9%	−2.0%	−2.5%	3.9%	12.7%
93	Norway	1.2%	4.8%	7.8%	12.2%	21.2%
94	Pakistan	4.6%	10.2%	14.0%	19.1%	29.3%
95	Panama	4.4%	13.1%	17.4%	28.4%	60.1%
96	Papua New Guinea	1.9%	5.8%	11.2%	18.5%	44.3%
97	Paraguay	4.5%	8.8%	10.3%	13.9%	25.1%
98	Peru	1.7%	5.8%	8.1%	15.5%	33.5%
99	Philippines	3.3%	9.1%	13.3%	18.2%	32.4%
100	Poland	1.9%	9.7%	14.8%	22.6%	39.4%
101	Portugal	3.5%	10.3%	15.0%	18.1%	25.0%
102	Qatar	2.0%	10.1%	28.0%	64.7%	134.2%
103	Republic of Korea	12.3%	27.3%	37.0%	45.3%	73.2%
104	Republic of Moldova	0.4%	−2.8%	−5.3%	−6.0%	−12.8%
105	Romania	0.0%	1.3%	4.4%	12.4%	21.2%
106	Russian Federation	1.7%	0.0%	−0.5%	1.9%	5.8%
107	Rwanda	1.2%	4.2%	10.1%	23.5%	51.9%
108	Saudi Arabia	2.4%	6.1%	11.7%	23.8%	47.8%
109	Senegal	2.9%	9.3%	15.9%	24.0%	43.3%
110	Serbia	0.0%	0.4%	3.3%	9.6%	17.4%

(*Continued*)

Table A3.11 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
111	Sierra Leone	1.3%	−0.1%	1.7%	8.9%	31.3%
112	Singapore	7.7%	21.6%	28.7%	37.7%	64.9%
113	Slovakia	1.6%	5.5%	8.3%	12.2%	19.9%
114	Slovenia	1.5%	6.9%	12.5%	18.2%	26.8%
115	South Africa	0.8%	3.3%	6.5%	12.6%	23.3%
116	Spain	3.1%	8.5%	14.7%	20.2%	29.7%
117	Sri Lanka	3.6%	10.1%	15.8%	24.8%	47.4%
118	Sudan (former)	3.2%	24.9%	55.5%	79.3%	138.8%
119	Swaziland	6.1%	10.9%	11.9%	11.4%	14.8%
120	Sweden	1.7%	5.0%	8.3%	12.3%	20.5%
121	Switzerland	7.5%	14.5%	16.4%	19.6%	30.0%
122	Syrian Arab Republic	3.2%	7.8%	13.7%	20.3%	30.3%
123	Tajikistan	0.6%	−1.6%	−4.2%	−5.5%	−8.4%
124	Thailand	11.0%	19.7%	23.0%	27.9%	44.7%
125	Togo	−1.5%	−2.5%	−1.7%	0.5%	8.7%
126	Trinidad and Tobago	−1.2%	−1.2%	1.7%	2.0%	1.1%
127	Tunisia	2.9%	7.5%	11.8%	16.9%	27.2%
128	Turkey	5.9%	14.9%	20.5%	28.6%	49.9%
129	Uganda	4.4%	13.7%	23.9%	38.6%	72.4%
130	Ukraine	1.5%	−0.8%	−2.0%	−1.6%	−3.7%
131	United Arab Emirates	2.4%	6.5%	10.9%	20.3%	38.1%
132	United Kingdom	3.0%	8.7%	13.2%	16.8%	26.1%
133	United Republic of Tanzania	12.5%	24.3%	36.0%	53.5%	100.3%
134	United States of America	3.4%	10.3%	16.1%	20.4%	31.9%
135	Uruguay	2.8%	8.0%	9.5%	14.4%	28.2%
136	Venezuela (Bolivarian Republic of)	1.0%	2.1%	2.5%	7.1%	14.2%
137	Viet Nam	11.6%	33.9%	53.5%	76.0%	135.1%
138	Yemen	2.7%	11.1%	18.8%	31.0%	52.2%
139	Zambia	−2.4%	−3.6%	0.7%	6.9%	20.3%
140	Zimbabwe	3.3%	6.6%	9.8%	8.9%	14.0%

Table A3.12 Produced capital per capita growth (Produced capital per capita change (%) with respect to base year 1990)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	−6.8%	−13.0%	−16.8%	−16.8%	−22.5%
2	Albania	−1.3%	0.3%	7.6%	16.1%	27.9%
3	Algeria	−1.3%	−2.2%	−1.0%	2.0%	6.7%
4	Argentina	0.4%	2.4%	2.1%	5.8%	12.6%
5	Armenia	1.1%	1.5%	5.5%	15.9%	25.2%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
6	Australia	2.0%	6.2%	10.8%	15.9%	27.0%
7	Austria	2.4%	6.4%	8.8%	11.0%	16.6%
8	Bahrain	1.5%	0.9%	−0.5%	0.9%	2.8%
9	Bangladesh	2.2%	8.4%	15.9%	25.5%	47.8%
10	Barbados	−0.2%	1.8%	3.8%	5.1%	6.7%
11	Belgium	2.4%	6.3%	9.0%	11.5%	17.6%
12	Belize	4.1%	6.3%	7.9%	8.3%	10.7%
13	Benin	−1.4%	−1.5%	−1.3%	−0.7%	2.2%
14	Bolivia (Plurinational State of)	0.8%	4.9%	5.3%	7.9%	17.2%
15	Botswana	5.9%	14.7%	22.6%	30.1%	52.4%
16	Brazil	0.1%	1.1%	1.3%	3.7%	9.7%
17	Bulgaria	−0.1%	2.4%	11.9%	25.0%	42.3%
18	Burundi	−2.7%	−4.8%	−5.4%	−4.6%	−0.7%
19	Cambodia	−1.1%	2.5%	11.7%	24.3%	47.4%
20	Cameroon	−2.0%	−4.1%	−3.4%	−2.2%	−0.2%
21	Canada	1.6%	4.8%	8.4%	12.2%	20.2%
22	Central African Republic	−0.9%	−4.3%	−7.0%	−9.0%	−15.0%
23	Chile	5.5%	15.3%	22.0%	31.4%	55.6%
24	China	7.7%	22.3%	38.2%	58.8%	113.6%
25	Colombia	2.3%	4.1%	4.7%	9.4%	20.2%
26	Congo	1.2%	−0.1%	−1.4%	2.8%	15.3%
27	Costa Rica	2.1%	6.1%	10.2%	15.9%	29.0%
28	Côte d'Ivoire	−3.5%	−5.4%	−11.0%	−16.1%	−27.5%
29	Croatia	0.5%	5.8%	11.4%	18.1%	29.7%
30	Cuba	−1.6%	−3.6%	−4.7%	−2.8%	−1.7%
31	Cyprus	1.8%	2.4%	3.3%	6.4%	7.6%
32	Czech Republic	1.8%	6.2%	10.2%	14.2%	22.7%
33	Democratic Republic of the Congo	−4.9%	−11.5%	−16.0%	−17.1%	−21.3%
34	Denmark	2.0%	6.5%	10.3%	13.6%	20.5%
35	Dominican Republic	2.4%	10.6%	15.3%	21.2%	33.9%
36	Ecuador	0.1%	−0.5%	0.6%	3.1%	9.6%
37	Egypt	2.1%	6.9%	10.4%	17.1%	26.7%
38	El Salvador	1.9%	6.0%	9.8%	13.0%	20.7%
39	Estonia	2.2%	6.4%	14.5%	22.7%	38.3%
40	Fiji	0.9%	2.7%	6.1%	7.5%	11.7%
41	Finland	0.6%	3.4%	6.4%	9.0%	13.7%
42	France	2.1%	5.1%	7.6%	10.1%	15.5%
43	Gabon	−2.3%	−4.3%	−6.2%	−7.4%	−9.5%
44	Gambia	5.1%	9.1%	18.5%	21.0%	29.4%
45	Germany	2.3%	5.9%	8.0%	10.5%	16.9%
46	Ghana	−1.1%	−1.6%	−0.4%	4.3%	15.5%
47	Greece	0.5%	3.1%	6.8%	10.4%	13.6%

(*Continued*)

Table A3.12 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
48	Guatemala	0.1%	2.3%	3.8%	5.0%	7.1%
49	Guyana	3.6%	8.3%	10.7%	14.1%	23.3%
50	Haiti	0.0%	3.5%	7.7%	10.6%	17.8%
51	Honduras	2.2%	6.5%	9.0%	12.7%	19.7%
52	Hungary	1.0%	4.1%	8.3%	12.0%	19.1%
53	Iceland	0.6%	3.7%	7.6%	10.4%	13.4%
54	India	3.6%	10.4%	18.4%	31.1%	57.6%
55	Indonesia	7.6%	16.2%	20.3%	26.5%	45.7%
56	Iran (Islamic Republic of)	0.0%	−0.1%	3.3%	7.6%	12.2%
57	Iraq	−5.0%	−12.5%	−12.1%	−7.8%	−2.7%
58	Ireland	1.8%	8.0%	14.5%	18.8%	28.8%
59	Israel	2.3%	6.2%	7.6%	9.3%	15.8%
60	Italy	2.2%	5.5%	8.3%	10.3%	13.7%
61	Jamaica	2.3%	4.1%	6.6%	8.0%	11.2%
62	Japan	3.5%	7.4%	9.1%	10.2%	15.1%
63	Jordan	−0.8%	−0.1%	0.7%	1.8%	3.8%
64	Kazakhstan	2.5%	2.5%	2.5%	6.0%	12.1%
65	Kenya	−1.1%	−0.8%	0.0%	3.9%	11.2%
66	Kuwait	6.9%	7.3%	7.7%	10.7%	16.7%
67	Kyrgyzstan	0.0%	−2.4%	−3.5%	−0.6%	2.8%
68	Lao People's Democratic Republic	7.7%	18.8%	28.8%	45.0%	83.6%
69	Latvia	0.8%	4.7%	14.0%	25.3%	43.2%
70	Lesotho	6.2%	13.2%	13.9%	14.9%	24.4%
71	Liberia	−3.1%	−9.8%	−14.8%	−14.0%	−14.7%
72	Lithuania	0.2%	2.2%	7.0%	14.5%	26.3%
73	Luxembourg	2.8%	7.9%	12.5%	15.9%	24.0%
74	Malawi	−0.3%	−3.8%	−6.0%	−2.7%	−6.2%
75	Malaysia	9.0%	18.3%	21.5%	25.4%	42.7%
76	Maldives	5.8%	16.1%	26.6%	40.0%	67.4%
77	Mali	1.8%	3.3%	4.2%	6.2%	9.6%
78	Malta	5.7%	15.0%	20.1%	25.9%	39.5%
79	Mauritania	−2.5%	−6.5%	−1.8%	4.5%	20.9%
80	Mauritius	5.4%	12.9%	19.0%	26.3%	43.1%
81	Mexico	1.3%	4.1%	7.1%	10.1%	16.5%
82	Mongolia	1.1%	2.9%	4.3%	3.5%	14.3%
83	Morocco	1.5%	5.1%	9.8%	16.6%	28.8%
84	Mozambique	0.1%	4.7%	9.5%	17.5%	51.0%
85	Myanmar	3.6%	14.9%	30.3%	62.5%	148.1%
86	Namibia	−2.0%	−2.3%	0.9%	7.4%	18.7%
87	Nepal	3.3%	8.7%	13.4%	18.7%	31.7%
88	Netherlands	2.0%	6.2%	9.3%	12.4%	18.5%
89	New Zealand	0.0%	2.8%	6.3%	9.6%	16.7%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
90	Nicaragua	−2.2%	−2.1%	−1.4%	−0.1%	3.5%
91	Niger	−4.4%	−10.1%	−12.8%	−11.5%	−12.3%
92	Nigeria	−3.3%	−8.0%	−11.3%	−8.6%	−8.3%
93	Norway	0.6%	3.3%	5.5%	8.3%	13.7%
94	Pakistan	1.9%	3.5%	4.3%	6.2%	7.9%
95	Panama	2.2%	7.4%	9.1%	16.7%	37.9%
96	Papua New Guinea	−0.7%	−0.7%	1.1%	4.6%	18.7%
97	Paraguay	2.0%	2.7%	1.9%	3.4%	8.0%
98	Peru	−0.3%	1.4%	1.9%	7.2%	18.8%
99	Philippines	0.8%	3.0%	4.4%	6.8%	13.2%
100	Poland	1.7%	9.5%	14.8%	22.7%	39.5%
101	Portugal	3.4%	9.5%	13.6%	16.4%	23.3%
102	Qatar	0.9%	4.2%	11.2%	18.7%	41.3%
103	Republic of Korea	11.1%	24.4%	33.1%	40.3%	64.1%
104	Republic of Moldova	0.5%	−2.4%	−4.6%	−5.1%	−11.6%
105	Romania	0.5%	2.2%	6.6%	16.3%	27.6%
106	Russian Federation	1.7%	0.3%	0.4%	2.9%	6.9%
107	Rwanda	5.5%	1.7%	4.3%	13.2%	30.9%
108	Saudi Arabia	−0.5%	−0.8%	0.7%	8.1%	19.6%
109	Senegal	−0.1%	2.1%	4.8%	8.2%	14.7%
110	Serbia	−0.1%	0.6%	3.8%	10.7%	19.8%
111	Sierra Leone	1.8%	−0.9%	−4.6%	−1.0%	12.1%
112	Singapore	4.6%	13.4%	18.3%	21.2%	35.7%
113	Slovakia	1.4%	5.0%	8.0%	11.7%	19.0%
114	Slovenia	1.6%	7.1%	12.5%	17.4%	25.4%
115	South Africa	−1.3%	−2.3%	−1.1%	2.7%	6.9%
116	Spain	2.8%	7.6%	11.4%	14.8%	22.2%
117	Sri Lanka	2.4%	7.6%	12.2%	19.8%	38.1%
118	Sudan (former)	−1.1%	14.8%	38.3%	54.7%	90.6%
119	Swaziland	3.8%	5.2%	5.2%	2.7%	0.9%
120	Sweden	1.1%	4.0%	6.9%	9.7%	15.6%
121	Switzerland	6.5%	12.6%	13.4%	15.2%	21.7%
122	Syrian Arab Republic	0.3%	0.7%	3.5%	6.0%	13.7%
123	Tajikistan	−1.1%	−5.4%	−10.0%	−13.6%	−21.1%
124	Thailand	10.0%	16.6%	18.5%	22.7%	36.3%
125	Togo	−3.9%	−8.4%	−10.8%	−11.8%	−11.9%
126	Trinidad and Tobago	−1.8%	−2.1%	0.2%	−0.1%	−2.3%
127	Tunisia	1.0%	3.4%	6.2%	9.6%	15.2%
128	Turkey	4.2%	10.5%	13.8%	19.6%	32.9%
129	Uganda	1.1%	5.2%	9.9%	18.0%	33.1%
130	Ukraine	1.7%	0.6%	0.4%	1.4%	0.7%
131	United Arab Emirates	−2.8%	−6.5%	−11.6%	−17.8%	−19.3%
132	United Kingdom	2.7%	8.0%	11.7%	14.1%	21.1%
133	United Republic of Tanzania	8.9%	15.6%	22.2%	32.6%	58.1%

(*Continued*)

Table A3.12 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
134	United States of America	2.1%	6.9%	11.3%	14.1%	21.5%
135	Uruguay	2.1%	6.3%	7.7%	12.1%	24.2%
136	Venezuela (Bolivarian Republic of)	−1.2%	−3.1%	−4.9%	−2.6%	−1.2%
137	Viet Nam	9.7%	28.6%	45.2%	64.3%	111.4%
138	Yemen	−2.2%	0.6%	3.9%	10.5%	17.2%
139	Zambia	−4.9%	−9.7%	−8.7%	−6.5%	−3.4%
140	Zimbabwe	1.1%	2.1%	4.1%	1.4%	0.6%

Table A3.13 Natural capital (Natural capital in billions of constant 2005 US$)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	12	12	12	12	12	12
2	Albania	20	19	19	19	19	19
3	Algeria	619	577	530	475	413	366
4	Argentina	867	848	825	819	820	799
5	Armenia	3	3	2	2	5	5
6	Australia	3,341	3,302	3,247	3,175	3,034	2,907
7	Austria	58	59	61	61	60	57
8	Bahrain	8	6	5	4	3	2
9	Bangladesh	62	58	56	54	54	51
10	Barbados	1	1	1	1	1	0
11	Belgium	4	5	6	6	7	6
12	Belize	14	14	13	13	13	13
13	Benin	38	36	33	32	30	30
14	Bolivia (Plurinational State of)	737	724	710	694	676	659
15	Botswana	67	64	61	59	56	54
16	Brazil	7,543	7,382	7,198	7,037	6,840	6,786
17	Bulgaria	82	80	78	78	79	56
18	Burundi	5	5	4	4	4	4
19	Cambodia	248	233	217	201	189	180
20	Cameroon	246	233	220	208	200	53
21	Canada	5,516	5,436	5,348	5,247	5,143	4,103
22	Central African Republic	211	209	208	207	205	205
23	Chile	351	338	327	323	310	305
24	China	9,552	9,417	9,094	8,640	8,247	7,882
25	Colombia	997	970	946	909	878	308
26	Congo	301	297	291	285	282	277
27	Costa Rica	52	48	45	46	47	62
28	Côte d'Ivoire	62	73	84	84	84	83
29	Croatia	23	25	25	26	26	25
30	Cuba	31	33	35	36	35	33

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
31	Cyprus	1	1	1	1	1	1
32	Czech Republic	81	77	71	66	61	57
33	Democratic Republic of the Congo	1,320	1,307	1,294	1,281	1,268	1,258
34	Denmark	77	69	60	49	41	34
35	Dominican Republic	37	37	36	35	35	34
36	Ecuador	335	319	301	283	264	263
37	Egypt	219	199	176	156	135	117
38	El Salvador	9	9	9	9	9	9
39	Estonia	20	15	10	22	21	21
40	Fiji	8	8	8	8	8	8
41	Finland	166	169	171	166	161	155
42	France	276	276	277	279	278	275
43	Gabon	1,123	1,117	1,109	1,103	1,098	1,098
44	Gambia	5	5	5	4	4	4
45	Germany	1,633	1,574	1,528	1,485	1,442	1,413
46	Ghana	78	74	71	66	62	79
47	Greece	249	243	228	219	212	204
48	Guatemala	109	103	95	89	81	86
49	Guyana	203	203	202	202	202	233
50	Haiti	8	7	7	6	5	5
51	Honduras	107	97	85	78	71	65
52	Hungary	69	66	63	61	58	57
53	Iceland	106	104	102	100	99	98
54	India	3,605	3,552	3,489	3,426	3,344	3,242
55	Indonesia	2,974	2,811	2,684	2,587	2,446	2,302
56	Iran (Islamic Republic of)	4,768	4,682	4,577	4,437	4,314	4,116
57	Iraq	1,541	1,528	1,504	1,470	1,434	1,397
58	Ireland	43	35	33	32	32	30
59	Israel	15	14	14	14	13	13
60	Italy	355	345	356	355	362	335
61	Jamaica	32	33	32	32	30	30
62	Japan	567	548	531	509	501	458
63	Jordan	8	8	7	7	7	7
64	Kazakhstan	930	1,015	998	973	937	904
65	Kenya	46	46	44	44	43	47
66	Kuwait	1,606	1,575	1,524	1,472	1,409	1,358
67	Kyrgyzstan	16	16	16	17	18	18
68	Lao People's Democratic Republic	150	147	145	142	140	152
69	Latvia	21	22	23	24	27	25
70	Lesotho	0	0	0	0	0	0
71	Liberia	37	36	35	34	33	32
72	Lithuania	17	17	18	18	18	17
73	Luxembourg	1	1	1	1	1	1

(*Continued*)

Table A3.13 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
74	Malawi	25	24	23	23	22	22
75	Malaysia	628	597	558	513	471	461
76	Maldives	3	3	3	3	2	2
77	Mali	75	75	74	72	69	46
78	Malta	0	0	0	0	0	0
79	Mauritania	20	18	17	15	15	13
80	Mauritius	2	2	2	2	2	2
81	Mexico	1,151	1,106	1,055	1,002	952	948
82	Mongolia	221	213	218	202	198	201
83	Morocco	84	82	79	77	75	75
84	Mozambique	272	267	262	258	371	367
85	Myanmar	253	237	220	203	188	175
86	Namibia	54	56	58	60	66	64
87	Nepal	222	202	182	170	170	170
88	Netherlands	157	138	120	105	89	75
89	New Zealand	1,609	1,595	1,592	1,520	1,889	1,713
90	Nicaragua	42	41	39	37	34	36
91	Niger	15	13	12	12	11	11
92	Nigeria	953	917	868	811	742	697
93	Norway	584	533	452	369	298	250
94	Pakistan	1,448	1,302	1,156	1,006	859	747
95	Panama	46	44	42	41	40	47
96	Papua New Guinea	327	318	309	300	292	398
97	Paraguay	115	110	112	108	106	100
98	Peru	1,332	1,305	1,287	1,263	1,234	1,294
99	Philippines	142	141	142	143	149	140
100	Poland	545	524	504	480	461	447
101	Portugal	62	63	65	63	62	58
102	Qatar	452	443	430	411	383	351
103	Republic of Korea	418	418	426	437	440	394
104	Republic of Moldova	6	6	7	7	7	1
105	Romania	218	209	201	191	188	184
106	Russian Federation	10,921	12,965	12,694	12,390	12,079	11,754
107	Rwanda	3	2	3	3	4	4
108	Saudi Arabia	5,882	6,299	6,090	5,872	5,621	5,547
109	Senegal	82	78	75	73	71	71
110	Serbia	25	26	27	30	42	36
111	Sierra Leone	20	19	19	18	16	16
112	Singapore	0	0	0	0	0	0
113	Slovakia	15	16	15	15	15	14
114	Slovenia	24	25	25	26	27	25
115	South Africa	481	461	437	410	384	363
116	Spain	295	300	309	310	310	308
117	Sri Lanka	79	73	68	62	59	63

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
118	Sudan (former)	413	398	381	374	363	203
119	Swaziland	2	3	3	3	3	3
120	Sweden	209	204	199	202	197	154
121	Switzerland	86	85	85	85	84	84
122	Syrian Arab Republic	81	72	60	50	42	36
123	Tajikistan	6	7	6	6	6	6
124	Thailand	345	330	309	290	274	272
125	Togo	6	5	5	4	4	4
126	Trinidad and Tobago	72	67	62	53	41	28
127	Tunisia	28	26	23	21	19	17
128	Turkey	650	640	636	622	587	583
129	Uganda	48	46	45	43	41	38
130	Ukraine	672	725	717	706	694	680
131	United Arab Emirates	1,346	1,298	1,249	1,196	1,137	1,086
132	United Kingdom	490	417	327	251	202	166
133	United Republic of Tanzania	290	278	265	253	242	380
134	United States of America	10,980	10,671	10,372	10,189	10,018	9,490
135	Uruguay	38	38	38	37	36	36
136	Venezuela (Bolivarian Republic of)	4,788	4,715	4,626	4,542	4,467	4,423
137	Viet Nam	359	358	358	350	337	328
138	Yemen	89	85	78	70	86	81
139	Zambia	349	344	339	334	329	328
140	Zimbabwe	102	95	88	81	74	68

Table A3.14 Natural capital per capita (Natural capital per capita in thousands of constant 2005 US$)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	1.0	0.7	0.6	0.5	0.4	0.4
2	Albania	6.0	6.1	6.2	6.3	6.5	6.4
3	Algeria	23.9	20.0	17.0	14.3	11.4	9.4
4	Argentina	26.5	24.2	22.3	20.9	19.9	18.6
5	Armenia	0.8	0.8	0.8	0.8	1.6	1.7
6	Australia	195.8	182.7	169.5	155.7	137.7	123.9
7	Austria	7.6	7.5	7.6	7.4	7.1	6.6
8	Bahrain	15.4	11.5	7.9	4.7	2.3	1.4
9	Bangladesh	0.6	0.5	0.4	0.4	0.4	0.3
10	Barbados	2.7	2.5	2.3	2.0	1.8	1.7
11	Belgium	0.4	0.5	0.6	0.6	0.6	0.6
12	Belize	75.6	67.0	54.4	46.1	39.6	35.6

(*Continued*)

Table A3.14 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
13	Benin	7.7	6.0	4.8	3.9	3.1	2.8
14	Bolivia (Plurinational State of)	107.5	95.7	85.1	76.1	68.2	62.4
15	Botswana	48.4	40.7	35.4	31.5	27.3	24.3
16	Brazil	50.2	45.3	40.9	37.3	34.4	32.9
17	Bulgaria	9.4	9.5	9.6	10.1	10.7	7.7
18	Burundi	1.0	0.8	0.6	0.5	0.4	0.4
19	Cambodia	27.5	21.8	17.8	15.1	13.2	11.8
20	Cameroon	20.4	16.7	13.8	11.5	9.7	2.3
21	Canada	198.5	185.2	173.8	162.4	151.2	115.4
22	Central African Republic	71.7	62.8	55.8	50.9	46.2	42.6
23	Chile	26.7	23.8	21.6	20.1	18.2	17.2
24	China	8.4	7.8	7.2	6.6	6.2	5.8
25	Colombia	29.1	25.9	23.4	21.0	19.1	6.4
26	Congo	126.0	109.0	93.6	81.4	69.3	61.5
27	Costa Rica	16.9	13.8	11.5	10.7	10.3	13.1
28	Côte d'Ivoire	5.1	5.1	5.1	4.6	4.2	3.7
29	Croatia	4.8	5.3	5.7	5.8	6.0	5.8
30	Cuba	2.9	3.0	3.1	3.2	3.1	2.9
31	Cyprus	1.7	1.5	1.4	1.4	1.2	1.1
32	Czech Republic	7.8	7.5	7.0	6.5	5.8	5.5
33	Democratic Republic of the Congo	37.7	31.0	26.9	22.8	19.2	16.8
34	Denmark	15.0	13.2	11.2	9.0	7.3	6.1
35	Dominican Republic	5.1	4.7	4.2	3.8	3.5	3.3
36	Ecuador	32.8	27.9	23.9	20.6	17.7	16.6
37	Egypt	3.9	3.2	2.6	2.1	1.6	1.3
38	El Salvador	1.6	1.6	1.5	1.5	1.5	1.5
39	Estonia	12.8	10.4	6.9	15.9	16.0	15.8
40	Fiji	11.0	10.5	10.0	9.9	9.5	9.3
41	Finland	33.4	33.0	33.1	31.6	30.1	28.4
42	France	4.7	4.6	4.5	4.4	4.3	4.1
43	Gabon	1,179.2	1,027.8	900.6	800.9	712.4	650.4
44	Gambia	6.0	4.3	3.7	3.0	2.5	2.1
45	Germany	20.6	19.3	18.6	18.0	17.6	17.4
46	Ghana	5.3	4.4	3.7	3.1	2.5	2.9
47	Greece	24.4	23.0	21.1	20.0	19.0	18.7
48	Guatemala	11.9	9.9	8.2	6.7	5.5	5.4
49	Guyana	281.9	279.3	272.7	271.8	267.7	305.3
50	Haiti	1.1	0.9	0.8	0.6	0.5	0.5
51	Honduras	21.7	17.3	13.6	11.3	9.5	8.2
52	Hungary	6.6	6.4	6.1	6.1	5.8	5.8
53	Iceland	415.4	388.3	361.9	335.5	309.9	298.5
54	India	4.1	3.7	3.3	3.0	2.7	2.5
55	Indonesia	16.4	14.3	12.7	11.4	10.1	9.0

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
56	Iran (Islamic Republic of)	84.9	77.6	69.5	63.3	58.1	52.7
57	Iraq	88.2	75.6	63.8	54.4	46.4	39.6
58	Ireland	12.2	9.7	8.8	7.6	6.9	6.4
59	Israel	3.1	2.6	2.3	2.0	1.8	1.5
60	Italy	6.3	6.1	6.2	6.1	6.1	5.5
61	Jamaica	13.5	13.4	12.5	12.0	11.3	11.1
62	Japan	4.6	4.4	4.2	4.0	3.9	3.6
63	Jordan	2.3	1.8	1.6	1.4	1.1	0.9
64	Kazakhstan	56.9	64.2	67.1	64.2	57.4	52.3
65	Kenya	2.0	1.7	1.4	1.2	1.1	1.1
66	Kuwait	780.1	962.1	790.0	650.1	460.5	361.8
67	Kyrgyzstan	3.6	3.6	3.3	3.2	3.4	3.1
68	Lao People's Democratic Republic	35.4	30.3	27.1	24.7	22.4	22.7
69	Latvia	7.9	8.9	9.9	10.9	12.7	12.7
70	Lesotho	0.1	0.1	0.1	0.1	0.1	0.1
71	Liberia	17.8	17.4	12.1	10.3	8.2	7.2
72	Lithuania	4.6	4.8	5.0	5.4	5.8	5.9
73	Luxembourg	3.0	3.2	3.3	3.1	2.8	2.5
74	Malawi	2.6	2.4	2.1	1.8	1.5	1.3
75	Malaysia	34.5	28.8	23.8	19.9	16.8	15.4
76	Maldives	14.2	11.6	11.0	8.9	5.3	4.8
77	Mali	8.9	7.7	6.7	5.6	4.6	2.7
78	Malta	0.6	0.5	0.4	0.4	0.5	0.4
79	Mauritania	9.9	7.8	6.3	4.9	4.0	3.3
80	Mauritius	2.2	1.9	1.7	1.4	1.3	1.3
81	Mexico	13.4	11.7	10.3	9.1	8.0	7.6
82	Mongolia	101.2	92.5	90.9	80.1	73.2	69.2
83	Morocco	3.4	3.0	2.7	2.5	2.3	2.2
84	Mozambique	20.4	16.8	14.4	12.2	15.3	13.5
85	Myanmar	6.0	5.3	4.6	4.1	3.6	3.3
86	Namibia	38.3	34.0	30.7	29.7	30.0	26.7
87	Nepal	11.8	9.4	7.7	6.7	6.3	6.0
88	Netherlands	10.5	8.9	7.6	6.4	5.3	4.4
89	New Zealand	483.1	434.2	412.7	367.8	434.3	379.8
90	Nicaragua	10.2	8.8	7.8	6.9	5.9	6.0
91	Niger	1.9	1.4	1.0	0.9	0.7	0.6
92	Nigeria	10.0	8.5	7.1	5.8	4.7	3.9
93	Norway	137.7	122.2	100.7	79.8	60.9	48.7
94	Pakistan	13.5	10.6	8.4	6.6	5.1	4.0
95	Panama	18.7	16.1	13.9	12.4	11.1	12.2
96	Papua New Guinea	78.7	67.4	57.4	49.4	42.6	53.3
97	Paraguay	27.2	23.1	21.1	18.6	17.1	15.2
98	Peru	61.0	54.3	49.7	45.7	42.0	41.8
99	Philippines	2.3	2.0	1.8	1.7	1.6	1.4

(*Continued*)

Table A3.14 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
100	Poland	14.3	13.6	13.2	12.6	12.1	11.8
101	Portugal	6.2	6.3	6.4	6.0	5.9	5.6
102	Qatar	948.7	884.2	724.9	491.3	217.1	161.7
103	Republic of Korea	9.8	9.3	9.1	9.1	8.9	7.8
104	Republic of Moldova	1.6	1.7	1.8	2.0	2.1	0.4
105	Romania	9.4	9.2	9.0	9.0	9.3	9.2
106	Russian Federation	73.6	87.4	86.6	86.3	84.6	81.7
107	Rwanda	0.4	0.4	0.3	0.3	0.4	0.4
108	Saudi Arabia	359.5	334.1	284.7	237.3	200.1	179.6
109	Senegal	10.9	9.0	7.6	6.4	5.5	4.8
110	Serbia	3.3	3.4	3.5	4.0	5.8	5.1
111	Sierra Leone	5.1	5.0	4.6	3.5	2.9	2.6
112	Singapore	0.1	0.1	0.1	0.1	0.0	0.0
113	Slovakia	2.8	2.9	2.9	2.8	2.8	2.6
114	Slovenia	12.0	12.4	12.7	13.2	13.4	12.2
115	South Africa	13.7	11.8	9.9	8.7	7.6	6.7
116	Spain	7.6	7.6	7.7	7.1	6.7	6.6
117	Sri Lanka	4.6	4.1	3.6	3.2	2.9	3.1
118	Sudan (former)	20.7	16.1	13.6	11.7	10.1	5.2
119	Swaziland	2.9	2.7	2.5	2.5	2.4	2.4
120	Sweden	24.5	23.2	22.5	22.3	21.0	15.9
121	Switzerland	12.8	12.1	11.9	11.4	10.8	10.2
122	Syrian Arab Republic	6.5	5.0	3.7	2.8	2.0	1.9
123	Tajikistan	1.2	1.1	1.1	1.0	0.9	0.8
124	Thailand	6.1	5.6	4.9	4.4	4.1	4.0
125	Togo	1.5	1.2	1.0	0.7	0.6	0.5
126	Trinidad and Tobago	58.7	53.5	48.7	41.1	30.8	20.6
127	Tunisia	3.5	2.9	2.5	2.1	1.8	1.5
128	Turkey	12.0	10.9	10.1	9.2	8.1	7.5
129	Uganda	2.8	2.3	1.9	1.5	1.2	1.0
130	Ukraine	12.9	14.1	14.6	15.0	15.1	15.0
131	United Arab Emirates	743.0	552.3	409.3	266.9	136.6	119.5
132	United Kingdom	8.6	7.2	5.5	4.2	3.2	2.6
133	United Republic of Tanzania	11.4	9.3	7.8	6.5	5.3	7.3
134	United States of America	44.0	40.1	36.8	34.5	32.4	29.8
135	Uruguay	12.3	11.8	11.3	11.2	10.7	10.5
136	Venezuela (Bolivarian Republic of)	241.1	212.5	189.0	169.7	154.1	144.1
137	Viet Nam	5.4	5.0	4.6	4.3	3.9	3.6
138	Yemen	7.4	5.6	4.4	3.4	3.6	3.1
139	Zambia	42.8	37.1	32.0	27.7	23.6	20.9
140	Zimbabwe	9.8	8.1	7.0	6.2	5.3	4.5

Table A3.15 Natural capital growth (Natural capital change (%) with respect to base year 1990)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	−0.1%	−0.2%	−0.2%	−0.3%	−0.8%
2	Albania	−0.4%	−0.9%	−1.1%	−1.2%	−2.1%
3	Algeria	−1.4%	−3.8%	−6.4%	−9.7%	−16.1%
4	Argentina	−0.4%	−1.2%	−1.4%	−1.4%	−2.7%
5	Armenia	−1.2%	−3.0%	−4.7%	13.4%	21.7%
6	Australia	−0.2%	−0.7%	−1.3%	−2.4%	−4.5%
7	Austria	0.4%	1.0%	1.2%	0.5%	−0.9%
8	Bahrain	−3.3%	−8.9%	−14.4%	−21.1%	−36.3%
9	Bangladesh	−1.3%	−2.3%	−3.2%	−3.4%	−5.9%
10	Barbados	−1.2%	−3.2%	−6.1%	−7.5%	−12.3%
11	Belgium	2.9%	7.0%	9.5%	10.9%	13.2%
12	Belize	−0.5%	−1.3%	−2.0%	−2.6%	−4.1%
13	Benin	−1.4%	−3.4%	−4.8%	−6.2%	−8.1%
14	Bolivia (Plurinational State of)	−0.4%	−0.9%	−1.5%	−2.1%	−3.6%
15	Botswana	−0.8%	−2.1%	−3.2%	−4.3%	−6.9%
16	Brazil	−0.4%	−1.2%	−1.7%	−2.4%	−3.5%
17	Bulgaria	−0.3%	−1.0%	−1.0%	−0.8%	−12.0%
18	Burundi	−1.9%	−5.8%	−6.5%	−6.5%	−7.1%
19	Cambodia	−1.2%	−3.3%	−5.1%	−6.5%	−10.1%
20	Cameroon	−1.1%	−2.7%	−4.1%	−5.1%	−39.9%
21	Canada	−0.3%	−0.8%	−1.2%	−1.7%	−9.4%
22	Central African Republic	−0.1%	−0.3%	−0.5%	−0.7%	−0.9%
23	Chile	−0.7%	−1.7%	−2.0%	−3.1%	−4.6%
24	China	−0.3%	−1.2%	−2.5%	−3.6%	−6.2%
25	Colombia	−0.5%	−1.3%	−2.3%	−3.1%	−32.4%
26	Congo	−0.3%	−0.8%	−1.3%	−1.6%	−2.7%
27	Costa Rica	−1.5%	−3.5%	−3.3%	−2.7%	5.9%
28	Côte d'Ivoire	3.5%	7.9%	7.9%	8.1%	10.3%
29	Croatia	1.6%	2.4%	2.9%	3.4%	2.2%
30	Cuba	1.4%	2.9%	3.8%	3.3%	1.9%
31	Cyprus	−0.2%	0.2%	1.5%	−0.3%	−0.4%
32	Czech Republic	−0.9%	−3.0%	−4.9%	−6.8%	−10.7%
33	Democratic Republic of the Congo	−0.2%	−0.5%	−0.7%	−1.0%	−1.6%
34	Denmark	−2.2%	−6.2%	−10.9%	−14.8%	−23.8%
35	Dominican Republic	−0.1%	−0.5%	−1.1%	−1.4%	−2.6%
36	Ecuador	−1.0%	−2.6%	−4.1%	−5.8%	−7.7%
37	Egypt	−1.9%	−5.3%	−8.1%	−11.4%	−18.8%
38	El Salvador	0.3%	0.5%	1.5%	1.5%	2.2%
39	Estonia	−5.9%	−16.9%	1.7%	1.5%	1.1%
40	Fiji	0.4%	0.5%	0.5%	0.5%	1.1%

(*Continued*)

Table A3.15 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
41	Finland	0.2%	0.7%	−0.1%	−0.8%	−2.3%
42	France	0.0%	0.1%	0.3%	0.2%	−0.1%
43	Gabon	−0.1%	−0.3%	−0.4%	−0.5%	−0.8%
44	Gambia	−3.5%	−4.5%	−5.4%	−5.8%	−9.3%
45	Germany	−0.7%	−1.6%	−2.4%	−3.1%	−4.7%
46	Ghana	−1.1%	−2.5%	−4.0%	−5.7%	0.2%
47	Greece	−0.5%	−2.2%	−3.1%	−4.0%	−6.4%
48	Guatemala	−1.3%	−3.3%	−5.0%	−7.1%	−7.7%
49	Guyana	0.0%	−0.1%	−0.2%	−0.2%	4.7%
50	Haiti	−1.4%	−3.6%	−5.8%	−8.4%	−13.2%
51	Honduras	−1.9%	−5.6%	−7.5%	−9.6%	−15.1%
52	Hungary	−0.9%	−2.4%	−3.0%	−4.3%	−6.3%
53	Iceland	−0.4%	−1.0%	−1.5%	−1.8%	−2.6%
54	India	−0.3%	−0.8%	−1.3%	−1.9%	−3.5%
55	Indonesia	−1.1%	−2.5%	−3.4%	−4.8%	−8.2%
56	Iran (Islamic Republic of)	−0.4%	−1.0%	−1.8%	−2.5%	−4.8%
57	Iraq	−0.2%	−0.6%	−1.2%	−1.8%	−3.2%
58	Ireland	−3.8%	−6.0%	−7.3%	−7.2%	−11.6%
59	Israel	−0.2%	−0.5%	−1.4%	−2.1%	−4.8%
60	Italy	−0.5%	0.1%	0.0%	0.5%	−1.9%
61	Jamaica	0.6%	−0.1%	−0.6%	−1.5%	−2.1%
62	Japan	−0.7%	−1.6%	−2.7%	−3.0%	−6.9%
63	Jordan	0.1%	−0.7%	−1.7%	−2.3%	−3.6%
64	Kazakhstan	1.8%	1.8%	1.1%	0.2%	−1.0%
65	Kenya	−0.2%	−1.0%	−1.4%	−1.6%	0.7%
66	Kuwait	−0.4%	−1.3%	−2.2%	−3.2%	−5.4%
67	Kyrgyzstan	0.4%	0.9%	1.2%	3.9%	4.2%
68	Lao People's Democratic Republic	−0.4%	−1.0%	−1.4%	−1.8%	0.3%
69	Latvia	1.2%	2.7%	3.8%	6.2%	6.4%
70	Lesotho	−0.1%	−0.1%	−0.2%	−0.3%	−1.8%
71	Liberia	−0.7%	−1.7%	−2.5%	−3.4%	−5.5%
72	Lithuania	0.4%	0.9%	1.5%	1.5%	0.4%
73	Luxembourg	2.2%	5.2%	5.2%	5.2%	5.8%
74	Malawi	−0.7%	−1.3%	−2.0%	−2.6%	−4.0%
75	Malaysia	−1.0%	−2.9%	−5.0%	−6.9%	−9.8%
76	Maldives	−0.8%	0.4%	−2.0%	−11.0%	−14.5%
77	Mali	−0.2%	−0.5%	−1.1%	−2.1%	−15.5%
78	Malta	−1.7%	−4.7%	−3.6%	−1.9%	−5.5%
79	Mauritania	−2.0%	−4.1%	−6.2%	−7.7%	−13.4%
80	Mauritius	−1.3%	−3.3%	−6.3%	−7.6%	−11.5%
81	Mexico	−0.8%	−2.1%	−3.4%	−4.6%	−6.3%
82	Mongolia	−0.8%	−0.4%	−2.2%	−2.7%	−3.1%
83	Morocco	−0.5%	−1.3%	−2.1%	−2.6%	−3.7%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
84	Mozambique	−0.4%	−0.9%	−1.3%	8.1%	10.4%
85	Myanmar	−1.3%	−3.4%	−5.3%	−7.1%	−11.5%
86	Namibia	0.7%	1.8%	2.7%	5.0%	5.7%
87	Nepal	−1.9%	−4.9%	−6.5%	−6.5%	−8.6%
88	Netherlands	−2.6%	−6.5%	−9.7%	−13.4%	−21.9%
89	New Zealand	−0.2%	−0.3%	−1.4%	4.1%	2.1%
90	Nicaragua	−0.7%	−1.7%	−3.2%	−5.3%	−5.2%
91	Niger	−2.3%	−5.7%	−5.5%	−6.6%	−9.0%
92	Nigeria	−0.8%	−2.3%	−3.9%	−6.1%	−9.9%
93	Norway	−1.8%	−6.2%	−10.9%	−15.5%	−24.6%
94	Pakistan	−2.1%	−5.5%	−8.7%	−12.2%	−19.8%
95	Panama	−0.9%	−2.2%	−2.9%	−3.3%	0.9%
96	Papua New Guinea	−0.6%	−1.5%	−2.1%	−2.8%	6.7%
97	Paraguay	−0.9%	−0.6%	−1.6%	−2.0%	−4.6%
98	Peru	−0.4%	−0.8%	−1.3%	−1.9%	−0.9%
99	Philippines	−0.1%	0.0%	0.1%	1.1%	−0.6%
100	Poland	−0.8%	−1.9%	−3.1%	−4.1%	−6.3%
101	Portugal	0.3%	1.4%	0.6%	0.2%	−2.1%
102	Qatar	−0.4%	−1.2%	−2.3%	−4.0%	−8.1%
103	Republic of Korea	0.0%	0.5%	1.1%	1.3%	−2.0%
104	Republic of Moldova	1.3%	3.2%	4.9%	6.3%	−36.6%
105	Romania	−0.8%	−1.9%	−3.1%	−3.6%	−5.5%
106	Russian Federation	3.5%	3.8%	3.2%	2.6%	2.5%
107	Rwanda	−3.7%	−3.1%	−1.6%	10.8%	14.0%
108	Saudi Arabia	1.4%	0.9%	0.0%	−1.1%	−1.9%
109	Senegal	−0.9%	−2.1%	−3.0%	−3.4%	−4.9%
110	Serbia	0.6%	1.6%	4.6%	14.1%	13.0%
111	Sierra Leone	−0.9%	−2.2%	−3.5%	−5.0%	−7.2%
112	Singapore	−4.7%	−7.4%	−8.6%	−10.3%	−5.7%
113	Slovakia	1.2%	1.3%	1.1%	0.8%	−1.0%
114	Slovenia	0.6%	1.4%	2.3%	3.4%	1.7%
115	South Africa	−0.8%	−2.3%	−3.9%	−5.5%	−9.0%
116	Spain	0.3%	1.2%	1.3%	1.3%	1.4%
117	Sri Lanka	−1.3%	−3.6%	−5.6%	−7.0%	−6.9%
118	Sudan (former)	−0.8%	−2.0%	−2.5%	−3.2%	−21.1%
119	Swaziland	0.9%	2.1%	3.0%	3.9%	6.5%
120	Sweden	−0.5%	−1.2%	−0.9%	−1.5%	−9.8%
121	Switzerland	−0.1%	−0.2%	−0.3%	−0.4%	−1.0%
122	Syrian Arab Republic	−2.5%	−7.3%	−11.4%	−15.2%	−23.5%
123	Tajikistan	0.5%	0.6%	0.5%	0.5%	0.5%
124	Thailand	−0.9%	−2.7%	−4.3%	−5.6%	−7.6%
125	Togo	−1.8%	−4.0%	−7.2%	−8.5%	−13.8%
126	Trinidad and Tobago	−1.3%	−3.7%	−7.2%	−13.1%	−27.0%
127	Tunisia	−1.8%	−4.7%	−7.3%	−10.0%	−15.8%

(*Continued*)

Table A3.15 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
128	Turkey	−0.3%	−0.6%	−1.1%	−2.5%	−3.6%
129	Uganda	−0.8%	−2.0%	−3.0%	−3.9%	−7.8%
130	Ukraine	1.5%	1.6%	1.2%	0.8%	0.4%
131	United Arab Emirates	−0.7%	−1.9%	−2.9%	−4.1%	−6.9%
132	United Kingdom	−3.2%	−9.7%	−15.4%	−19.8%	−30.3%
133	United Republic of Tanzania	−0.9%	−2.2%	−3.3%	−4.4%	9.5%
134	United States of America	−0.6%	−1.4%	−1.9%	−2.3%	−4.7%
135	Uruguay	−0.2%	−0.5%	−0.8%	−1.6%	−2.1%
136	Venezuela (Bolivarian Republic of)	−0.3%	−0.9%	−1.3%	−1.7%	−2.6%
137	Viet Nam	0.0%	0.0%	−0.6%	−1.5%	−2.9%
138	Yemen	−0.9%	−3.1%	−5.9%	−0.8%	−2.9%
139	Zambia	−0.3%	−0.7%	−1.1%	−1.4%	−2.0%
140	Zimbabwe	−1.5%	−3.8%	−5.8%	−7.9%	−12.6%

Table A3.16 Natural capital per capita growth (Natural capital per capita change (%) with respect to base year 1990)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	−6.5%	−11.7%	−16.3%	−19.2%	−28.1%
2	Albania	0.2%	0.7%	1.1%	1.8%	2.1%
3	Algeria	−3.5%	−8.2%	−12.1%	−16.8%	−26.7%
4	Argentina	−1.8%	−4.2%	−5.7%	−6.9%	−11.1%
5	Armenia	0.7%	0.5%	−0.8%	18.6%	28.6%
6	Australia	−1.4%	−3.5%	−5.6%	−8.4%	−14.1%
7	Austria	−0.3%	−0.1%	−0.5%	−1.6%	−4.4%
8	Bahrain	−5.7%	−15.4%	−25.6%	−37.5%	−54.5%
9	Bangladesh	−3.5%	−7.4%	−10.2%	−11.7%	−17.8%
10	Barbados	−1.5%	−4.1%	−7.3%	−9.2%	−14.8%
11	Belgium	2.5%	6.2%	8.1%	8.4%	8.8%
12	Belize	−2.4%	−7.9%	−11.6%	−14.9%	−22.2%
13	Benin	−4.8%	−11.0%	−15.8%	−20.1%	−28.4%
14	Bolivia (Plurinational State of)	−2.3%	−5.7%	−8.3%	−10.8%	−16.6%
15	Botswana	−3.4%	−7.5%	−10.2%	−13.3%	−20.5%
16	Brazil	−2.0%	−4.9%	−7.1%	−9.0%	−13.1%
17	Bulgaria	0.4%	0.6%	2.0%	3.3%	−6.3%
18	Burundi	−3.9%	−10.1%	−14.3%	−17.9%	−25.4%
19	Cambodia	−4.6%	−10.3%	−13.9%	−16.8%	−24.7%
20	Cameroon	−3.9%	−9.3%	−13.3%	−16.9%	−51.3%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
21	Canada	−1.4%	−3.3%	−4.9%	−6.6%	−16.5%
22	Central African Republic	−2.6%	−6.1%	−8.2%	−10.4%	−15.9%
23	Chile	−2.3%	−5.2%	−6.9%	−9.2%	−13.7%
24	China	−1.5%	−3.8%	−5.8%	−7.5%	−11.8%
25	Colombia	−2.3%	−5.3%	−7.8%	−10.0%	−39.5%
26	Congo	−2.9%	−7.2%	−10.4%	−13.9%	−21.3%
27	Costa Rica	−3.9%	−9.1%	−10.7%	−11.6%	−8.2%
28	Côte d'Ivoire	0.0%	0.0%	−2.3%	−4.7%	−9.7%
29	Croatia	2.1%	4.4%	4.8%	5.5%	6.3%
30	Cuba	0.7%	1.6%	2.2%	1.6%	−0.6%
31	Cyprus	−2.3%	−4.9%	−5.8%	−9.0%	−13.1%
32	Czech Republic	−0.9%	−2.9%	−4.6%	−7.1%	−11.3%
33	Democratic Republic of the Congo	−3.9%	−8.1%	−11.8%	−15.5%	−23.6%
34	Denmark	−2.5%	−7.1%	−12.1%	−16.4%	−26.1%
35	Dominican Republic	−2.0%	−4.8%	−7.2%	−9.0%	−13.9%
36	Ecuador	−3.2%	−7.6%	−11.0%	−14.3%	−20.3%
37	Egypt	−3.9%	−9.8%	−14.4%	−19.4%	−30.4%
38	El Salvador	−0.9%	−2.0%	−1.6%	−2.0%	−2.8%
39	Estonia	−4.2%	−14.5%	5.5%	5.7%	7.2%
40	Fiji	−0.8%	−2.2%	−2.5%	−3.6%	−5.3%
41	Finland	−0.2%	−0.2%	−1.4%	−2.6%	−5.3%
42	France	−0.4%	−0.9%	−1.6%	−2.4%	−4.3%
43	Gabon	−2.7%	−6.5%	−9.2%	−11.8%	−18.0%
44	Gambia	−6.3%	−11.2%	−15.5%	−19.2%	−29.2%
45	Germany	−1.3%	−2.5%	−3.3%	−3.8%	−5.3%
46	Ghana	−3.7%	−8.4%	−12.7%	−17.0%	−18.1%
47	Greece	−1.2%	−3.6%	−4.9%	−6.0%	−8.5%
48	Guatemala	−3.7%	−9.1%	−13.3%	−17.6%	−23.4%
49	Guyana	−0.2%	−0.8%	−0.9%	−1.3%	2.7%
50	Haiti	−3.3%	−8.0%	−11.8%	−15.9%	−24.0%
51	Honduras	−4.5%	−11.1%	−15.0%	−18.7%	−27.8%
52	Hungary	−0.8%	−2.0%	−2.3%	−3.4%	−4.7%
53	Iceland	−1.3%	−3.4%	−5.2%	−7.1%	−10.4%
54	India	−2.2%	−5.4%	−7.8%	−10.0%	−15.4%
55	Indonesia	−2.7%	−6.2%	−8.6%	−11.3%	−18.0%
56	Iran (Islamic Republic of)	−1.8%	−4.9%	−7.1%	−9.0%	−14.7%
57	Iraq	−3.0%	−7.8%	−11.4%	−14.8%	−23.4%
58	Ireland	−4.4%	−7.9%	−11.1%	−13.1%	−19.3%
59	Israel	−3.6%	−7.7%	−10.7%	−13.4%	−21.2%
60	Italy	−0.6%	0.0%	−0.5%	−0.6%	−4.1%
61	Jamaica	−0.2%	−2.0%	−3.0%	−4.4%	−6.3%
62	Japan	−1.0%	−2.3%	−3.5%	−3.9%	−7.8%

(*Continued*)

Table A3.16 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
63	Jordan	−4.8%	−9.0%	−12.4%	−17.2%	−26.0%
64	Kazakhstan	2.4%	4.2%	3.1%	0.2%	−2.8%
65	Kenya	−3.3%	−7.7%	−11.0%	−14.1%	−18.9%
66	Kuwait	4.3%	0.3%	−4.5%	−12.3%	−22.6%
67	Kyrgyzstan	−0.3%	−1.8%	−2.8%	−1.6%	−5.2%
68	Lao People's Democratic Republic	−3.1%	−6.5%	−8.6%	−10.8%	−13.8%
69	Latvia	2.6%	5.8%	8.4%	12.7%	17.1%
70	Lesotho	−1.9%	−3.8%	−4.8%	−5.9%	−10.4%
71	Liberia	−0.5%	−9.2%	−12.7%	−17.5%	−26.1%
72	Lithuania	0.8%	2.3%	4.3%	6.1%	8.5%
73	Luxembourg	0.8%	1.8%	0.2%	−2.0%	−6.7%
74	Malawi	−1.6%	−5.5%	−9.2%	−12.9%	−20.7%
75	Malaysia	−3.5%	−8.8%	−12.9%	−16.5%	−23.6%
76	Maldives	−3.9%	−6.2%	−11.1%	−21.9%	−30.2%
77	Mali	−2.7%	−6.8%	−10.9%	−15.4%	−33.1%
78	Malta	−2.6%	−6.4%	−6.7%	−5.7%	−11.3%
79	Mauritania	−4.7%	−10.8%	−16.0%	−20.0%	−30.8%
80	Mauritius	−2.5%	−6.1%	−9.7%	−11.3%	−16.5%
81	Mexico	−2.7%	−6.5%	−9.2%	−12.1%	−17.5%
82	Mongolia	−1.8%	−2.7%	−5.7%	−7.8%	−11.9%
83	Morocco	−2.2%	−4.9%	−6.8%	−8.5%	−13.0%
84	Mozambique	−3.8%	−8.4%	−12.0%	−7.0%	−12.8%
85	Myanmar	−2.5%	−6.4%	−9.3%	−11.8%	−18.3%
86	Namibia	−2.4%	−5.4%	−6.1%	−5.9%	−11.4%
87	Nepal	−4.4%	−10.3%	−13.4%	−14.6%	−20.2%
88	Netherlands	−3.3%	−7.9%	−11.7%	−15.6%	−25.0%
89	New Zealand	−2.1%	−3.9%	−6.6%	−2.6%	−7.7%
90	Nicaragua	−2.8%	−6.3%	−9.3%	−12.7%	−16.3%
91	Niger	−5.5%	−13.6%	−17.3%	−22.0%	−32.2%
92	Nigeria	−3.2%	−8.2%	−12.6%	−17.3%	−26.7%
93	Norway	−2.4%	−7.5%	−12.8%	−18.4%	−29.3%
94	Pakistan	−4.6%	−11.2%	−16.4%	−21.7%	−33.1%
95	Panama	−2.9%	−7.0%	−9.8%	−12.1%	−13.1%
96	Papua New Guinea	−3.1%	−7.6%	−11.0%	−14.2%	−12.2%
97	Paraguay	−3.3%	−6.1%	−9.1%	−11.0%	−17.7%
98	Peru	−2.3%	−5.0%	−7.0%	−8.9%	−11.9%
99	Philippines	−2.4%	−5.6%	−7.8%	−8.7%	−15.0%
100	Poland	−1.0%	−2.0%	−3.1%	−4.0%	−6.3%
101	Portugal	0.2%	0.6%	−0.6%	−1.3%	−3.4%
102	Qatar	−1.4%	−6.5%	−15.2%	−30.8%	−44.6%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
103	Republic of Korea	−1.0%	−1.8%	−1.8%	−2.3%	−7.2%
104	Republic of Moldova	1.4%	3.6%	5.7%	7.2%	−35.8%
105	Romania	−0.4%	−1.1%	−1.1%	−0.3%	−0.6%
106	Russian Federation	3.5%	4.1%	4.1%	3.5%	3.5%
107	Rwanda	0.3%	−5.4%	−6.8%	1.5%	−1.8%
108	Saudi Arabia	−1.5%	−5.7%	−9.9%	−13.6%	−20.7%
109	Senegal	−3.8%	−8.5%	−12.3%	−15.7%	−23.9%
110	Serbia	0.5%	1.8%	5.1%	15.2%	15.4%
111	Sierra Leone	−0.4%	−2.9%	−9.5%	−13.7%	−20.7%
112	Singapore	−7.4%	−13.6%	−16.0%	−21.0%	−22.4%
113	Slovakia	1.0%	0.9%	0.7%	0.3%	−1.7%
114	Slovenia	0.7%	1.5%	2.3%	2.8%	0.6%
115	South Africa	−2.9%	−7.6%	−10.7%	−13.8%	−21.1%
116	Spain	0.0%	0.3%	−1.7%	−3.2%	−4.4%
117	Sri Lanka	−2.5%	−5.7%	−8.5%	−10.7%	−12.8%
118	Sudan (former)	−4.9%	−10.0%	−13.3%	−16.5%	−37.1%
119	Swaziland	−1.3%	−3.1%	−3.2%	−4.2%	−6.4%
120	Sweden	−1.1%	−2.1%	−2.2%	−3.7%	−13.5%
121	Switzerland	−1.1%	−1.9%	−2.8%	−4.2%	−7.3%
122	Syrian Arab Republic	−5.2%	−13.4%	−19.4%	−25.4%	−33.3%
123	Tajikistan	−1.2%	−3.2%	−5.6%	−8.2%	−13.5%
124	Thailand	−1.8%	−5.2%	−7.8%	−9.4%	−13.0%
125	Togo	−4.2%	−9.9%	−15.8%	−19.7%	−30.1%
126	Trinidad and Tobago	−1.9%	−4.6%	−8.6%	−14.9%	−29.5%
127	Tunisia	−3.6%	−8.4%	−11.9%	−15.6%	−23.8%
128	Turkey	−1.9%	−4.4%	−6.6%	−9.4%	−14.5%
129	Uganda	−3.9%	−9.4%	−14.0%	−18.2%	−28.8%
130	Ukraine	1.7%	3.0%	3.7%	4.0%	5.0%
131	United Arab Emirates	−5.8%	−13.8%	−22.6%	−34.5%	−45.6%
132	United Kingdom	−3.4%	−10.3%	−16.5%	−21.7%	−33.0%
133	United Republic of Tanzania	−4.0%	−9.0%	−13.1%	−17.4%	−13.6%
134	United States of America	−1.8%	−4.4%	−5.9%	−7.4%	−12.2%
135	Uruguay	−0.9%	−2.1%	−2.4%	−3.5%	−5.2%
136	Venezuela (Bolivarian Republic of)	−2.5%	−5.9%	−8.4%	−10.6%	−15.8%
137	Viet Nam	−1.7%	−4.0%	−6.0%	−8.1%	−12.7%
138	Yemen	−5.6%	−12.2%	−17.7%	−16.3%	−25.2%
139	Zambia	−2.8%	−7.0%	−10.3%	−13.8%	−21.3%
140	Zimbabwe	−3.6%	−7.9%	−10.7%	−14.3%	−22.9%

Table A3.17 Renewable resources (Renewable resources in billions of constant 2005 US$)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	9	9	9	9	9	9
2	Albania	7	7	6	6	6	6
3	Algeria	16	15	14	13	11	12
4	Argentina	807	792	777	779	790	774
5	Armenia	3	3	2	2	2	2
6	Australia	1,299	1,296	1,284	1,263	1,177	1,099
7	Austria	54	56	58	59	58	56
8	Bahrain	1	1	1	1	1	1
9	Bangladesh	57	54	53	51	50	49
10	Barbados	1	1	1	0	0	0
11	Belgium	4	5	6	6	7	6
12	Belize	14	14	13	13	13	13
13	Benin	38	36	33	32	30	30
14	Bolivia (Plurinational State of)	725	712	698	684	668	653
15	Botswana	65	62	60	57	55	53
16	Brazil	6,988	6,848	6,691	6,568	6,421	6,416
17	Bulgaria	22	24	25	28	31	10
18	Burundi	5	5	4	4	4	4
19	Cambodia	248	233	217	201	189	180
20	Cameroon	234	223	213	203	193	48
21	Canada	2,884	2,885	2,895	2,902	2,908	1,958
22	Central African Republic	211	209	208	207	205	205
23	Chile	240	231	226	230	224	225
24	China	5,369	5,407	5,283	5,085	5,081	5,120
25	Colombia	771	757	752	733	724	178
26	Congo	259	258	258	257	257	257
27	Costa Rica	52	48	45	46	47	62
28	Côte d'Ivoire	58	70	81	81	81	80
29	Croatia	20	21	22	24	25	23
30	Cuba	16	18	21	24	25	23
31	Cyprus	1	1	1	1	1	1
32	Czech Republic	0	0	0	0	0	0
33	Democratic Republic of the Congo	1,320	1,307	1,294	1,281	1,268	1,258
34	Denmark	32	28	25	24	25	23
35	Dominican Republic	35	36	35	34	34	33
36	Ecuador	183	175	166	158	150	159
37	Egypt	11	13	13	13	14	14
38	El Salvador	9	9	9	9	9	9
39	Estonia	20	15	10	22	21	21
40	Fiji	8	8	8	8	8	8
41	Finland	166	168	171	165	161	155

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
42	France	272	273	275	278	277	274
43	Gabon	1,072	1,072	1,071	1,071	1,071	1,075
44	Gambia	5	5	5	4	4	4
45	Germany	148	150	154	157	156	160
46	Ghana	74	70	67	64	60	77
47	Greece	169	168	159	157	155	151
48	Guatemala	107	100	94	87	80	85
49	Guyana	201	201	201	200	200	232
50	Haiti	8	7	7	6	5	5
51	Honduras	107	97	85	78	71	65
52	Hungary	26	25	24	24	23	23
53	Iceland	106	104	102	100	99	98
54	India	1,256	1,248	1,241	1,242	1,243	1,216
55	Indonesia	1,902	1,795	1,730	1,695	1,628	1,557
56	Iran (Islamic Republic of)	566	569	565	535	540	446
57	Iraq	8	8	8	8	8	8
58	Ireland	41	34	32	31	31	29
59	Israel	5	5	5	4	4	4
60	Italy	329	323	338	341	351	327
61	Jamaica	28	29	28	27	26	26
62	Japan	530	518	508	491	489	450
63	Jordan	2	3	3	2	2	2
64	Kazakhstan	12	12	12	12	12	12
65	Kenya	46	46	44	44	43	47
66	Kuwait	1	0	0	0	0	0
67	Kyrgyzstan	5	6	6	6	8	8
68	Lao People's Democratic Republic	149	146	143	141	139	151
69	Latvia	21	22	23	24	27	25
70	Lesotho	0	0	0	0	0	0
71	Liberia	37	36	35	34	33	32
72	Lithuania	17	17	17	18	18	17
73	Luxembourg	1	1	1	1	1	1
74	Malawi	25	24	23	23	22	22
75	Malaysia	322	312	299	284	274	289
76	Maldives	3	3	3	3	2	2
77	Mali	75	75	74	72	69	46
78	Malta	0	0	0	0	0	0
79	Mauritania	15	13	12	11	10	8
80	Mauritius	2	2	2	2	2	2
81	Mexico	854	843	830	819	812	839
82	Mongolia	175	167	173	158	155	160
83	Morocco	84	81	79	77	75	74

(*Continued*)

Table A3.17 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
84	Mozambique	242	237	232	228	224	221
85	Myanmar	231	216	200	186	174	161
86	Namibia	54	56	58	60	63	61
87	Nepal	222	202	182	170	170	170
88	Netherlands	35	33	33	32	32	32
89	New Zealand	1,464	1,452	1,452	1,383	1,754	1,579
90	Nicaragua	42	41	39	37	34	36
91	Niger	12	10	9	9	8	8
92	Nigeria	241	248	246	240	224	224
93	Norway	100	102	99	102	106	108
94	Pakistan	1,313	1,173	1,034	891	755	651
95	Panama	46	44	42	41	40	47
96	Papua New Guinea	311	303	296	290	282	388
97	Paraguay	115	110	112	108	106	100
98	Peru	1,240	1,218	1,205	1,186	1,165	1,234
99	Philippines	131	130	131	132	134	128
100	Poland	49	49	48	43	40	39
101	Portugal	62	63	65	63	62	58
102	Qatar	1	1	1	1	1	1
103	Republic of Korea	397	399	410	423	428	384
104	Republic of Moldova	6	6	7	7	7	1
105	Romania	170	170	171	167	170	170
106	Russian Federation	6,598	6,581	6,563	6,554	6,586	6,553
107	Rwanda	3	2	3	3	3	3
108	Saudi Arabia	1,505	2,114	2,114	2,113	2,109	2,241
109	Senegal	82	78	75	72	71	70
110	Serbia	25	26	27	30	37	33
111	Sierra Leone	20	19	19	18	16	16
112	Singapore	0	0	0	0	0	0
113	Slovakia	10	10	11	11	11	11
114	Slovenia	14	15	17	18	20	18
115	South Africa	180	183	184	183	183	184
116	Spain	254	263	275	279	281	280
117	Sri Lanka	79	73	68	62	59	63
118	Sudan (former)	352	336	320	317	313	157
119	Swaziland	1	2	2	2	2	2
120	Sweden	196	192	187	190	185	142
121	Switzerland	86	85	85	85	84	84
122	Syrian Arab Republic	11	10	9	9	9	8
123	Tajikistan	1	1	1	1	1	1
124	Thailand	251	241	228	220	220	234
125	Togo	5	5	5	4	4	3
126	Trinidad and Tobago	7	7	7	7	7	3
127	Tunisia	9	9	9	9	9	9

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
128	Turkey	381	378	381	373	347	349
129	Uganda	21	19	17	15	13	10
130	Ukraine	44	49	53	55	57	53
131	United Arab Emirates	2	2	2	1	1	1
132	United Kingdom	153	143	135	132	132	121
133	United Republic of Tanzania	288	275	263	251	240	378
134	United States of America	5,051	5,090	5,140	5,294	5,459	5,246
135	Uruguay	38	38	38	37	36	36
136	Venezuela (Bolivarian Republic of)	471	461	452	444	436	444
137	Viet Nam	194	196	201	201	196	196
138	Yemen	37	37	36	35	34	34
139	Zambia	340	336	332	327	322	322
140	Zimbabwe	93	86	79	72	65	60

Table A3.18 Renewable resources per capita (Renewable resources per capita in thousands of constant 2005 US$)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	0.7	0.5	0.4	0.4	0.3	0.3
2	Albania	2.0	2.1	2.1	2.1	2.2	2.2
3	Algeria	0.6	0.5	0.4	0.4	0.3	0.3
4	Argentina	24.6	22.6	21.0	19.9	19.2	18.0
5	Armenia	0.8	0.8	0.8	0.8	0.7	0.8
6	Australia	76.1	71.7	67.0	61.9	53.4	46.8
7	Austria	7.0	7.0	7.2	7.2	7.0	6.6
8	Bahrain	2.1	1.8	1.4	1.0	0.6	0.5
9	Bangladesh	0.5	0.5	0.4	0.4	0.3	0.3
10	Barbados	2.1	2.1	2.0	1.8	1.8	1.7
11	Belgium	0.4	0.5	0.6	0.6	0.6	0.6
12	Belize	75.6	67.0	54.4	46.1	39.5	35.6
13	Benin	7.7	6.0	4.8	3.9	3.1	2.8
14	Bolivia (Plurinational State of)	105.7	94.1	83.8	74.9	67.3	61.8
15	Botswana	46.9	39.4	34.4	30.6	26.7	23.8
16	Brazil	46.5	42.1	38.1	34.8	32.3	31.1
17	Bulgaria	2.6	2.8	3.0	3.6	4.1	1.4
18	Burundi	1.0	0.8	0.6	0.5	0.4	0.4
19	Cambodia	27.5	21.8	17.8	15.1	13.2	11.8
20	Cameroon	19.4	16.0	13.4	11.2	9.4	2.1
21	Canada	103.8	98.3	94.1	89.8	85.5	55.1

(*Continued*)

Table A3.18 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
22	Central African Republic	71.7	62.8	55.8	50.9	46.2	42.6
23	Chile	18.3	16.3	14.9	14.3	13.1	12.7
24	China	4.7	4.5	4.2	3.9	3.8	3.8
25	Colombia	22.5	20.2	18.6	16.9	15.8	3.7
26	Congo	108.6	95.0	82.9	73.4	63.1	57.0
27	Costa Rica	16.9	13.8	11.5	10.7	10.3	13.1
28	Côte d'Ivoire	4.8	4.9	4.9	4.5	4.0	3.6
29	Croatia	4.3	4.6	5.1	5.3	5.6	5.5
30	Cuba	1.5	1.7	1.9	2.1	2.2	2.1
31	Cyprus	1.7	1.5	1.4	1.4	1.2	1.1
32	Czech Republic	0.0	0.0	0.0	0.0	0.0	0.0
33	Democratic Republic of the Congo	37.7	31.0	26.9	22.8	19.2	16.8
34	Denmark	6.2	5.4	4.7	4.4	4.4	4.0
35	Dominican Republic	4.9	4.5	4.1	3.7	3.4	3.2
36	Ecuador	18.0	15.3	13.2	11.5	10.1	10.0
37	Egypt	0.2	0.2	0.2	0.2	0.2	0.2
38	El Salvador	1.6	1.6	1.5	1.5	1.5	1.5
39	Estonia	12.8	10.4	6.9	15.9	15.9	15.8
40	Fiji	11.0	10.5	10.0	9.9	9.5	9.3
41	Finland	33.3	32.9	33.1	31.5	30.1	28.4
42	France	4.7	4.6	4.5	4.4	4.3	4.1
43	Gabon	1,125.5	986.4	870.0	777.5	694.8	636.7
44	Gambia	6.0	4.3	3.7	3.0	2.5	2.1
45	Germany	1.9	1.8	1.9	1.9	1.9	2.0
46	Ghana	5.1	4.2	3.6	3.0	2.5	2.9
47	Greece	16.6	15.9	14.7	14.3	13.9	13.9
48	Guatemala	11.7	9.7	8.0	6.6	5.4	5.3
49	Guyana	279.5	276.9	270.3	269.5	265.5	303.1
50	Haiti	1.1	0.9	0.8	0.6	0.5	0.5
51	Honduras	21.7	17.3	13.6	11.3	9.5	8.2
52	Hungary	2.5	2.4	2.4	2.4	2.3	2.3
53	Iceland	415.4	388.3	361.9	335.5	309.9	298.5
54	India	1.4	1.3	1.2	1.1	1.0	0.9
55	Indonesia	10.5	9.1	8.2	7.5	6.7	6.1
56	Iran (Islamic Republic of)	10.1	9.4	8.6	7.6	7.3	5.7
57	Iraq	0.5	0.4	0.3	0.3	0.2	0.2
58	Ireland	11.6	9.3	8.4	7.4	6.8	6.3
59	Israel	1.0	0.8	0.7	0.6	0.5	0.5
60	Italy	5.8	5.7	5.9	5.9	5.9	5.4
61	Jamaica	11.6	11.6	10.8	10.4	9.8	9.7

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
62	Japan	4.3	4.1	4.0	3.8	3.8	3.5
63	Jordan	0.7	0.6	0.5	0.5	0.4	0.3
64	Kazakhstan	0.7	0.8	0.8	0.8	0.8	0.7
65	Kenya	2.0	1.7	1.4	1.2	1.1	1.1
66	Kuwait	0.3	0.3	0.2	0.2	0.1	0.1
67	Kyrgyzstan	1.2	1.3	1.2	1.2	1.5	1.3
68	Lao People's Democratic Republic	35.1	30.0	26.8	24.5	22.2	22.5
69	Latvia	7.9	8.9	9.9	10.9	12.7	12.7
70	Lesotho	0.1	0.1	0.1	0.1	0.1	0.1
71	Liberia	17.8	17.4	12.1	10.3	8.2	7.2
72	Lithuania	4.5	4.7	5.0	5.4	5.8	5.9
73	Luxembourg	3.0	3.2	3.3	3.1	2.8	2.5
74	Malawi	2.6	2.4	2.1	1.8	1.5	1.3
75	Malaysia	17.7	15.0	12.8	11.0	9.8	9.7
76	Maldives	14.2	11.6	11.0	8.9	5.3	4.8
77	Mali	8.9	7.7	6.7	5.6	4.6	2.7
78	Malta	0.6	0.5	0.4	0.4	0.5	0.4
79	Mauritania	7.4	5.7	4.6	3.5	2.7	2.1
80	Mauritius	2.2	1.9	1.7	1.4	1.3	1.3
81	Mexico	10.0	8.9	8.1	7.5	6.8	6.7
82	Mongolia	80.2	72.7	72.1	62.4	57.1	54.9
83	Morocco	3.3	3.0	2.7	2.5	2.3	2.2
84	Mozambique	18.1	14.9	12.7	10.8	9.2	8.1
85	Myanmar	5.5	4.8	4.2	3.7	3.4	3.0
86	Namibia	38.3	34.0	30.7	29.7	28.7	25.5
87	Nepal	11.8	9.4	7.7	6.7	6.3	6.0
88	Netherlands	2.4	2.1	2.0	2.0	1.9	1.9
89	New Zealand	439.5	395.4	376.4	334.5	403.2	350.2
90	Nicaragua	10.2	8.8	7.8	6.9	5.9	6.0
91	Niger	1.5	1.1	0.8	0.7	0.5	0.4
92	Nigeria	2.5	2.3	2.0	1.7	1.4	1.3
93	Norway	23.6	23.4	22.1	22.0	21.7	21.1
94	Pakistan	12.2	9.6	7.5	5.8	4.4	3.5
95	Panama	18.7	16.1	13.9	12.4	11.1	12.2
96	Papua New Guinea	74.9	64.4	55.1	47.6	41.2	52.1
97	Paraguay	27.2	23.1	21.1	18.6	17.0	15.2
98	Peru	56.8	50.7	46.5	43.0	39.7	39.8
99	Philippines	2.1	1.9	1.7	1.5	1.4	1.3
100	Poland	1.3	1.3	1.3	1.1	1.0	1.0
101	Portugal	6.2	6.3	6.4	6.0	5.8	5.5
102	Qatar	1.6	1.5	1.3	0.8	0.4	0.3

(*Continued*)

Table A3.18 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
103	Republic of Korea	9.3	8.9	8.7	8.8	8.7	7.6
104	Republic of Moldova	1.6	1.7	1.8	2.0	2.1	0.4
105	Romania	7.3	7.5	7.6	7.9	8.4	8.5
106	Russian Federation	44.5	44.3	44.8	45.7	46.1	45.6
107	Rwanda	0.4	0.4	0.3	0.3	0.3	0.2
108	Saudi Arabia	92.0	112.1	98.8	85.4	75.1	72.6
109	Senegal	10.9	9.0	7.6	6.4	5.5	4.8
110	Serbia	3.3	3.4	3.5	4.0	5.0	4.7
111	Sierra Leone	5.1	5.0	4.6	3.5	2.9	2.6
112	Singapore	0.1	0.1	0.1	0.1	0.0	0.0
113	Slovakia	1.8	1.9	2.0	2.1	2.1	2.0
114	Slovenia	7.2	7.8	8.3	9.0	9.6	8.6
115	South Africa	5.1	4.7	4.2	3.9	3.6	3.4
116	Spain	6.5	6.7	6.8	6.4	6.0	6.0
117	Sri Lanka	4.6	4.1	3.6	3.2	2.9	3.1
118	Sudan (former)	17.6	13.6	11.4	9.9	8.7	4.0
119	Swaziland	1.7	1.7	1.6	1.7	1.6	1.6
120	Sweden	22.9	21.7	21.0	21.0	19.8	14.7
121	Switzerland	12.8	12.1	11.9	11.4	10.8	10.2
122	Syrian Arab Republic	0.9	0.7	0.5	0.5	0.4	0.4
123	Tajikistan	0.3	0.3	0.2	0.2	0.2	0.2
124	Thailand	4.4	4.1	3.6	3.3	3.3	3.5
125	Togo	1.4	1.1	0.9	0.7	0.6	0.5
126	Trinidad and Tobago	6.1	5.8	5.6	5.2	5.0	2.6
127	Tunisia	1.1	1.0	0.9	0.9	0.8	0.8
128	Turkey	7.1	6.5	6.0	5.5	4.8	4.5
129	Uganda	1.2	0.9	0.7	0.5	0.4	0.3
130	Ukraine	0.9	0.9	1.1	1.2	1.2	1.2
131	United Arab Emirates	1.2	0.8	0.5	0.3	0.1	0.1
132	United Kingdom	2.7	2.5	2.3	2.2	2.1	1.9
133	United Republic of Tanzania	11.3	9.2	7.7	6.4	5.2	7.3
134	United States of America	20.2	19.1	18.2	17.9	17.6	16.4
135	Uruguay	12.3	11.8	11.3	11.2	10.7	10.5
136	Venezuela (Bolivarian Republic of)	23.7	20.8	18.5	16.6	15.0	14.5
137	Viet Nam	2.9	2.7	2.6	2.4	2.3	2.2
138	Yemen	3.1	2.4	2.1	1.7	1.4	1.3
139	Zambia	41.8	36.3	31.3	27.1	23.2	20.5
140	Zimbabwe	8.8	7.3	6.3	5.6	4.7	4.0

Table A3.19 Renewable resources growth (Renewable resources change (%) with respect to base year 1990)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	0.0%	0.0%	0.0%	0.0%	−0.1%
2	Albania	−0.1%	−0.4%	−0.6%	−0.5%	−0.7%
3	Algeria	−1.1%	−2.6%	−4.7%	−7.4%	−8.3%
4	Argentina	−0.4%	−0.9%	−0.9%	−0.5%	−1.3%
5	Armenia	−1.2%	−3.0%	−4.7%	−7.5%	−4.0%
6	Australia	0.0%	−0.3%	−0.7%	−2.4%	−5.4%
7	Austria	0.7%	1.7%	2.3%	1.9%	1.4%
8	Bahrain	−1.0%	−3.6%	−5.2%	−7.4%	−12.3%
9	Bangladesh	−1.3%	−2.2%	−3.0%	−3.3%	−5.4%
10	Barbados	−0.3%	−0.9%	−2.7%	−3.1%	−5.4%
11	Belgium	2.9%	7.0%	9.5%	10.5%	13.2%
12	Belize	−0.5%	−1.3%	−2.0%	−2.7%	−4.1%
13	Benin	−1.4%	−3.4%	−4.8%	−6.2%	−8.1%
14	Bolivia (Plurinational State of)	−0.4%	−0.9%	−1.4%	−2.0%	−3.4%
15	Botswana	−0.8%	−2.0%	−3.1%	−4.1%	−6.5%
16	Brazil	−0.4%	−1.1%	−1.5%	−2.1%	−2.8%
17	Bulgaria	1.4%	2.7%	5.5%	8.1%	−23.9%
18	Burundi	−1.9%	−5.8%	−6.5%	−6.5%	−7.1%
19	Cambodia	−1.2%	−3.3%	−5.1%	−6.5%	−10.1%
20	Cameroon	−0.9%	−2.3%	−3.5%	−4.6%	−40.8%
21	Canada	0.0%	0.1%	0.2%	0.2%	−12.1%
22	Central African Republic	−0.1%	−0.3%	−0.5%	−0.7%	−0.9%
23	Chile	−0.8%	−1.5%	−1.1%	−1.8%	−2.1%
24	China	0.1%	−0.4%	−1.4%	−1.4%	−1.6%
25	Colombia	−0.4%	−0.6%	−1.2%	−1.6%	−38.7%
26	Congo	−0.1%	−0.1%	−0.2%	−0.2%	−0.3%
27	Costa Rica	−1.5%	−3.5%	−3.3%	−2.7%	5.9%
28	Côte d'Ivoire	3.7%	8.4%	8.5%	8.5%	11.3%
29	Croatia	0.9%	2.4%	3.7%	4.9%	4.4%
30	Cuba	3.2%	7.6%	10.9%	11.8%	14.2%
31	Cyprus	−0.2%	0.2%	1.5%	−0.3%	−0.4%
32	Czech Republic	1.0%	2.5%	2.5%	3.7%	−13.3%
33	Democratic Republic of the Congo	−0.2%	−0.5%	−0.7%	−1.0%	−1.6%
34	Denmark	−2.4%	−5.7%	−6.9%	−6.1%	−10.3%
35	Dominican Republic	0.0%	−0.3%	−0.8%	−1.0%	−2.1%
36	Ecuador	−0.9%	−2.4%	−3.7%	−4.9%	−4.6%
37	Egypt	2.9%	3.0%	4.3%	4.5%	6.9%
38	El Salvador	0.3%	0.5%	1.5%	1.5%	2.2%
39	Estonia	−5.9%	−16.9%	1.7%	1.3%	1.1%
40	Fiji	0.4%	0.5%	0.5%	0.5%	1.1%

(*Continued*)

Table A3.19 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
41	Finland	0.2%	0.7%	−0.1%	−0.8%	−2.3%
42	France	0.0%	0.2%	0.5%	0.4%	0.2%
43	Gabon	0.0%	0.0%	0.0%	0.0%	0.1%
44	Gambia	−3.5%	−4.5%	−5.4%	−5.8%	−9.3%
45	Germany	0.3%	1.0%	1.4%	1.4%	2.6%
46	Ghana	−1.0%	−2.4%	−3.7%	−5.3%	1.2%
47	Greece	−0.1%	−1.5%	−1.9%	−2.1%	−3.6%
48	Guatemala	−1.3%	−3.3%	−4.9%	−7.0%	−7.4%
49	Guyana	0.0%	−0.1%	−0.1%	−0.2%	4.8%
50	Haiti	−1.4%	−3.6%	−5.8%	−8.4%	−13.2%
51	Honduras	−1.9%	−5.6%	−7.5%	−9.6%	−15.1%
52	Hungary	−0.6%	−1.7%	−1.5%	−3.4%	−4.5%
53	Iceland	−0.4%	−1.0%	−1.5%	−1.8%	−2.6%
54	India	−0.1%	−0.3%	−0.3%	−0.3%	−1.1%
55	Indonesia	−1.1%	−2.3%	−2.8%	−3.8%	−6.4%
56	Iran (Islamic Republic of)	0.1%	0.0%	−1.4%	−1.1%	−7.6%
57	Iraq	0.0%	−1.4%	0.2%	−1.7%	−2.0%
58	Ireland	−3.8%	−5.7%	−6.8%	−6.6%	−10.6%
59	Israel	−0.2%	−0.7%	−2.8%	−3.3%	−4.2%
60	Italy	−0.3%	0.7%	0.9%	1.7%	−0.1%
61	Jamaica	0.7%	0.1%	−0.3%	−1.4%	−1.8%
62	Japan	−0.5%	−1.1%	−1.9%	−2.0%	−5.3%
63	Jordan	1.2%	0.6%	−0.6%	−0.8%	−1.1%
64	Kazakhstan	−0.3%	−0.8%	0.5%	0.3%	0.4%
65	Kenya	−0.2%	−1.0%	−1.4%	−1.6%	0.7%
66	Kuwait	−1.9%	−3.6%	−3.6%	−4.7%	−8.7%
67	Kyrgyzstan	0.9%	2.3%	3.4%	10.4%	12.0%
68	Lao People's Democratic Republic	−0.4%	−1.0%	−1.4%	−1.8%	0.4%
69	Latvia	1.2%	2.7%	3.8%	6.2%	6.4%
70	Lesotho	−0.1%	−0.1%	−0.2%	−0.3%	−1.8%
71	Liberia	−0.7%	−1.7%	−2.5%	−3.4%	−5.5%
72	Lithuania	0.4%	1.0%	1.8%	1.8%	1.0%
73	Luxembourg	2.2%	5.2%	5.2%	5.2%	5.8%
74	Malawi	−0.7%	−1.3%	−2.0%	−2.6%	−4.0%
75	Malaysia	−0.7%	−1.8%	−3.1%	−3.9%	−3.6%
76	Maldives	−0.8%	0.4%	−2.0%	−11.0%	−14.5%
77	Mali	−0.2%	−0.5%	−1.1%	−2.1%	−15.5%
78	Malta	−1.7%	−4.7%	−3.6%	−1.9%	−5.5%
79	Mauritania	−2.4%	−4.7%	−7.3%	−10.5%	−17.6%
80	Mauritius	−1.3%	−3.3%	−6.3%	−7.6%	−11.5%
81	Mexico	−0.2%	−0.7%	−1.0%	−1.3%	−0.6%
82	Mongolia	−0.9%	−0.3%	−2.6%	−3.0%	−3.0%
83	Morocco	−0.5%	−1.3%	−2.1%	−2.6%	−3.7%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
84	Mozambique	−0.4%	−1.0%	−1.5%	−1.9%	−3.0%
85	Myanmar	−1.3%	−3.6%	−5.4%	−6.9%	−11.5%
86	Namibia	0.7%	1.8%	2.7%	3.9%	4.2%
87	Nepal	−1.9%	−4.9%	−6.5%	−6.5%	−8.6%
88	Netherlands	−1.2%	−2.0%	−2.2%	−2.2%	−3.7%
89	New Zealand	−0.2%	−0.2%	−1.4%	4.6%	2.6%
90	Nicaragua	−0.7%	−1.7%	−3.2%	−5.3%	−5.2%
91	Niger	−2.8%	−7.2%	−6.9%	−8.2%	−10.6%
92	Nigeria	0.6%	0.6%	−0.1%	−1.8%	−2.3%
93	Norway	0.4%	−0.2%	0.5%	1.5%	2.7%
94	Pakistan	−2.2%	−5.8%	−9.2%	−12.9%	−20.8%
95	Panama	−0.9%	−2.2%	−2.9%	−3.3%	0.9%
96	Papua New Guinea	−0.5%	−1.2%	−1.8%	−2.4%	7.6%
97	Paraguay	−0.9%	−0.6%	−1.6%	−2.0%	−4.6%
98	Peru	−0.4%	−0.7%	−1.1%	−1.5%	−0.2%
99	Philippines	−0.1%	0.0%	0.2%	0.7%	−0.8%
100	Poland	0.0%	−0.3%	−3.2%	−4.9%	−7.2%
101	Portugal	0.3%	1.4%	0.7%	0.0%	−2.3%
102	Qatar	−0.3%	0.1%	−1.5%	−3.6%	−3.8%
103	Republic of Korea	0.1%	0.8%	1.6%	1.9%	−1.1%
104	Republic of Moldova	1.3%	3.2%	4.9%	6.3%	−36.6%
105	Romania	0.0%	0.1%	−0.4%	0.0%	0.0%
106	Russian Federation	−0.1%	−0.1%	−0.2%	0.0%	−0.2%
107	Rwanda	−3.7%	−3.1%	−1.6%	−1.5%	−2.9%
108	Saudi Arabia	7.0%	8.9%	8.9%	8.8%	14.2%
109	Senegal	−0.9%	−2.1%	−3.0%	−3.3%	−4.8%
110	Serbia	0.6%	1.6%	4.6%	10.1%	10.1%
111	Sierra Leone	−0.9%	−2.2%	−3.5%	−5.0%	−7.2%
112	Singapore	−4.7%	−7.4%	−8.6%	−11.0%	−5.7%
113	Slovakia	0.9%	2.2%	3.3%	4.1%	4.0%
114	Slovenia	1.5%	3.7%	5.9%	8.1%	7.3%
115	South Africa	0.3%	0.6%	0.5%	0.4%	0.7%
116	Spain	0.7%	2.1%	2.5%	2.6%	3.3%
117	Sri Lanka	−1.3%	−3.6%	−5.6%	−7.0%	−6.9%
118	Sudan (former)	−0.9%	−2.3%	−2.6%	−2.9%	−23.6%
119	Swaziland	1.5%	3.6%	5.2%	6.7%	11.1%
120	Sweden	−0.5%	−1.2%	−0.9%	−1.4%	−10.1%
121	Switzerland	−0.1%	−0.2%	−0.3%	−0.4%	−1.0%
122	Syrian Arab Republic	−1.8%	−4.1%	−4.9%	−3.9%	−9.6%
123	Tajikistan	−0.1%	−0.2%	−0.3%	−0.3%	−0.4%
124	Thailand	−0.8%	−2.4%	−3.2%	−3.2%	−2.3%
125	Togo	−1.7%	−3.7%	−6.9%	−8.1%	−13.3%
126	Trinidad and Tobago	−0.5%	−1.3%	−2.2%	−2.8%	−22.5%
127	Tunisia	0.1%	−0.2%	−0.4%	−0.4%	−0.8%

(*Continued*)

Table A3.19 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
128	Turkey	−0.2%	0.0%	−0.5%	−2.3%	−2.9%
129	Uganda	−1.9%	−4.9%	−7.7%	−10.0%	−21.0%
130	Ukraine	1.8%	4.3%	5.3%	6.2%	6.0%
131	United Arab Emirates	−2.6%	−7.1%	−12.3%	−15.0%	−20.6%
132	United Kingdom	−1.3%	−3.2%	−3.8%	−3.8%	−7.7%
133	United Republic of Tanzania	−0.9%	−2.2%	−3.3%	−4.5%	9.6%
134	United States of America	0.2%	0.4%	1.2%	2.0%	1.3%
135	Uruguay	−0.2%	−0.5%	−0.8%	−1.6%	−2.1%
136	Venezuela (Bolivarian Republic of)	−0.5%	−1.0%	−1.5%	−1.9%	−2.0%
137	Viet Nam	0.2%	0.9%	0.9%	0.2%	0.3%
138	Yemen	0.0%	−0.5%	−1.7%	−2.2%	−3.3%
139	Zambia	−0.3%	−0.6%	−1.0%	−1.3%	−1.7%
140	Zimbabwe	−1.5%	−3.9%	−6.1%	−8.4%	−13.4%

Table A3.20 Renewable resources per capita growth (Renewable resources per capita change (%) with respect to base year 1990)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	−6.4%	−11.5%	−16.1%	−18.9%	−27.5%
2	Albania	0.5%	1.2%	1.6%	2.6%	3.7%
3	Algeria	−3.2%	−7.0%	−10.5%	−14.7%	−20.0%
4	Argentina	−1.7%	−4.0%	−5.2%	−6.1%	−9.9%
5	Armenia	0.7%	0.5%	−0.8%	−3.2%	1.4%
6	Australia	−1.2%	−3.1%	−5.0%	−8.5%	−15.0%
7	Austria	0.0%	0.7%	0.6%	−0.2%	−2.2%
8	Bahrain	−3.5%	−10.5%	−17.6%	−26.7%	−37.3%
9	Bangladesh	−3.5%	−7.3%	−9.9%	−11.5%	−17.4%
10	Barbados	−0.7%	−1.8%	−4.0%	−4.8%	−8.0%
11	Belgium	2.5%	6.2%	8.1%	8.1%	8.8%
12	Belize	−2.4%	−7.9%	−11.6%	−15.0%	−22.2%
13	Benin	−4.8%	−11.0%	−15.8%	−20.1%	−28.4%
14	Bolivia (Plurinational State of)	−2.3%	−5.7%	−8.2%	−10.7%	−16.4%
15	Botswana	−3.4%	−7.5%	−10.1%	−13.1%	−20.2%
16	Brazil	−2.0%	−4.9%	−6.9%	−8.7%	−12.5%
17	Bulgaria	2.1%	4.4%	8.7%	12.7%	−19.0%
18	Burundi	−3.9%	−10.1%	−14.3%	−17.9%	−25.4%
19	Cambodia	−4.6%	−10.3%	−13.9%	−16.8%	−24.7%
20	Cameroon	−3.7%	−8.8%	−12.8%	−16.5%	−52.1%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
21	Canada	−1.1%	−2.4%	−3.6%	−4.7%	−19.0%
22	Central African Republic	−2.6%	−6.1%	−8.2%	−10.4%	−15.9%
23	Chile	−2.3%	−5.0%	−6.0%	−7.9%	−11.5%
24	China	−1.1%	−3.0%	−4.7%	−5.3%	−7.4%
25	Colombia	−2.1%	−4.6%	−6.8%	−8.5%	−45.1%
26	Congo	−2.6%	−6.5%	−9.3%	−12.7%	−19.3%
27	Costa Rica	−3.9%	−9.1%	−10.7%	−11.6%	−8.2%
28	Côte d'Ivoire	0.2%	0.4%	−1.8%	−4.3%	−8.8%
29	Croatia	1.4%	4.4%	5.6%	6.9%	8.6%
30	Cuba	2.6%	6.2%	9.2%	10.0%	11.4%
31	Cyprus	−2.3%	−4.9%	−5.8%	−9.0%	−13.1%
32	Czech Republic	1.0%	2.7%	2.8%	3.4%	−13.8%
33	Democratic Republic of the Congo	−3.9%	−8.1%	−11.8%	−15.5%	−23.6%
34	Denmark	−2.8%	−6.6%	−8.1%	−7.9%	−13.1%
35	Dominican Republic	−1.8%	−4.5%	−6.8%	−8.7%	−13.5%
36	Ecuador	−3.1%	−7.4%	−10.6%	−13.5%	−17.7%
37	Egypt	0.9%	−1.8%	−2.9%	−4.8%	−8.4%
38	El Salvador	−0.9%	−2.0%	−1.6%	−2.0%	−2.8%
39	Estonia	−4.2%	−14.5%	5.5%	5.6%	7.2%
40	Fiji	−0.8%	−2.2%	−2.5%	−3.6%	−5.3%
41	Finland	−0.2%	−0.2%	−1.4%	−2.6%	−5.2%
42	France	−0.3%	−0.8%	−1.4%	−2.2%	−4.0%
43	Gabon	−2.6%	−6.2%	−8.8%	−11.4%	−17.3%
44	Gambia	−6.3%	−11.2%	−15.5%	−19.2%	−29.2%
45	Germany	−0.3%	0.1%	0.5%	0.6%	1.9%
46	Ghana	−3.7%	−8.3%	−12.5%	−16.6%	−17.3%
47	Greece	−0.8%	−3.0%	−3.7%	−4.2%	−5.7%
48	Guatemala	−3.7%	−9.0%	−13.2%	−17.4%	−23.2%
49	Guyana	−0.2%	−0.8%	−0.9%	−1.3%	2.7%
50	Haiti	−3.3%	−8.0%	−11.8%	−15.9%	−24.0%
51	Honduras	−4.5%	−11.1%	−15.0%	−18.7%	−27.8%
52	Hungary	−0.6%	−1.3%	−0.8%	−2.5%	−2.9%
53	Iceland	−1.3%	−3.4%	−5.2%	−7.1%	−10.4%
54	India	−2.1%	−4.9%	−6.9%	−8.5%	−13.3%
55	Indonesia	−2.8%	−6.0%	−8.1%	−10.5%	−16.4%
56	Iran (Islamic Republic of)	−1.3%	−3.9%	−6.7%	−7.8%	−17.2%
57	Iraq	−2.9%	−8.5%	−10.1%	−14.7%	−22.4%
58	Ireland	−4.3%	−7.6%	−10.7%	−12.5%	−18.4%
59	Israel	−3.7%	−7.9%	−12.0%	−14.5%	−20.7%
60	Italy	−0.4%	0.6%	0.4%	0.5%	−2.4%
61	Jamaica	0.0%	−1.8%	−2.8%	−4.3%	−5.9%

(*Continued*)

Table A3.20 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
62	Japan	−0.8%	−1.7%	−2.7%	−2.9%	−6.2%
63	Jordan	−3.8%	−7.9%	−11.4%	−16.0%	−24.1%
64	Kazakhstan	0.3%	1.6%	2.4%	0.4%	−1.4%
65	Kenya	−3.3%	−7.7%	−11.0%	−14.1%	−18.9%
66	Kuwait	2.7%	−2.0%	−5.9%	−13.7%	−25.3%
67	Kyrgyzstan	0.2%	−0.5%	−0.7%	4.6%	1.9%
68	Lao People's Democratic Republic	−3.1%	−6.5%	−8.6%	−10.8%	−13.7%
69	Latvia	2.6%	5.8%	8.4%	12.7%	17.1%
70	Lesotho	−1.9%	−3.8%	−4.8%	−5.9%	−10.4%
71	Liberia	−0.5%	−9.2%	−12.7%	−17.5%	−26.1%
72	Lithuania	0.8%	2.4%	4.6%	6.4%	9.2%
73	Luxembourg	0.8%	1.8%	0.2%	−2.0%	−6.7%
74	Malawi	−1.6%	−5.5%	−9.2%	−13.0%	−20.7%
75	Malaysia	−3.2%	−7.8%	−11.2%	−13.8%	−18.3%
76	Maldives	−3.9%	−6.2%	−11.1%	−21.9%	−30.2%
77	Mali	−2.7%	−6.8%	−10.9%	−15.4%	−33.1%
78	Malta	−2.6%	−6.4%	−6.7%	−5.7%	−11.3%
79	Mauritania	−5.1%	−11.4%	−17.0%	−22.5%	−34.2%
80	Mauritius	−2.5%	−6.1%	−9.7%	−11.3%	−16.5%
81	Mexico	−2.2%	−5.1%	−7.0%	−9.0%	−12.5%
82	Mongolia	−1.9%	−2.6%	−6.1%	−8.1%	−11.9%
83	Morocco	−2.2%	−4.9%	−6.8%	−8.6%	−13.1%
84	Mozambique	−3.8%	−8.5%	−12.1%	−15.5%	−23.4%
85	Myanmar	−2.6%	−6.6%	−9.4%	−11.7%	−18.3%
86	Namibia	−2.4%	−5.4%	−6.1%	−6.9%	−12.6%
87	Nepal	−4.4%	−10.3%	−13.4%	−14.6%	−20.2%
88	Netherlands	−1.9%	−3.6%	−4.3%	−4.7%	−7.5%
89	New Zealand	−2.1%	−3.8%	−6.6%	−2.1%	−7.3%
90	Nicaragua	−2.8%	−6.3%	−9.3%	−12.7%	−16.3%
91	Niger	−6.0%	−14.9%	−18.5%	−23.4%	−33.4%
92	Nigeria	−1.9%	−5.5%	−9.1%	−13.6%	−20.5%
93	Norway	−0.1%	−1.6%	−1.7%	−2.1%	−3.6%
94	Pakistan	−4.7%	−11.5%	−16.9%	−22.3%	−33.9%
95	Panama	−2.9%	−7.0%	−9.8%	−12.1%	−13.1%
96	Papua New Guinea	−3.0%	−7.4%	−10.7%	−13.9%	−11.4%
97	Paraguay	−3.3%	−6.1%	−9.1%	−11.0%	−17.7%
98	Peru	−2.3%	−4.9%	−6.8%	−8.6%	−11.2%
99	Philippines	−2.4%	−5.5%	−7.7%	−9.1%	−15.2%
100	Poland	−0.3%	−0.4%	−3.2%	−4.9%	−7.1%
101	Portugal	0.2%	0.6%	−0.6%	−1.4%	−3.6%
102	Qatar	−1.3%	−5.3%	−14.4%	−30.5%	−42.0%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
103	Republic of Korea	−0.9%	−1.5%	−1.3%	−1.6%	−6.3%
104	Republic of Moldova	1.4%	3.6%	5.7%	7.2%	−35.8%
105	Romania	0.5%	0.9%	1.7%	3.4%	5.2%
106	Russian Federation	−0.1%	0.2%	0.7%	0.9%	0.8%
107	Rwanda	0.3%	−5.4%	−6.8%	−9.7%	−16.3%
108	Saudi Arabia	4.0%	1.8%	−1.8%	−4.9%	−7.6%
109	Senegal	−3.8%	−8.5%	−12.3%	−15.6%	−23.9%
110	Serbia	0.5%	1.8%	5.1%	11.1%	12.4%
111	Sierra Leone	−0.4%	−2.9%	−9.5%	−13.7%	−20.7%
112	Singapore	−7.4%	−13.6%	−16.0%	−21.6%	−22.4%
113	Slovakia	0.7%	1.8%	2.9%	3.7%	3.2%
114	Slovenia	1.6%	3.8%	5.9%	7.5%	6.1%
115	South Africa	−1.8%	−4.9%	−6.7%	−8.3%	−12.7%
116	Spain	0.4%	1.2%	−0.5%	−1.9%	−2.7%
117	Sri Lanka	−2.5%	−5.7%	−8.5%	−10.7%	−12.8%
118	Sudan (former)	−5.0%	−10.3%	−13.4%	−16.2%	−39.0%
119	Swaziland	−0.7%	−1.7%	−1.1%	−1.6%	−2.3%
120	Sweden	−1.1%	−2.1%	−2.2%	−3.6%	−13.8%
121	Switzerland	−1.1%	−1.9%	−2.8%	−4.2%	−7.3%
122	Syrian Arab Republic	−4.5%	−10.4%	−13.4%	−15.4%	−21.2%
123	Tajikistan	−1.8%	−4.0%	−6.4%	−8.8%	−14.2%
124	Thailand	−1.7%	−4.8%	−6.8%	−7.1%	−8.0%
125	Togo	−4.1%	−9.6%	−15.5%	−19.3%	−29.7%
126	Trinidad and Tobago	−1.1%	−2.2%	−3.7%	−4.8%	−25.2%
127	Tunisia	−1.7%	−4.1%	−5.4%	−6.6%	−10.2%
128	Turkey	−1.7%	−3.9%	−6.0%	−9.2%	−13.9%
129	Uganda	−5.0%	−12.0%	−18.1%	−23.4%	−39.0%
130	Ukraine	1.9%	5.8%	7.9%	9.5%	10.8%
131	United Arab Emirates	−7.5%	−18.4%	−30.0%	−41.9%	−53.6%
132	United Kingdom	−1.6%	−3.9%	−5.1%	−6.0%	−11.3%
133	United Republic of Tanzania	−4.0%	−9.0%	−13.2%	−17.4%	−13.6%
134	United States of America	−1.1%	−2.6%	−3.0%	−3.4%	−6.7%
135	Uruguay	−0.9%	−2.1%	−2.4%	−3.5%	−5.2%
136	Venezuela (Bolivarian Republic of)	−2.6%	−6.1%	−8.6%	−10.8%	−15.2%
137	Viet Nam	−1.5%	−3.1%	−4.5%	−6.4%	−9.8%
138	Yemen	−4.8%	−9.9%	−14.1%	−17.5%	−25.6%
139	Zambia	−2.8%	−6.9%	−10.2%	−13.7%	−21.1%
140	Zimbabwe	−3.6%	−8.0%	−11.0%	−14.7%	−23.5%

Table A3.21 Non-renewable resources (Non-renewable resources in billions of constant 2005 US$)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	4	4	3	3	3	3
2	Albania	13	13	13	13	12	12
3	Algeria	604	563	516	462	401	354
4	Argentina	60	56	49	40	31	24
5	Armenia	–	–	–	–	3	3
6	Australia	2,041	2,006	1,963	1,912	1,857	1,808
7	Austria	4	4	3	2	1	0
8	Bahrain	7	5	4	3	2	1
9	Bangladesh	4	4	4	3	3	3
10	Barbados	0	0	0	0	0	–
11	Belgium	–	–	–	–	0	–
12	Belize	–	–	–	–	0	–
13	Benin	–	–	–	–	–	–
14	Bolivia (Plurinational State of)	12	12	11	10	9	7
15	Botswana	2	2	2	2	1	1
16	Brazil	554	534	507	469	419	371
17	Bulgaria	59	56	53	51	48	46
18	Burundi	–	–	–	–	–	–
19	Cambodia	–	–	–	–	–	–
20	Cameroon	12	9	7	5	6	5
21	Canada	2,632	2,550	2,453	2,346	2,235	2,145
22	Central African Republic	–	–	–	–	0	0
23	Chile	111	107	101	94	86	79
24	China	4,183	4,009	3,812	3,555	3,166	2,762
25	Colombia	226	214	195	176	154	130
26	Congo	42	38	33	28	25	20
27	Costa Rica	–	–	–	–	0	–
28	Côte d'Ivoire	3	3	3	3	3	2
29	Croatia	3	4	3	2	2	1
30	Cuba	15	14	13	12	10	9
31	Cyprus	–	–	–	–	0	–
32	Czech Republic	81	77	71	66	61	57
33	Democratic Republic of the Congo	–	–	–	–	–	–
34	Denmark	45	41	35	25	16	11
35	Dominican Republic	1	1	1	1	1	1
36	Ecuador	151	144	135	125	114	104
37	Egypt	208	186	164	143	121	103
38	El Salvador	–	–	–	–	–	–
39	Estonia	–	–	–	–	0	–
40	Fiji	–	–	–	–	–	–

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
41	Finland	0	0	0	0	0	–
42	France	4	3	2	1	1	1
43	Gabon	51	45	38	32	27	23
44	Gambia	–	–	–	–	–	–
45	Germany	1,485	1,424	1,375	1,328	1,285	1,253
46	Ghana	4	4	3	3	2	2
47	Greece	80	74	69	62	57	52
48	Guatemala	2	2	2	2	1	1
49	Guyana	2	2	2	2	2	2
50	Haiti	–	–	–	–	–	–
51	Honduras	–	–	–	–	–	–
52	Hungary	43	41	38	37	35	34
53	Iceland	–	–	–	–	–	–
54	India	2,348	2,304	2,248	2,184	2,101	2,025
55	Indonesia	1,072	1,016	953	892	818	745
56	Iran (Islamic Republic of)	4,202	4,113	4,012	3,902	3,773	3,671
57	Iraq	1,533	1,520	1,496	1,462	1,426	1,390
58	Ireland	2	2	1	1	1	0
59	Israel	10	10	10	10	9	8
60	Italy	26	22	18	14	11	8
61	Jamaica	4	4	4	4	4	4
62	Japan	37	30	24	18	12	8
63	Jordan	5	5	5	5	5	5
64	Kazakhstan	918	1,003	987	961	925	891
65	Kenya	–	–	–	–	–	–
66	Kuwait	1,606	1,574	1,524	1,471	1,408	1,357
67	Kyrgyzstan	10	10	10	10	10	10
68	Lao People's Democratic Republic	1	1	1	1	1	1
69	Latvia	–	–	–	–	0	–
70	Lesotho	–	–	–	–	–	–
71	Liberia	–	–	–	–	–	–
72	Lithuania	0	0	0	0	0	–
73	Luxembourg	–	–	–	–	–	–
74	Malawi	–	–	–	–	0	0
75	Malaysia	306	286	259	229	197	172
76	Maldives	–	–	–	–	–	–
77	Mali	–	–	–	–	–	–
78	Malta	–	–	–	–	–	–
79	Mauritania	5	5	5	4	5	5
80	Mauritius	–	–	–	–	–	–
81	Mexico	297	263	225	183	141	109
82	Mongolia	46	46	45	45	44	42

(*Continued*)

Table A3.21 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
83	Morocco	0	0	0	0	0	0
84	Mozambique	30	30	30	30	147	146
85	Myanmar	21	21	20	18	15	14
86	Namibia	–	–	–	–	3	3
87	Nepal	0	0	0	0	0	0
88	Netherlands	122	105	88	72	56	43
89	New Zealand	145	143	140	138	135	133
90	Nicaragua	–	–	–	–	0	–
91	Niger	3	3	3	3	3	3
92	Nigeria	712	669	622	571	518	473
93	Norway	484	431	353	267	192	142
94	Pakistan	135	129	123	115	104	96
95	Panama	–	–	–	–	–	–
96	Papua New Guinea	16	14	12	11	10	9
97	Paraguay	–	–	–	–	0	–
98	Peru	91	87	82	76	69	60
99	Philippines	11	11	11	11	14	12
100	Poland	496	475	455	438	421	409
101	Portugal	0	0	0	0	1	0
102	Qatar	451	442	429	410	383	351
103	Republic of Korea	21	18	16	14	12	10
104	Republic of Moldova	–	–	–	–	–	–
105	Romania	47	38	31	24	18	13
106	Russian Federation	4,322	6,384	6,131	5,835	5,493	5,201
107	Rwanda	–	–	–	–	2	2
108	Saudi Arabia	4,378	4,185	3,977	3,759	3,512	3,305
109	Senegal	0	0	0	0	0	0
110	Serbia	–	–	–	–	6	3
111	Sierra Leone	–	–	–	–	–	–
112	Singapore	–	–	–	–	0	–
113	Slovakia	5	5	5	4	4	3
114	Slovenia	10	9	9	8	8	8
115	South Africa	301	278	253	227	200	179
116	Spain	42	37	34	31	29	28
117	Sri Lanka	–	–	–	–	–	–
118	Sudan (former)	61	61	61	57	50	45
119	Swaziland	1	1	1	1	1	1
120	Sweden	13	13	13	12	12	11
121	Switzerland	0	0	0	0	0	–
122	Syrian Arab Republic	71	62	51	41	33	28
123	Tajikistan	5	5	5	5	5	5
124	Thailand	94	89	81	69	54	38
125	Togo	0	0	0	0	0	0
126	Trinidad and Tobago	64	60	55	46	34	24

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
127	Tunisia	19	17	14	12	10	8
128	Turkey	269	262	255	249	241	234
129	Uganda	28	28	28	28	28	28
130	Ukraine	627	676	664	651	638	627
131	United Arab Emirates	1,344	1,296	1,247	1,195	1,136	1,085
132	United Kingdom	337	274	192	120	71	45
133	United Republic of Tanzania	2	2	2	2	2	2
134	United States of America	5,929	5,581	5,232	4,895	4,559	4,244
135	Uruguay	0	–	–	–	0	–
136	Venezuela (Bolivarian Republic of)	4,317	4,254	4,174	4,099	4,031	3,979
137	Viet Nam	165	162	157	149	142	133
138	Yemen	52	48	42	35	52	48
139	Zambia	9	8	8	7	6	6
140	Zimbabwe	10	9	9	9	8	8

Table A3.22 Non-renewable resources per capita (Non-renewable resources per capita in thousands of constant 2005 US$)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	0.3	0.2	0.2	0.1	0.1	0.1
2	Albania	4.0	4.0	4.1	4.2	4.2	4.2
3	Algeria	23.3	19.5	16.5	13.9	11.1	9.1
4	Argentina	1.8	1.6	1.3	1.0	0.7	0.6
5	Armenia	–	–	–	–	0.9	0.9
6	Australia	119.6	111.0	102.5	93.8	84.3	77.1
7	Austria	0.6	0.4	0.3	0.2	0.1	0.1
8	Bahrain	13.2	9.7	6.5	3.7	1.7	0.9
9	Bangladesh	0.0	0.0	0.0	0.0	0.0	0.0
10	Barbados	0.5	0.4	0.3	0.2	0.1	–
11	Belgium	–	–	–	–	–	–
12	Belize	–	–	–	–	0.2	–
13	Benin	–	–	–	–	–	–
14	Bolivia (Plurinational State of)	1.8	1.6	1.4	1.1	0.9	0.6
15	Botswana	1.5	1.2	1.0	0.8	0.6	0.5
16	Brazil	3.7	3.3	2.9	2.5	2.1	1.8
17	Bulgaria	6.8	6.7	6.5	6.6	6.5	6.3
18	Burundi	–	–	–	–	–	–
19	Cambodia	–	–	–	–	–	–

(*Continued*)

Table A3.22 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
20	Cameroon	1.0	0.7	0.4	0.3	0.3	0.2
21	Canada	94.7	86.9	79.7	72.6	65.7	60.4
22	Central African Republic	–	–	–	–	–	–
23	Chile	8.4	7.5	6.7	5.8	5.1	4.5
24	China	3.7	3.3	3.0	2.7	2.4	2.0
25	Colombia	6.6	5.7	4.8	4.1	3.4	2.7
26	Congo	17.4	14.0	10.7	7.9	6.2	4.5
27	Costa Rica	–	–	–	–	–	–
28	Côte d'Ivoire	0.3	0.2	0.2	0.1	0.2	0.1
29	Croatia	0.6	0.8	0.7	0.5	0.4	0.3
30	Cuba	1.4	1.3	1.2	1.1	0.9	0.8
31	Cyprus	–	–	–	–	–	–
32	Czech Republic	7.8	7.4	6.9	6.4	5.8	5.4
33	Democratic Republic of the Congo	–	–	–	–	–	–
34	Denmark	8.8	7.9	6.5	4.6	2.9	2.0
35	Dominican Republic	0.2	0.2	0.1	0.1	0.1	0.1
36	Ecuador	14.8	12.6	10.7	9.1	7.6	6.6
37	Egypt	3.7	3.0	2.4	1.9	1.5	1.2
38	El Salvador	–	–	–	–	–	–
39	Estonia	–	–	–	–	–	–
40	Fiji	–	–	–	–	–	–
41	Finland	0.1	0.0	0.0	0.0	0.0	–
42	France	0.1	0.0	0.0	0.0	0.0	0.0
43	Gabon	53.7	41.4	30.5	23.4	17.6	13.7
44	Gambia	–	–	–	–	–	–
45	Germany	18.7	17.4	16.7	16.1	15.7	15.5
46	Ghana	0.3	0.2	0.2	0.1	0.1	0.1
47	Greece	7.8	7.0	6.4	5.7	5.1	4.8
48	Guatemala	0.3	0.2	0.2	0.1	0.1	0.1
49	Guyana	2.4	2.4	2.3	2.3	2.2	2.2
50	Haiti	–	–	–	–	–	–
51	Honduras	–	–	–	–	–	–
52	Hungary	4.1	3.9	3.8	3.6	3.5	3.5
53	Iceland	–	–	–	–	–	–
54	India	2.7	2.4	2.1	1.9	1.7	1.6
55	Indonesia	5.9	5.2	4.5	3.9	3.4	2.9
56	Iran (Islamic Republic of)	74.8	68.2	60.9	55.6	50.8	47.0
57	Iraq	87.7	75.2	63.5	54.1	46.2	39.4
58	Ireland	0.6	0.4	0.3	0.2	0.1	0.1
59	Israel	2.1	1.8	1.6	1.4	1.2	1.0

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
60	Italy	0.5	0.4	0.3	0.2	0.2	0.1
61	Jamaica	1.9	1.8	1.6	1.6	1.5	1.4
62	Japan	0.3	0.2	0.2	0.1	0.1	0.1
63	Jordan	1.6	1.2	1.0	0.9	0.7	0.6
64	Kazakhstan	56.2	63.4	66.3	63.4	56.7	51.6
65	Kenya	–	–	–	–	–	–
66	Kuwait	779.9	961.8	789.8	649.9	460.4	361.7
67	Kyrgyzstan	2.4	2.3	2.1	2.0	1.9	1.8
68	Lao People's Democratic Republic	0.3	0.3	0.3	0.3	0.2	0.2
69	Latvia	–	–	–	–	–	–
70	Lesotho	–	–	–	–	–	–
71	Liberia	–	–	–	–	–	–
72	Lithuania	0.1	0.1	0.1	0.0	0.0	–
73	Luxembourg	–	–	–	–	–	–
74	Malawi	–	–	–	–	–	–
75	Malaysia	16.8	13.8	11.1	8.9	7.0	5.8
76	Maldives	–	–	–	–	–	–
77	Mali	–	–	–	–	–	–
78	Malta	–	–	–	–	–	–
79	Mauritania	2.5	2.1	1.7	1.4	1.4	1.2
80	Mauritius	–	–	–	–	–	–
81	Mexico	3.5	2.8	2.2	1.7	1.2	0.9
82	Mongolia	21.1	19.8	18.8	17.7	16.1	14.3
83	Morocco	0.0	0.0	0.0	0.0	0.0	0.0
84	Mozambique	2.3	1.9	1.7	1.4	6.0	5.4
85	Myanmar	0.5	0.5	0.4	0.4	0.3	0.3
86	Namibia	–	–	–	–	1.2	1.1
87	Nepal	0.0	0.0	0.0	0.0	0.0	0.0
88	Netherlands	8.2	6.8	5.5	4.4	3.4	2.6
89	New Zealand	43.6	38.8	36.3	33.3	31.1	29.6
90	Nicaragua	–	–	–	–	–	–
91	Niger	0.4	0.3	0.2	0.2	0.2	0.1
92	Nigeria	7.4	6.2	5.1	4.1	3.2	2.7
93	Norway	114.2	98.8	78.6	57.7	39.3	27.6
94	Pakistan	1.3	1.1	0.9	0.7	0.6	0.5
95	Panama	–	–	–	–	–	–
96	Papua New Guinea	3.8	3.1	2.3	1.8	1.4	1.2
97	Paraguay	–	–	–	–	0.0	–
98	Peru	4.2	3.6	3.2	2.8	2.3	1.9
99	Philippines	0.2	0.2	0.1	0.1	0.2	0.1
100	Poland	13.0	12.3	11.9	11.5	11.1	10.7
101	Portugal	0.0	0.0	0.0	0.0	0.0	0.0

(*Continued*)

Table A3.22 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
102	Qatar	947.2	882.7	723.7	490.5	216.7	161.4
103	Republic of Korea	0.5	0.4	0.3	0.3	0.2	0.2
104	Republic of Moldova	–	–	–	–	–	–
105	Romania	2.0	1.7	1.4	1.1	0.9	0.7
106	Russian Federation	29.1	43.0	41.8	40.7	38.5	36.2
107	Rwanda	–	–	–	–	0.2	0.1
108	Saudi Arabia	267.6	222.0	185.9	151.9	125.0	107.0
109	Senegal	0.1	0.0	0.0	0.0	0.0	0.0
110	Serbia	–	–	–	–	0.8	0.4
111	Sierra Leone	–	–	–	–	–	–
112	Singapore	–	–	–	–	–	–
113	Slovakia	0.9	1.0	0.9	0.8	0.7	0.6
114	Slovenia	4.8	4.6	4.4	4.1	3.8	3.6
115	South Africa	8.5	7.1	5.7	4.8	3.9	3.3
116	Spain	1.1	0.9	0.8	0.7	0.6	0.6
117	Sri Lanka	–	–	–	–	–	–
118	Sudan (former)	3.1	2.5	2.2	1.8	1.4	1.2
119	Swaziland	1.1	1.0	0.9	0.9	0.8	0.7
120	Sweden	1.5	1.5	1.4	1.3	1.3	1.2
121	Switzerland	0.0	0.0	0.0	0.0	0.0	–
122	Syrian Arab Republic	5.7	4.3	3.1	2.3	1.6	1.5
123	Tajikistan	0.9	0.9	0.8	0.7	0.7	0.6
124	Thailand	1.7	1.5	1.3	1.1	0.8	0.6
125	Togo	0.1	0.1	0.0	0.0	0.0	0.0
126	Trinidad and Tobago	52.6	47.7	43.1	35.8	25.7	18.1
127	Tunisia	2.4	1.9	1.5	1.2	0.9	0.7
128	Turkey	5.0	4.5	4.0	3.7	3.3	3.0
129	Uganda	1.6	1.4	1.2	1.0	0.8	0.7
130	Ukraine	12.1	13.1	13.5	13.8	13.9	13.8
131	United Arab Emirates	741.8	551.4	408.8	266.6	136.4	119.4
132	United Kingdom	5.9	4.7	3.3	2.0	1.1	0.7
133	United Republic of Tanzania	0.1	0.1	0.1	0.1	0.1	0.0
134	United States of America	23.8	21.0	18.5	16.6	14.7	13.3
135	Uruguay	–	–	–	–	–	–
136	Venezuela (Bolivarian Republic of)	217.4	191.7	170.5	153.1	139.0	129.6
137	Viet Nam	2.5	2.3	2.0	1.8	1.6	1.5
138	Yemen	4.3	3.1	2.4	1.7	2.2	1.8
139	Zambia	1.0	0.9	0.7	0.6	0.5	0.4
140	Zimbabwe	0.9	0.8	0.7	0.7	0.6	0.5

Table A3.23 Non-renewable resources growth (Non-renewable resources change (%) with respect to base year 1990)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	−0.3%	−0.8%	−0.8%	−1.2%	−2.7%
2	Albania	−0.6%	−1.1%	−1.4%	−1.6%	−2.9%
3	Algeria	−1.4%	−3.8%	−6.5%	−9.7%	−16.3%
4	Argentina	−1.6%	−5.1%	−9.7%	−15.5%	−26.1%
5	Armenia	–	–	–	–	–
6	Australia	−0.4%	−1.0%	−1.6%	−2.3%	−4.0%
7	Austria	−3.7%	−10.2%	−17.9%	−26.6%	−51.7%
8	Bahrain	−3.6%	−9.9%	−16.2%	−24.1%	−42.3%
9	Bangladesh	−1.1%	−3.4%	−6.6%	−5.4%	−13.6%
10	Barbados	−4.9%	−14.3%	−24.4%	−38.8%	−100.0%
11	Belgium	–	–	–	–	–
12	Belize	–	–	–	–	–
13	Benin	–	–	–	–	–
14	Bolivia (Plurinational State of)	−0.8%	−2.0%	−4.1%	−8.3%	−17.8%
15	Botswana	−1.7%	−4.5%	−7.5%	−10.8%	−18.6%
16	Brazil	−0.7%	−2.2%	−4.1%	−6.8%	−12.5%
17	Bulgaria	−1.0%	−2.5%	−3.8%	−4.9%	−8.2%
18	Burundi	–	–	–	–	–
19	Cambodia	–	–	–	–	–
20	Cameroon	−5.4%	−13.6%	−19.1%	−15.5%	−25.2%
21	Canada	−0.6%	−1.8%	−2.8%	−4.0%	−6.6%
22	Central African Republic	–	–	–	–	–
23	Chile	−0.7%	−2.2%	−4.0%	−6.1%	−10.5%
24	China	−0.8%	−2.3%	−4.0%	−6.7%	−12.9%
25	Colombia	−1.1%	−3.7%	−6.1%	−9.1%	−16.9%
26	Congo	−1.7%	−5.5%	−9.6%	−11.8%	−21.4%
27	Costa Rica	–	–	–	–	–
28	Côte d'Ivoire	−0.3%	−2.7%	−5.3%	−1.3%	−12.1%
29	Croatia	6.3%	2.1%	−3.7%	−9.9%	−19.2%
30	Cuba	−0.7%	−2.8%	−5.6%	−8.8%	−15.4%
31	Cyprus	–	–	–	–	–
32	Czech Republic	−0.9%	−3.0%	−4.9%	−6.8%	−10.7%
33	Democratic Republic of the Congo	–	–	–	–	–
34	Denmark	−2.0%	−6.6%	−14.1%	−23.0%	−37.0%
35	Dominican Republic	−2.9%	−7.4%	−10.9%	−12.6%	−18.7%
36	Ecuador	−1.0%	−2.8%	−4.7%	−6.9%	−11.7%
37	Egypt	−2.2%	−5.8%	−9.0%	−12.6%	−20.8%
38	El Salvador	–	–	–	–	–
39	Estonia	–	–	–	–	–
40	Fiji	–	–	–	–	–

(*Continued*)

Table A3.23 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
41	Finland	−3.7%	−11.8%	−21.5%	−25.0%	−100.0%
42	France	−6.1%	−14.4%	−21.2%	−25.9%	−40.7%
43	Gabon	−2.5%	−7.4%	−10.9%	−14.6%	−23.2%
44	Gambia	–	–	–	–	–
45	Germany	−0.8%	−1.9%	−2.8%	−3.6%	−5.5%
46	Ghana	−1.4%	−4.9%	−8.6%	−13.9%	−23.4%
47	Greece	−1.4%	−3.6%	−5.9%	−8.2%	−13.0%
48	Guatemala	−0.9%	−4.8%	−9.8%	−15.1%	−24.7%
49	Guyana	−0.2%	−0.6%	−0.9%	−1.1%	−1.8%
50	Haiti	–	–	–	–	–
51	Honduras	–	–	–	–	–
52	Hungary	−1.1%	−2.8%	−3.9%	−4.9%	−7.3%
53	Iceland	–	–	–	–	–
54	India	−0.4%	−1.1%	−1.8%	−2.7%	−4.8%
55	Indonesia	−1.1%	−2.9%	−4.5%	−6.5%	−11.4%
56	Iran (Islamic Republic of)	−0.4%	−1.1%	−1.8%	−2.7%	−4.4%
57	Iraq	−0.2%	−0.6%	−1.2%	−1.8%	−3.2%
58	Ireland	−5.0%	−12.3%	−18.5%	−25.1%	−39.3%
59	Israel	−0.1%	−0.4%	−0.7%	−1.6%	−5.1%
60	Italy	−3.3%	−9.0%	−14.0%	−20.0%	−32.2%
61	Jamaica	−0.5%	−1.3%	−2.1%	−2.5%	−4.3%
62	Japan	−4.1%	−10.5%	−16.6%	−24.2%	−40.2%
63	Jordan	−0.5%	−1.4%	−2.2%	−3.0%	−4.8%
64	Kazakhstan	1.8%	1.8%	1.1%	0.2%	−1.0%
65	Kenya	–	–	–	–	–
66	Kuwait	−0.4%	−1.3%	−2.2%	−3.2%	−5.4%
67	Kyrgyzstan	0.2%	0.1%	0.0%	−0.1%	−0.4%
68	Lao People's Democratic Republic	0.0%	0.0%	−0.1%	−0.2%	−0.5%
69	Latvia	–	–	–	–	–
70	Lesotho	–	–	–	–	–
71	Liberia	–	–	–	–	–
72	Lithuania	−0.9%	−6.7%	−21.7%	−36.7%	−100.0%
73	Luxembourg	–	–	–	–	–
74	Malawi	–	–	–	–	–
75	Malaysia	−1.4%	−4.1%	−7.0%	−10.5%	−17.5%
76	Maldives	–	–	–	–	–
77	Mali	–	–	–	–	–
78	Malta	–	–	–	–	–
79	Mauritania	−0.8%	−2.1%	−3.2%	−0.5%	−2.6%
80	Mauritius	–	–	–	–	–
81	Mexico	−2.4%	−6.7%	−11.4%	−17.0%	−28.3%
82	Mongolia	−0.2%	−0.5%	−0.8%	−1.3%	−3.3%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
83	Morocco	−0.7%	−2.3%	−4.1%	21.8%	27.8%
84	Mozambique	0.0%	0.0%	0.0%	48.4%	68.9%
85	Myanmar	−0.3%	−1.0%	−4.2%	−8.9%	−11.8%
86	Namibia	–	–	–	–	–
87	Nepal	−0.2%	−1.5%	−2.6%	−4.2%	−7.0%
88	Netherlands	−3.1%	−7.9%	−12.3%	−17.6%	−29.1%
89	New Zealand	−0.4%	−0.9%	−1.3%	−1.7%	−2.8%
90	Nicaragua	–	–	–	–	–
91	Niger	−0.1%	−0.1%	−0.2%	−0.3%	−2.6%
92	Nigeria	−1.2%	−3.3%	−5.4%	−7.7%	−12.8%
93	Norway	−2.3%	−7.6%	−13.8%	−20.6%	−33.6%
94	Pakistan	−0.8%	−2.3%	−3.9%	−6.1%	−10.8%
95	Panama	–	–	–	–	–
96	Papua New Guinea	−1.9%	−6.1%	−9.0%	−11.5%	−17.1%
97	Paraguay	–	–	–	–	–
98	Peru	−1.0%	−2.6%	−4.4%	−6.9%	−12.9%
99	Philippines	−0.3%	−0.8%	−1.4%	6.2%	1.7%
100	Poland	−0.9%	−2.1%	−3.1%	−4.0%	−6.3%
101	Portugal	−4.1%	−9.4%	−10.1%	61.1%	86.5%
102	Qatar	−0.4%	−1.2%	−2.3%	−4.0%	−8.1%
103	Republic of Korea	−3.1%	−7.2%	−10.3%	−13.8%	−23.1%
104	Republic of Moldova	–	–	–	–	–
105	Romania	−4.2%	−10.2%	−15.6%	−21.7%	−34.4%
106	Russian Federation	8.1%	9.1%	7.8%	6.2%	6.4%
107	Rwanda	–	–	–	–	–
108	Saudi Arabia	−0.9%	−2.4%	−3.7%	−5.4%	−8.9%
109	Senegal	−2.2%	−5.6%	−8.6%	−9.6%	−15.4%
110	Serbia	–	–	–	–	–
111	Sierra Leone	–	–	–	–	–
112	Singapore	–	–	–	–	–
113	Slovakia	1.9%	−0.6%	−3.8%	−7.1%	−12.7%
114	Slovenia	−0.9%	−2.4%	−3.7%	−5.1%	−8.0%
115	South Africa	−1.5%	−4.2%	−6.8%	−9.6%	−15.9%
116	Spain	−2.2%	−5.1%	−7.2%	−8.5%	−11.9%
117	Sri Lanka	–	–	–	–	–
118	Sudan (former)	0.0%	−0.1%	−1.9%	−5.1%	−9.5%
119	Swaziland	−0.1%	−0.4%	−0.7%	−0.9%	−1.4%
120	Sweden	−0.5%	−1.4%	−2.1%	−2.6%	−4.9%
121	Switzerland	0.0%	0.0%	0.0%	16.7%	−100.0%
122	Syrian Arab Republic	−2.6%	−7.7%	−12.6%	−17.4%	−26.1%
123	Tajikistan	0.7%	0.8%	0.8%	0.7%	0.7%
124	Thailand	−1.1%	−3.8%	−7.3%	−13.1%	−26.2%
125	Togo	−3.8%	−9.7%	−13.0%	−15.4%	−23.2%
126	Trinidad and Tobago	−1.4%	−4.0%	−7.8%	−14.6%	−27.5%

(*Continued*)

Table A3.23 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
127	Tunisia	−2.7%	−7.0%	−11.1%	−15.8%	−25.2%
128	Turkey	−0.5%	−1.3%	−2.0%	−2.8%	−4.5%
129	Uganda	0.0%	0.0%	0.0%	0.0%	0.0%
130	Ukraine	1.5%	1.4%	0.9%	0.4%	0.0%
131	United Arab Emirates	−0.7%	−1.9%	−2.9%	−4.1%	−6.9%
132	United Kingdom	−4.1%	−13.1%	−22.8%	−32.3%	−48.7%
133	United Republic of Tanzania	0.0%	0.0%	−0.1%	−0.1%	−0.1%
134	United States of America	−1.2%	−3.1%	−4.7%	−6.4%	−10.5%
135	Uruguay	–	–	–	–	–
136	Venezuela (Bolivarian Republic of)	−0.3%	−0.8%	−1.3%	−1.7%	−2.7%
137	Viet Nam	−0.3%	−1.1%	−2.5%	−3.7%	−7.0%
138	Yemen	−1.5%	−5.1%	−9.3%	0.2%	−2.5%
139	Zambia	−1.3%	−2.8%	−4.3%	−6.9%	−12.7%
140	Zimbabwe	−1.0%	−2.3%	−3.2%	−3.7%	−6.0%

Table A3.24 Non-renewable resources per capita growth (Non-renewable resources per capita change (%) with respect to base year 1990)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	−6.7%	−12.2%	−16.8%	−19.9%	−29.5%
2	Albania	0.0%	0.5%	0.8%	1.4%	1.4%
3	Algeria	−3.5%	−8.2%	−12.1%	−16.9%	−26.9%
4	Argentina	−2.9%	−8.0%	−13.7%	−20.2%	−32.5%
5	Armenia	–	–	–	–	–
6	Australia	−1.5%	−3.8%	−5.9%	−8.4%	−13.6%
7	Austria	−4.4%	−11.2%	−19.3%	−28.2%	−53.4%
8	Bahrain	−6.1%	−16.3%	−27.1%	−39.9%	−58.8%
9	Bangladesh	−3.3%	−8.4%	−13.4%	−13.5%	−24.6%
10	Barbados	−5.2%	−15.1%	−25.4%	−39.8%	−100.0%
11	Belgium	–	–	–	–	–
12	Belize	–	–	–	–	–
13	Benin	–	–	–	–	–
14	Bolivia (Plurinational State of)	−2.7%	−6.6%	−10.7%	−16.4%	−28.8%
15	Botswana	−4.3%	−9.9%	−14.2%	−19.2%	−30.5%
16	Brazil	−2.3%	−6.0%	−9.3%	−13.0%	−21.3%
17	Bulgaria	−0.3%	−1.0%	−0.9%	−0.9%	−2.3%
18	Burundi	–	–	–	–	–
19	Cambodia	–	–	–	–	–

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
20	Cameroon	−8.1%	−19.4%	−26.9%	−26.1%	−39.5%
21	Canada	−1.7%	−4.2%	−6.4%	−8.7%	−13.9%
22	Central African Republic	–	–	–	–	–
23	Chile	−2.2%	−5.7%	−8.8%	−12.0%	−19.0%
24	China	−2.0%	−4.9%	−7.3%	−10.5%	−18.1%
25	Colombia	−2.9%	−7.6%	−11.5%	−15.5%	−25.6%
26	Congo	−4.3%	−11.6%	−17.9%	−22.8%	−36.4%
27	Costa Rica	–	–	–	–	–
28	Côte d'Ivoire	−3.6%	−9.9%	−14.3%	−13.0%	−28.0%
29	Croatia	6.8%	4.1%	−1.9%	−8.1%	−15.9%
30	Cuba	−1.3%	−4.0%	−7.0%	−10.3%	−17.4%
31	Cyprus	–	–	–	–	–
32	Czech Republic	−0.9%	−2.9%	−4.6%	−7.1%	−11.3%
33	Democratic Republic of the Congo	–	–	–	–	–
34	Denmark	−2.3%	−7.5%	−15.2%	−24.4%	−38.9%
35	Dominican Republic	−4.7%	−11.3%	−16.3%	−19.3%	−28.2%
36	Ecuador	−3.2%	−7.9%	−11.5%	−15.4%	−23.8%
37	Egypt	−4.2%	−10.3%	−15.2%	−20.4%	−32.1%
38	El Salvador	–	–	–	–	–
39	Estonia	–	–	–	–	–
40	Fiji	–	–	–	–	–
41	Finland	−4.2%	−12.6%	−22.4%	−26.4%	−100.0%
42	France	−6.5%	−15.2%	−22.7%	−27.8%	−43.2%
43	Gabon	−5.1%	−13.1%	−18.8%	−24.3%	−36.6%
44	Gambia	–	–	–	–	–
45	Germany	−1.4%	−2.8%	−3.7%	−4.2%	−6.1%
46	Ghana	−4.0%	−10.8%	−16.9%	−24.2%	−37.4%
47	Greece	−2.1%	−5.0%	−7.7%	−10.2%	−14.9%
48	Guatemala	−3.3%	−10.4%	−17.6%	−24.6%	−37.5%
49	Guyana	−0.4%	−1.4%	−1.6%	−2.2%	−3.7%
50	Haiti	–	–	–	–	–
51	Honduras	–	–	–	–	–
52	Hungary	−1.0%	−2.4%	−3.2%	−4.0%	−5.8%
53	Iceland	–	–	–	–	–
54	India	−2.3%	−5.7%	−8.3%	−10.8%	−16.6%
55	Indonesia	−2.7%	−6.5%	−9.6%	−13.0%	−20.9%
56	Iran (Islamic Republic of)	−1.8%	−5.0%	−7.1%	−9.2%	−14.4%
57	Iraq	−3.0%	−7.8%	−11.4%	−14.8%	−23.4%
58	Ireland	−5.5%	−14.0%	−21.8%	−29.8%	−44.6%
59	Israel	−3.5%	−7.6%	−10.1%	−13.0%	−21.5%
60	Italy	−3.3%	−9.1%	−14.4%	−20.9%	−33.7%

(*Continued*)

Table A3.24 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
61	Jamaica	−1.2%	−3.3%	−4.5%	−5.3%	−8.3%
62	Japan	−4.4%	−11.1%	−17.3%	−24.9%	−40.8%
63	Jordan	−5.4%	−9.6%	−12.9%	−17.8%	−26.9%
64	Kazakhstan	2.5%	4.2%	3.1%	0.2%	−2.8%
65	Kenya	–	–	–	–	–
66	Kuwait	4.3%	0.3%	−4.5%	−12.3%	−22.6%
67	Kyrgyzstan	−0.6%	−2.6%	−4.0%	−5.4%	−9.4%
68	Lao People's Democratic Republic	−2.6%	−5.6%	−7.3%	−9.4%	−14.5%
69	Latvia	–	–	–	–	–
70	Lesotho	–	–	–	–	–
71	Liberia	–	–	–	–	–
72	Lithuania	−0.5%	−5.4%	−19.6%	−33.8%	−100.0%
73	Luxembourg	–	–	–	–	–
74	Malawi	–	–	–	–	–
75	Malaysia	−3.9%	−10.0%	−14.8%	−19.7%	−30.1%
76	Maldives	–	–	–	–	–
77	Mali	–	–	–	–	–
78	Malta	–	–	–	–	–
79	Mauritania	−3.6%	−9.1%	−13.4%	−13.8%	−22.2%
80	Mauritius	–	–	–	–	–
81	Mexico	−4.3%	−10.9%	−16.7%	−23.5%	−36.9%
82	Mongolia	−1.2%	−2.8%	−4.3%	−6.5%	−12.1%
83	Morocco	−2.4%	−5.9%	−8.7%	14.3%	15.3%
84	Mozambique	−3.4%	−7.5%	−10.8%	27.8%	33.3%
85	Myanmar	−1.5%	−4.1%	−8.3%	−13.5%	−18.6%
86	Namibia	–	–	–	–	–
87	Nepal	−2.8%	−7.2%	−9.8%	−12.4%	−18.8%
88	Netherlands	−3.7%	−9.3%	−14.2%	−19.7%	−31.9%
89	New Zealand	−2.3%	−4.5%	−6.5%	−8.1%	−12.1%
90	Nicaragua	–	–	–	–	–
91	Niger	−3.4%	−8.5%	−12.7%	−16.8%	−27.4%
92	Nigeria	−3.7%	−9.2%	−13.9%	−18.7%	−29.0%
93	Norway	−2.8%	−8.9%	−15.7%	−23.4%	−37.7%
94	Pakistan	−3.4%	−8.2%	−12.0%	−16.3%	−25.5%
95	Panama	–	–	–	–	–
96	Papua New Guinea	−4.3%	−11.9%	−17.3%	−21.9%	−31.8%
97	Paraguay	–	–	–	–	–
98	Peru	−2.9%	−6.7%	−9.8%	−13.5%	−22.5%
99	Philippines	−2.7%	−6.3%	−9.2%	−4.1%	−13.0%
100	Poland	−1.1%	−2.2%	−3.1%	−4.0%	−6.2%
101	Portugal	−4.2%	−10.1%	−11.2%	58.8%	84.0%
102	Qatar	−1.4%	−6.5%	−15.2%	−30.8%	−44.6%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
103	Republic of Korea	−4.1%	−9.3%	−12.9%	−16.8%	−27.2%
104	Republic of Moldova	–	–	–	–	–
105	Romania	−3.8%	−9.5%	−13.8%	−19.0%	−31.0%
106	Russian Federation	8.1%	9.4%	8.7%	7.2%	7.5%
107	Rwanda	–	–	–	–	–
108	Saudi Arabia	−3.7%	−8.7%	−13.2%	−17.3%	−26.3%
109	Senegal	−5.1%	−11.8%	−17.4%	−21.1%	−32.3%
110	Serbia	–	–	–	–	–
111	Sierra Leone	–	–	–	–	–
112	Singapore	–	–	–	–	–
113	Slovakia	1.7%	−1.0%	−4.2%	−7.5%	−13.4%
114	Slovenia	−0.8%	−2.3%	−3.7%	−5.6%	−8.9%
115	South Africa	−3.6%	−9.4%	−13.4%	−17.6%	−27.1%
116	Spain	−2.5%	−5.9%	−9.8%	−12.6%	−17.1%
117	Sri Lanka	–	–	–	–	–
118	Sudan (former)	−4.1%	−8.2%	−12.7%	−18.1%	−27.8%
119	Swaziland	−2.3%	−5.5%	−6.7%	−8.6%	−13.3%
120	Sweden	−1.1%	−2.3%	−3.4%	−4.8%	−8.8%
121	Switzerland	−0.9%	−1.7%	−2.5%	12.3%	−100.0%
122	Syrian Arab Republic	−5.3%	−13.8%	−20.4%	−27.3%	−35.6%
123	Tajikistan	−1.0%	−3.0%	−5.4%	−8.0%	−13.3%
124	Thailand	−2.0%	−6.2%	−10.8%	−16.6%	−30.5%
125	Togo	−6.1%	−15.2%	−21.0%	−25.8%	−37.8%
126	Trinidad and Tobago	−1.9%	−4.9%	−9.2%	−16.4%	−30.0%
127	Tunisia	−4.5%	−10.6%	−15.6%	−21.1%	−32.3%
128	Turkey	−2.1%	−5.2%	−7.4%	−9.6%	−15.3%
129	Uganda	−3.2%	−7.5%	−11.3%	−14.9%	−22.8%
130	Ukraine	1.7%	2.8%	3.4%	3.5%	4.6%
131	United Arab Emirates	−5.8%	−13.8%	−22.6%	−34.5%	−45.6%
132	United Kingdom	−4.3%	−13.7%	−23.8%	−33.8%	−50.7%
133	United Republic of Tanzania	−3.2%	−7.0%	−10.2%	−13.6%	−21.2%
134	United States of America	−2.5%	−6.0%	−8.6%	−11.2%	−17.6%
135	Uruguay	–	–	–	–	–
136	Venezuela (Bolivarian Republic of)	−2.5%	−5.9%	−8.4%	−10.6%	−15.8%
137	Viet Nam	−2.0%	−5.0%	−7.7%	−10.1%	−16.3%
138	Yemen	−6.2%	−14.0%	−20.8%	−15.4%	−24.9%
139	Zambia	−3.7%	−9.0%	−13.3%	−18.6%	−29.9%
140	Zimbabwe	−3.1%	−6.5%	−8.2%	−10.4%	−17.1%

Table A3.25 Agriculture land (Agriculture land in billions of constant 2005 US$)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	–	–	–	–	–	–
2	Albania	–	–	–	–	–	–
3	Algeria	–	–	–	–	–	–
4	Argentina	206	206	207	222	238	239
5	Armenia	–	–	–	–	–	–
6	Australia	644	642	632	617	553	558
7	Austria	22	21	21	20	20	19
8	Bahrain	–	–	–	–	–	–
9	Bangladesh	27	25	25	25	24	24
10	Barbados	0	0	0	0	0	0
11	Belgium	–	–	–	–	–	–
12	Belize	1	1	1	1	1	1
13	Benin	–	–	–	–	–	–
14	Bolivia (Plurinational State of)	55	57	58	57	58	58
15	Botswana	5	5	5	4	4	4
16	Brazil	307	328	332	346	347	358
17	Bulgaria	6	6	5	5	5	5
18	Burundi	4	4	4	3	4	3
19	Cambodia	23	24	25	28	29	30
20	Cameroon	11	11	11	11	12	12
21	Canada	63	63	63	62	58	59
22	Central African Republic	–	–	–	–	–	–
23	Chile	122	117	116	122	121	121
24	China	3,961	4,095	4,088	4,053	4,030	4,039
25	Colombia	65	58	59	47	44	40
26	Congo	34	34	34	34	34	34
27	Costa Rica	28	25	23	22	22	21
28	Côte d'Ivoire	14	14	14	15	15	15
29	Croatia	–	–	–	–	–	–
30	Cuba	–	–	–	–	–	–
31	Cyprus	0	0	0	0	0	0
32	Czech Republic	–	–	–	–	–	–
33	Democratic Republic of the Congo	–	–	–	–	–	–
34	Denmark	6	6	5	6	5	5
35	Dominican Republic	16	16	15	15	15	14
36	Ecuador	15	16	16	15	15	14
37	Egypt	8	10	10	11	12	12
38	El Salvador	5	5	5	6	5	6
39	Estonia	–	–	–	–	–	–
40	Fiji	2	2	2	2	2	2
41	Finland	15	14	14	14	14	14
42	France	154	152	150	149	145	144
43	Gabon	–	–	–	–	–	–

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
44	Gambia	0	0	0	0	0	0
45	Germany	68	66	65	65	63	63
46	Ghana	21	22	24	25	26	27
47	Greece	138	137	128	125	123	119
48	Guatemala	–	–	–	–	–	–
49	Guyana	20	20	19	19	19	19
50	Haiti	–	–	–	–	–	–
51	Honduras	10	10	9	9	10	9
52	Hungary	23	22	21	21	19	19
53	Iceland	87	87	86	86	86	86
54	India	698	697	697	693	691	691
55	Indonesia	329	313	344	378	405	424
56	Iran (Islamic Republic of)	89	93	91	69	67	65
57	Iraq	5	5	4	5	4	4
58	Ireland	29	22	22	22	23	22
59	Israel	4	4	4	4	4	4
60	Italy	181	164	168	158	154	146
61	Jamaica	24	25	24	24	22	22
62	Japan	239	229	221	197	193	180
63	Jordan	2	2	2	2	2	2
64	Kazakhstan	–	–	–	–	–	–
65	Kenya	22	23	22	23	23	23
66	Kuwait	–	–	–	–	–	–
67	Kyrgyzstan	–	–	–	–	–	–
68	Lao People's Democratic Republic	11	11	12	13	15	15
69	Latvia	–	–	–	–	–	–
70	Lesotho	–	–	–	–	–	–
71	Liberia	–	–	–	–	–	–
72	Lithuania	–	–	–	–	–	–
73	Luxembourg	–	–	–	–	–	–
74	Malawi	6	6	6	7	8	8
75	Malaysia	34	35	34	35	37	37
76	Maldives	0	0	0	0	0	0
77	Mali	12	13	14	15	15	16
78	Malta	0	0	0	0	0	0
79	Mauritania	–	–	–	–	–	–
80	Mauritius	1	1	1	1	1	1
81	Mexico	473	478	478	479	480	481
82	Mongolia	90	85	94	81	81	81
83	Morocco	31	31	31	30	30	30
84	Mozambique	45	45	45	46	47	47
85	Myanmar	–	–	–	–	–	–
86	Namibia	0	0	0	0	0	0
87	Nepal	10	10	10	10	10	10

(*Continued*)

Table A3.25 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
88	Netherlands	23	22	22	22	21	21
89	New Zealand	101	93	96	73	71	63
90	Nicaragua	9	10	11	11	11	12
91	Niger	2	2	3	3	3	3
92	Nigeria	151	168	175	178	172	181
93	Norway	11	13	12	12	11	12
94	Pakistan	98	100	102	100	98	100
95	Panama	9	9	9	9	9	9
96	Papua New Guinea	–	–	–	–	–	–
97	Paraguay	26	25	31	31	33	34
98	Peru	111	112	118	118	122	125
99	Philippines	49	48	49	50	53	54
100	Poland	42	42	41	36	33	32
101	Portugal	37	37	38	36	33	34
102	Qatar	0	0	0	0	0	0
103	Republic of Korea	242	228	219	209	197	190
104	Republic of Moldova	–	–	–	–	–	–
105	Romania	77	78	78	74	74	72
106	Russian Federation	–	–	–	–	–	–
107	Rwanda	2	2	2	2	2	2
108	Saudi Arabia	1,497	2,106	2,106	2,105	2,102	2,234
109	Senegal	3	3	3	3	3	3
110	Serbia	–	–	–	–	–	–
111	Sierra Leone	–	–	–	–	–	–
112	Singapore	0	0	0	0	0	0
113	Slovakia	–	–	–	–	–	–
114	Slovenia	–	–	–	–	–	–
115	South Africa	126	128	129	128	128	128
116	Spain	136	133	133	130	123	121
117	Sri Lanka	11	11	11	12	13	13
118	Sudan (former)	–	–	–	–	–	–
119	Swaziland	–	–	–	–	–	–
120	Sweden	10	10	10	10	9	9
121	Switzerland	68	67	67	66	65	65
122	Syrian Arab Republic	–	–	–	–	–	–
123	Tajikistan	–	–	–	–	–	–
124	Thailand	76	75	71	70	75	73
125	Togo	1	1	2	1	2	2
126	Trinidad and Tobago	1	1	1	1	1	1
127	Tunisia	5	6	6	6	6	6
128	Turkey	177	176	180	183	174	175
129	Uganda	–	–	–	–	–	–
130	Ukraine	–	–	–	–	–	–
131	United Arab Emirates	–	–	–	–	–	–

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
132	United Kingdom	96	92	90	89	91	90
133	United Republic of Tanzania	24	25	26	27	28	29
134	United States of America	1,385	1,363	1,344	1,336	1,325	1,312
135	Uruguay	32	32	32	32	31	31
136	Venezuela (Bolivarian Republic of)	218	216	216	215	215	215
137	Viet Nam	36	38	47	53	57	61
138	Yemen	29	29	29	29	29	29
139	Zambia	21	21	23	23	23	24
140	Zimbabwe	–	–	–	–	–	–

Table A3.26 Agriculture land per capita (Agriculture land per capita in thousands of constant 2005 US$)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	–	–	–	–	–	–
2	Albania	–	–	–	–	–	–
3	Algeria	–	–	–	–	–	–
4	Argentina	6.3	5.9	5.6	5.7	5.8	5.6
5	Armenia	–	–	–	–	–	–
6	Australia	37.7	35.5	33.0	30.3	25.1	23.8
7	Austria	2.8	2.7	2.6	2.5	2.4	2.3
8	Bahrain	–	–	–	–	–	–
9	Bangladesh	0.3	0.2	0.2	0.2	0.2	0.1
10	Barbados	1.3	1.3	1.2	1.1	1.0	0.9
11	Belgium	–	–	–	–	–	–
12	Belize	3.1	3.3	2.8	2.5	2.3	2.1
13	Benin	–	–	–	–	–	–
14	Bolivia (Plurinational State of)	8.0	7.5	6.9	6.3	5.8	5.5
15	Botswana	3.3	2.9	2.6	2.4	2.2	2.0
16	Brazil	2.0	2.0	1.9	1.8	1.7	1.7
17	Bulgaria	0.7	0.7	0.6	0.6	0.6	0.6
18	Burundi	0.7	0.6	0.5	0.4	0.4	0.3
19	Cambodia	2.5	2.2	2.0	2.1	2.0	2.0
20	Cameroon	0.9	0.8	0.7	0.6	0.6	0.5
21	Canada	2.3	2.1	2.0	1.9	1.7	1.7
22	Central African Republic	–	–	–	–	–	–
23	Chile	9.3	8.3	7.6	7.6	7.1	6.8
24	China	3.5	3.4	3.2	3.1	3.0	3.0
25	Colombia	1.9	1.5	1.5	1.1	1.0	0.8
26	Congo	14.3	12.5	11.0	9.8	8.4	7.6
27	Costa Rica	9.1	7.1	5.7	5.2	4.9	4.3
28	Côte d'Ivoire	1.1	1.0	0.9	0.8	0.7	0.7
29	Croatia	–	–	–	–	–	–

(*Continued*)

Table A3.26 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
30	Cuba	–	–	–	–	–	–
31	Cyprus	0.5	0.4	0.3	0.4	0.2	0.2
32	Czech Republic	–	–	–	–	–	–
33	Democratic Republic of the Congo	–	–	–	–	–	–
34	Denmark	1.1	1.1	1.0	1.0	1.0	1.0
35	Dominican Republic	2.2	2.0	1.8	1.6	1.5	1.4
36	Ecuador	1.5	1.4	1.3	1.1	1.0	0.9
37	Egypt	0.1	0.2	0.2	0.1	0.1	0.1
38	El Salvador	1.0	0.9	0.9	0.9	0.9	0.9
39	Estonia	–	–	–	–	–	–
40	Fiji	3.0	3.0	2.8	2.8	2.6	2.5
41	Finland	3.0	2.8	2.7	2.7	2.7	2.6
42	France	2.6	2.5	2.5	2.4	2.2	2.2
43	Gabon	–	–	–	–	–	–
44	Gambia	0.0	0.0	0.0	0.0	0.1	0.1
45	Germany	0.9	0.8	0.8	0.8	0.8	0.8
46	Ghana	1.4	1.3	1.3	1.2	1.1	1.0
47	Greece	13.6	13.0	11.8	11.4	11.0	10.9
48	Guatemala	–	–	–	–	–	–
49	Guyana	27.1	26.9	25.9	25.5	25.1	24.6
50	Haiti	–	–	–	–	–	–
51	Honduras	2.0	1.9	1.4	1.4	1.3	1.2
52	Hungary	2.2	2.1	2.1	2.1	1.9	1.9
53	Iceland	341.4	324.9	307.4	290.2	269.7	261.2
54	India	0.8	0.7	0.7	0.6	0.6	0.5
55	Indonesia	1.8	1.6	1.6	1.7	1.7	1.7
56	Iran (Islamic Republic of)	1.6	1.5	1.4	1.0	0.9	0.8
57	Iraq	0.3	0.2	0.2	0.2	0.1	0.1
58	Ireland	8.1	6.2	5.9	5.2	5.1	4.7
59	Israel	0.9	0.7	0.6	0.5	0.5	0.4
60	Italy	3.2	2.9	2.9	2.7	2.6	2.4
61	Jamaica	10.1	10.1	9.4	8.9	8.3	8.3
62	Japan	1.9	1.8	1.7	1.5	1.5	1.4
63	Jordan	0.6	0.5	0.5	0.4	0.3	0.3
64	Kazakhstan	–	–	–	–	–	–
65	Kenya	1.0	0.8	0.7	0.6	0.6	0.5
66	Kuwait	–	–	–	–	–	–
67	Kyrgyzstan	–	–	–	–	–	–
68	Lao People's Democratic Republic	2.6	2.3	2.2	2.3	2.3	2.3
69	Latvia	–	–	–	–	–	–
70	Lesotho	–	–	–	–	–	–
71	Liberia	–	–	–	–	–	–
72	Lithuania	–	–	–	–	–	–
73	Luxembourg	–	–	–	–	–	–

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
74	Malawi	0.6	0.6	0.6	0.6	0.5	0.5
75	Malaysia	1.8	1.7	1.5	1.4	1.3	1.2
76	Maldives	0.1	0.1	0.1	0.1	0.1	0.1
77	Mali	1.4	1.3	1.3	1.1	1.0	0.9
78	Malta	0.4	0.3	0.3	0.3	0.3	0.2
79	Mauritania	–	–	–	–	–	–
80	Mauritius	1.1	1.0	0.9	0.8	0.8	0.7
81	Mexico	5.5	5.1	4.7	4.4	4.0	3.8
82	Mongolia	41.2	37.0	39.0	32.2	30.0	27.7
83	Morocco	1.2	1.1	1.1	1.0	0.9	0.9
84	Mozambique	3.4	2.8	2.5	2.2	1.9	1.7
85	Myanmar	–	–	–	–	–	–
86	Namibia	0.1	0.1	0.1	0.1	0.1	0.1
87	Nepal	0.5	0.5	0.4	0.4	0.4	0.4
88	Netherlands	1.5	1.4	1.4	1.3	1.3	1.2
89	New Zealand	30.2	25.4	24.9	17.6	16.3	14.0
90	Nicaragua	2.1	2.1	2.2	2.1	1.9	1.9
91	Niger	0.3	0.3	0.2	0.2	0.2	0.2
92	Nigeria	1.6	1.5	1.4	1.3	1.1	1.0
93	Norway	2.6	2.9	2.6	2.5	2.3	2.2
94	Pakistan	0.9	0.8	0.7	0.7	0.6	0.5
95	Panama	3.5	3.2	3.0	2.7	2.5	2.4
96	Papua New Guinea	–	–	–	–	–	–
97	Paraguay	6.2	5.3	5.9	5.3	5.2	5.2
98	Peru	5.1	4.6	4.6	4.3	4.2	4.0
99	Philippines	0.8	0.7	0.6	0.6	0.6	0.5
100	Poland	1.1	1.1	1.1	0.9	0.9	0.8
101	Portugal	3.7	3.7	3.7	3.4	3.1	3.2
102	Qatar	0.8	0.8	0.7	0.5	0.2	0.2
103	Republic of Korea	5.6	5.0	4.7	4.3	4.0	3.8
104	Republic of Moldova	–	–	–	–	–	–
105	Romania	3.3	3.4	3.5	3.5	3.7	3.6
106	Russian Federation	–	–	–	–	–	–
107	Rwanda	0.3	0.3	0.2	0.2	0.2	0.2
108	Saudi Arabia	91.5	111.7	98.5	85.1	74.8	72.3
109	Senegal	0.4	0.3	0.3	0.3	0.2	0.2
110	Serbia	–	–	–	–	–	–
111	Sierra Leone	–	–	–	–	–	–
112	Singapore	0.0	0.0	0.0	0.0	0.0	0.0
113	Slovakia	–	–	–	–	–	–
114	Slovenia	–	–	–	–	–	–
115	South Africa	3.6	3.3	2.9	2.7	2.5	2.4
116	Spain	3.5	3.4	3.3	3.0	2.6	2.6

(*Continued*)

Table A3.26 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
117	Sri Lanka	0.7	0.6	0.6	0.6	0.6	0.6
118	Sudan (former)	–	–	–	–	–	–
119	Swaziland	–	–	–	–	–	–
120	Sweden	1.2	1.1	1.1	1.1	1.0	0.9
121	Switzerland	10.2	9.6	9.3	8.9	8.4	7.9
122	Syrian Arab Republic	–	–	–	–	–	–
123	Tajikistan	–	–	–	–	–	–
124	Thailand	1.3	1.3	1.1	1.1	1.1	1.1
125	Togo	0.4	0.3	0.3	0.3	0.3	0.2
126	Trinidad and Tobago	0.8	0.8	0.7	0.5	0.5	0.4
127	Tunisia	0.6	0.6	0.6	0.6	0.6	0.6
128	Turkey	3.3	3.0	2.8	2.7	2.4	2.3
129	Uganda	–	–	–	–	–	–
130	Ukraine	–	–	–	–	–	–
131	United Arab Emirates	–	–	–	–	–	–
132	United Kingdom	1.7	1.6	1.5	1.5	1.4	1.4
133	United Republic of Tanzania	0.9	0.8	0.8	0.7	0.6	0.6
134	United States of America	5.5	5.1	4.8	4.5	4.3	4.1
135	Uruguay	10.4	10.0	9.8	9.7	9.3	9.2
136	Venezuela (Bolivarian Republic of)	11.0	9.7	8.8	8.0	7.4	7.0
137	Viet Nam	0.5	0.5	0.6	0.6	0.7	0.7
138	Yemen	2.4	1.9	1.6	1.4	1.2	1.1
139	Zambia	2.6	2.3	2.1	1.9	1.7	1.5
140	Zimbabwe	–	–	–	–	–	–

Table A3.27 Agriculture land growth (Agriculture land change (%) with respect to base year 1990)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	–	–	–	–	–
2	Albania	–	–	–	–	–
3	Algeria	–	–	–	–	–
4	Argentina	0.1%	0.2%	1.9%	3.7%	5.2%
5	Armenia	–	–	–	–	–
6	Australia	0.0%	−0.5%	−1.1%	−3.8%	−4.7%
7	Austria	−0.4%	−0.9%	−1.8%	−2.3%	−3.7%
8	Bahrain	–	–	–	–	–
9	Bangladesh	−2.0%	−2.5%	−2.7%	−2.9%	−4.6%
10	Barbados	0.0%	−1.3%	−4.2%	−5.7%	−9.4%
11	Belgium	–	–	–	–	–
12	Belize	3.0%	4.3%	4.8%	5.7%	8.7%
13	Benin	–	–	–	–	–
14	Bolivia (Plurinational State of)	0.6%	1.2%	1.0%	1.2%	2.1%
15	Botswana	−0.1%	−0.1%	−0.2%	−0.2%	−0.2%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
16	Brazil	1.4%	2.0%	3.0%	3.1%	5.3%
17	Bulgaria	0.0%	−2.4%	−3.8%	−4.8%	−8.1%
18	Burundi	−0.7%	−3.0%	−3.6%	−3.5%	−5.6%
19	Cambodia	0.5%	1.7%	4.7%	6.1%	9.6%
20	Cameroon	0.0%	0.0%	0.1%	1.4%	1.4%
21	Canada	0.1%	−0.1%	−0.1%	−1.7%	−1.7%
22	Central African Republic	–	–	–	–	–
23	Chile	−0.7%	−1.3%	0.0%	−0.2%	−0.3%
24	China	0.7%	0.8%	0.6%	0.4%	0.7%
25	Colombia	−2.4%	−2.4%	−7.8%	−9.5%	−15.0%
26	Congo	0.0%	0.0%	0.1%	0.1%	0.2%
27	Costa Rica	−2.3%	−5.5%	−5.9%	−5.7%	−9.9%
28	Côte d'Ivoire	0.9%	0.9%	1.6%	2.1%	3.2%
29	Croatia	–	–	–	–	–
30	Cuba	–	–	–	–	–
31	Cyprus	−2.3%	−3.1%	1.0%	−8.2%	−9.0%
32	Czech Republic	–	–	–	–	–
33	Democratic Republic of the Congo	–	–	–	–	–
34	Denmark	−0.4%	−1.3%	−0.7%	−1.5%	−2.1%
35	Dominican Republic	0.2%	−0.3%	−1.3%	−1.5%	−2.6%
36	Ecuador	0.7%	0.7%	−1.1%	−1.1%	−2.3%
37	Egypt	4.4%	5.6%	7.4%	8.5%	13.1%
38	El Salvador	0.6%	1.6%	2.6%	2.1%	4.1%
39	Estonia	–	–	–	–	–
40	Fiji	1.4%	1.1%	1.1%	0.9%	1.3%
41	Finland	−1.3%	−1.9%	−1.3%	−1.1%	−2.2%
42	France	−0.3%	−0.6%	−0.9%	−1.4%	−2.1%
43	Gabon	–	–	–	–	–
44	Gambia	−0.2%	10.4%	14.5%	24.1%	33.7%
45	Germany	−0.8%	−1.4%	−1.4%	−1.9%	−2.6%
46	Ghana	0.8%	3.4%	4.6%	5.5%	9.1%
47	Greece	−0.1%	−1.9%	−2.4%	−2.9%	−5.0%
48	Guatemala	–	–	–	–	–
49	Guyana	0.0%	−0.3%	−0.8%	−0.8%	−1.3%
50	Haiti	–	–	–	–	–
51	Honduras	0.9%	−3.0%	−1.3%	−0.7%	−2.2%
52	Hungary	−0.9%	−2.5%	−2.4%	−4.7%	−6.0%
53	Iceland	0.0%	−0.2%	−0.3%	−0.4%	−0.6%
54	India	−0.1%	−0.1%	−0.2%	−0.3%	−0.4%
55	Indonesia	−1.0%	1.1%	3.6%	5.4%	8.9%
56	Iran (Islamic Republic of)	0.9%	0.6%	−6.2%	−6.8%	−9.8%
57	Iraq	−0.3%	−2.6%	0.4%	−2.9%	−3.2%
58	Ireland	−4.9%	−6.0%	−6.6%	−5.2%	−8.8%
59	Israel	−0.2%	−0.6%	−2.9%	−3.4%	−4.6%

(*Continued*)

Table A3.27 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
60	Italy	−1.9%	−1.8%	−3.3%	−4.0%	−6.8%
61	Jamaica	0.9%	0.2%	−0.5%	−1.7%	−2.3%
62	Japan	−0.9%	−2.0%	−4.7%	−5.2%	−9.0%
63	Jordan	1.4%	0.7%	−0.7%	−0.9%	−1.3%
64	Kazakhstan	–	–	–	–	–
65	Kenya	0.3%	−0.1%	0.2%	0.5%	0.8%
66	Kuwait	–	–	–	–	–
67	Kyrgyzstan	–	–	–	–	–
68	Lao People's Democratic Republic	0.5%	2.1%	4.6%	7.5%	11.5%
69	Latvia	–	–	–	–	–
70	Lesotho	–	–	–	–	–
71	Liberia	–	–	–	–	–
72	Lithuania	–	–	–	–	–
73	Luxembourg	–	–	–	–	–
74	Malawi	0.3%	2.9%	5.3%	7.7%	11.3%
75	Malaysia	0.6%	0.6%	1.1%	2.2%	3.3%
76	Maldives	0.0%	3.0%	3.0%	−0.3%	2.6%
77	Mali	2.0%	4.7%	5.9%	6.3%	10.6%
78	Malta	−3.3%	−8.8%	−8.0%	−5.6%	−12.1%
79	Mauritania	–	–	–	–	–
80	Mauritius	−1.3%	−2.3%	−3.6%	−4.8%	−8.1%
81	Mexico	0.2%	0.3%	0.3%	0.4%	0.6%
82	Mongolia	−1.2%	0.9%	−2.5%	−2.5%	−3.6%
83	Morocco	0.3%	0.3%	−0.3%	−0.3%	−0.3%
84	Mozambique	0.1%	0.2%	0.8%	1.2%	1.7%
85	Myanmar	–	–	–	–	–
86	Namibia	4.4%	5.5%	5.5%	5.1%	8.8%
87	Nepal	0.2%	0.6%	0.3%	−0.1%	0.1%
88	Netherlands	−0.4%	−0.6%	−0.9%	−1.7%	−2.4%
89	New Zealand	−1.5%	−1.2%	−7.8%	−8.4%	−14.3%
90	Nicaragua	2.5%	6.3%	7.2%	5.7%	10.9%
91	Niger	0.0%	1.1%	6.9%	6.9%	10.9%
92	Nigeria	2.1%	3.7%	4.2%	3.3%	6.3%
93	Norway	2.9%	1.6%	1.5%	0.8%	1.3%
94	Pakistan	0.5%	1.0%	0.5%	0.0%	0.9%
95	Panama	0.1%	1.2%	1.2%	1.6%	2.4%
96	Papua New Guinea	–	–	–	–	–
97	Paraguay	−0.8%	4.3%	3.8%	5.5%	8.8%
98	Peru	0.0%	1.4%	1.6%	2.4%	3.8%
99	Philippines	−0.2%	0.2%	0.5%	2.1%	3.2%
100	Poland	−0.2%	−0.5%	−4.1%	−6.4%	−8.9%
101	Portugal	0.2%	1.0%	−0.8%	−2.7%	−2.8%
102	Qatar	1.3%	2.0%	1.3%	2.2%	3.2%
103	Republic of Korea	−1.2%	−2.5%	−3.6%	−5.0%	−7.7%
104	Republic of Moldova	–	–	–	–	–

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
105	Romania	0.0%	0.1%	−1.0%	−1.1%	−2.4%
106	Russian Federation	–	–	–	–	–
107	Rwanda	−4.6%	−2.9%	−1.3%	−1.0%	−1.0%
108	Saudi Arabia	7.1%	8.9%	8.9%	8.9%	14.3%
109	Senegal	−0.2%	−0.4%	−0.6%	−0.6%	−1.0%
110	Serbia	–	–	–	–	–
111	Sierra Leone	–	–	–	–	–
112	Singapore	−9.7%	−12.0%	−21.5%	−22.0%	−34.7%
113	Slovakia	–	–	–	–	–
114	Slovenia	–	–	–	–	–
115	South Africa	0.4%	0.7%	0.5%	0.3%	0.6%
116	Spain	−0.5%	−0.6%	−1.1%	−2.5%	−3.8%
117	Sri Lanka	−0.1%	0.1%	1.8%	2.9%	4.1%
118	Sudan (former)	–	–	–	–	–
119	Swaziland	–	–	–	–	–
120	Sweden	−0.9%	−2.0%	−1.5%	−2.5%	−4.0%
121	Switzerland	−0.3%	−0.6%	−0.9%	−1.1%	−1.8%
122	Syrian Arab Republic	–	–	–	–	–
123	Tajikistan	–	–	–	–	–
124	Thailand	−0.2%	−1.9%	−2.1%	−0.4%	−1.5%
125	Togo	0.7%	3.3%	0.5%	3.5%	5.3%
126	Trinidad and Tobago	−0.3%	−3.4%	−8.5%	−8.5%	−15.6%
127	Tunisia	1.6%	2.5%	3.3%	3.8%	5.4%
128	Turkey	−0.1%	0.5%	1.0%	−0.4%	−0.4%
129	Uganda	–	–	–	–	–
130	Ukraine	–	–	–	–	–
131	United Arab Emirates	–	–	–	–	–
132	United Kingdom	−0.9%	−1.7%	−1.8%	−1.4%	−2.1%
133	United Republic of Tanzania	0.7%	1.5%	2.5%	4.0%	6.5%
134	United States of America	−0.3%	−0.7%	−0.9%	−1.1%	−1.8%
135	Uruguay	0.0%	0.1%	−0.1%	−0.8%	−1.0%
136	Venezuela (Bolivarian Republic of)	−0.2%	−0.3%	−0.3%	−0.3%	−0.5%
137	Viet Nam	1.0%	6.9%	10.6%	12.5%	19.7%
138	Yemen	0.1%	0.0%	−0.1%	0.0%	−0.2%
139	Zambia	0.6%	2.0%	2.3%	3.0%	5.0%
140	Zimbabwe	–	–	–	–	–

Table A3.28 Agriculture land per capita growth (Agriculture land per capita change (%) with respect to base year 1990)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	–	–	–	–	–
2	Albania	–	–	–	–	–
3	Algeria	–	–	–	–	–

(*Continued*)

Table A3.28 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
4	Argentina	−1.3%	−2.9%	−2.5%	−2.1%	−3.9%
5	Armenia	–	–	–	–	–
6	Australia	−1.2%	−3.3%	−5.4%	−9.7%	−14.3%
7	Austria	−1.1%	−2.0%	−3.5%	−4.4%	−7.1%
8	Bahrain	–	–	–	–	–
9	Bangladesh	−4.2%	−7.5%	−9.7%	−11.2%	−16.7%
10	Barbados	−0.3%	−2.2%	−5.4%	−7.4%	−12.0%
11	Belgium	–	–	–	–	–
12	Belize	1.0%	−2.7%	−5.5%	−7.7%	−11.8%
13	Benin	–	–	–	–	–
14	Bolivia (Plurinational State of)	−1.3%	−3.7%	−5.9%	−7.7%	−11.6%
15	Botswana	−2.7%	−5.7%	−7.4%	−9.5%	−14.9%
16	Brazil	−0.2%	−1.9%	−2.6%	−3.8%	−5.2%
17	Bulgaria	0.7%	−0.8%	−0.9%	−0.8%	−2.1%
18	Burundi	−2.8%	−7.4%	−11.6%	−15.3%	−24.1%
19	Cambodia	−2.9%	−5.7%	−5.0%	−5.5%	−8.2%
20	Cameroon	−2.8%	−6.7%	−9.6%	−11.3%	−18.0%
21	Canada	−1.0%	−2.6%	−3.8%	−6.5%	−9.5%
22	Central African Republic	–	–	–	–	–
23	Chile	−2.2%	−4.7%	−5.0%	−6.5%	−9.8%
24	China	−0.5%	−1.9%	−2.9%	−3.6%	−5.3%
25	Colombia	−4.1%	−6.3%	−13.0%	−15.9%	−23.9%
26	Congo	−2.6%	−6.4%	−9.1%	−12.4%	−18.9%
27	Costa Rica	−4.8%	−10.9%	−13.1%	−14.4%	−21.9%
28	Côte d'Ivoire	−2.4%	−6.6%	−8.0%	−9.9%	−15.5%
29	Croatia	–	–	–	–	–
30	Cuba	–	–	–	–	–
31	Cyprus	−4.4%	−8.0%	−6.3%	−16.2%	−20.6%
32	Czech Republic	–	–	–	–	–
33	Democratic Republic of the Congo	–	–	–	–	–
34	Denmark	−0.8%	−2.2%	−2.0%	−3.3%	−5.1%
35	Dominican Republic	−1.6%	−4.6%	−7.3%	−9.1%	−13.9%
36	Ecuador	−1.6%	−4.5%	−8.2%	−10.1%	−15.7%
37	Egypt	2.3%	0.6%	0.0%	−1.2%	−3.1%
38	El Salvador	−0.6%	−1.0%	−0.5%	−1.4%	−1.0%
39	Estonia	–	–	–	–	–
40	Fiji	0.2%	−1.6%	−1.9%	−3.2%	−5.1%
41	Finland	−1.8%	−2.8%	−2.5%	−2.9%	−5.1%
42	France	−0.6%	−1.6%	−2.7%	−4.0%	−6.2%
43	Gabon	–	–	–	–	–
44	Gambia	−3.2%	2.6%	2.3%	6.4%	4.3%
45	Germany	−1.3%	−2.2%	−2.3%	−2.6%	−3.2%
46	Ghana	−1.9%	−2.9%	−4.9%	−7.1%	−10.8%
47	Greece	−0.8%	−3.3%	−4.2%	−5.0%	−7.0%
48	Guatemala	–	–	–	–	–

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
49	Guyana	−0.2%	−1.1%	−1.5%	−1.9%	−3.2%
50	Haiti	–	–	–	–	–
51	Honduras	−1.7%	−8.7%	−9.3%	−10.7%	−16.8%
52	Hungary	−0.8%	−2.1%	−1.8%	−3.8%	−4.4%
53	Iceland	−1.0%	−2.6%	−4.0%	−5.7%	−8.5%
54	India	−2.0%	−4.7%	−6.8%	−8.5%	−12.7%
55	Indonesia	−2.6%	−2.7%	−2.0%	−1.9%	−2.7%
56	Iran (Islamic Republic of)	−0.6%	−3.4%	−11.3%	−13.1%	−19.2%
57	Iraq	−3.1%	−9.6%	−9.9%	−15.7%	−23.4%
58	Ireland	−5.4%	−7.8%	−10.4%	−11.2%	−16.8%
59	Israel	−3.6%	−7.7%	−12.1%	−14.6%	−21.0%
60	Italy	−1.9%	−1.9%	−3.8%	−5.0%	−9.0%
61	Jamaica	0.1%	−1.8%	−3.0%	−4.6%	−6.4%
62	Japan	−1.2%	−2.6%	−5.5%	−6.1%	−9.8%
63	Jordan	−3.6%	−7.8%	−11.5%	−16.1%	−24.2%
64	Kazakhstan	–	–	–	–	–
65	Kenya	−2.7%	−6.9%	−9.6%	−12.2%	−18.8%
66	Kuwait	–	–	–	–	–
67	Kyrgyzstan	–	–	–	–	–
68	Lao People's Democratic Republic	−2.2%	−3.6%	−3.0%	−2.4%	−4.2%
69	Latvia	–	–	–	–	–
70	Lesotho	–	–	–	–	–
71	Liberia	–	–	–	–	–
72	Lithuania	–	–	–	–	–
73	Luxembourg	–	–	–	–	–
74	Malawi	−0.6%	−1.5%	−2.4%	−3.7%	−8.1%
75	Malaysia	−2.0%	−5.5%	−7.4%	−8.3%	−12.4%
76	Maldives	−3.1%	−3.8%	−6.5%	−12.5%	−16.3%
77	Mali	−0.6%	−2.0%	−4.6%	−8.1%	−12.4%
78	Malta	−4.2%	−10.5%	−11.0%	−9.2%	−17.5%
79	Mauritania	–	–	–	–	–
80	Mauritius	−2.4%	−5.1%	−7.1%	−8.7%	−13.3%
81	Mexico	−1.7%	−4.2%	−5.7%	−7.5%	−11.5%
82	Mongolia	−2.2%	−1.4%	−6.0%	−7.6%	−12.4%
83	Morocco	−1.4%	−3.4%	−5.1%	−6.4%	−10.0%
84	Mozambique	−3.3%	−7.3%	−10.1%	−12.9%	−19.7%
85	Myanmar	–	–	–	–	–
86	Namibia	1.2%	−2.0%	−3.6%	−5.8%	−8.8%
87	Nepal	−2.4%	−5.1%	−7.1%	−8.7%	−12.6%
88	Netherlands	−1.1%	−2.2%	−3.0%	−4.3%	−6.3%
89	New Zealand	−3.5%	−4.8%	−12.6%	−14.3%	−22.6%
90	Nicaragua	0.3%	1.3%	0.4%	−2.5%	−2.1%
91	Niger	−3.3%	−7.3%	−6.4%	−10.7%	−17.3%
92	Nigeria	−0.4%	−2.6%	−5.2%	−9.1%	−13.5%
93	Norway	2.4%	0.2%	−0.7%	−2.8%	−5.0%

(*Continued*)

Table A3.28 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
94	Pakistan	−2.1%	−5.1%	−8.0%	−10.8%	−15.8%
95	Panama	−2.0%	−3.8%	−6.0%	−7.6%	−11.8%
96	Papua New Guinea	–	–	–	–	–
97	Paraguay	−3.2%	−1.5%	−4.1%	−4.3%	−6.1%
98	Peru	−1.9%	−2.8%	−4.2%	−4.9%	−7.6%
99	Philippines	−2.6%	−5.4%	−7.5%	−7.8%	−11.8%
100	Poland	−0.4%	−0.6%	−4.1%	−6.3%	−8.8%
101	Portugal	0.1%	0.3%	−2.0%	−4.1%	−4.1%
102	Qatar	0.3%	−3.5%	−12.0%	−26.4%	−37.7%
103	Republic of Korea	−2.2%	−4.7%	−6.4%	−8.3%	−12.6%
104	Republic of Moldova	–	–	–	–	–
105	Romania	0.5%	1.0%	1.1%	2.4%	2.7%
106	Russian Federation	–	–	–	–	–
107	Rwanda	−0.6%	−5.3%	−6.5%	−9.3%	−14.6%
108	Saudi Arabia	4.1%	1.9%	−1.8%	−4.9%	−7.5%
109	Senegal	−3.1%	−7.0%	−10.2%	−13.3%	−20.8%
110	Serbia	–	–	–	–	–
111	Sierra Leone	–	–	–	–	–
112	Singapore	−12.3%	−17.9%	−27.8%	−31.4%	−46.3%
113	Slovakia	–	–	–	–	–
114	Slovenia	–	–	–	–	–
115	South Africa	−1.7%	−4.8%	−6.7%	−8.4%	−12.8%
116	Spain	−0.8%	−1.5%	−3.9%	−6.8%	−9.4%
117	Sri Lanka	−1.2%	−2.1%	−1.4%	−1.3%	−2.5%
118	Sudan (former)	–	–	–	–	–
119	Swaziland	–	–	–	–	–
120	Sweden	−1.5%	−2.8%	−2.8%	−4.7%	−7.9%
121	Switzerland	−1.2%	−2.3%	−3.4%	−4.8%	−8.1%
122	Syrian Arab Republic	–	–	–	–	–
123	Tajikistan	–	–	–	–	–
124	Thailand	−1.1%	−4.3%	−5.8%	−4.4%	−7.3%
125	Togo	−1.8%	−3.0%	−8.8%	−9.2%	−14.7%
126	Trinidad and Tobago	−0.8%	−4.3%	−9.8%	−10.4%	−18.4%
127	Tunisia	−0.3%	−1.5%	−2.0%	−2.7%	−4.6%
128	Turkey	−1.7%	−3.4%	−4.6%	−7.4%	−11.7%
129	Uganda	–	–	–	–	–
130	Ukraine	–	–	–	–	–
131	United Arab Emirates	–	–	–	–	–
132	United Kingdom	−1.2%	−2.4%	−3.1%	−3.6%	−6.0%
133	United Republic of Tanzania	−2.5%	−5.6%	−7.9%	−10.1%	−15.9%
134	United States of America	−1.6%	−3.7%	−5.0%	−6.3%	−9.5%
135	Uruguay	−0.7%	−1.6%	−1.8%	−2.8%	−4.1%
136	Venezuela (Bolivarian Republic of)	−2.4%	−5.3%	−7.5%	−9.3%	−13.9%
137	Viet Nam	−0.7%	2.6%	4.6%	5.0%	7.6%
138	Yemen	−4.7%	−9.4%	−12.7%	−15.7%	−23.1%
139	Zambia	−1.9%	−4.5%	−7.3%	−9.9%	−15.7%
140	Zimbabwe	–	–	–	–	–

Table A3.29 Forest resources (Forest resources in billions of constant 2005 US$)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	9	9	9	9	9	9
2	Albania	6	6	6	6	6	6
3	Algeria	10	9	9	8	8	9
4	Argentina	560	552	544	536	537	524
5	Armenia	3	3	2	2	2	2
6	Australia	642	642	643	637	616	534
7	Austria	32	35	37	39	39	37
8	Bahrain	0	0	–	0	0	0
9	Bangladesh	16	15	15	15	15	15
10	Barbados	0	0	0	0	0	0
11	Belgium	4	4	5	5	6	5
12	Belize	13	13	13	12	12	12
13	Benin	37	35	32	31	29	29
14	Bolivia (Plurinational State of)	670	655	641	626	610	594
15	Botswana	60	58	55	53	50	48
16	Brazil	6,662	6,501	6,341	6,205	6,057	6,042
17	Bulgaria	16	18	19	22	26	5
18	Burundi	1	1	1	1	1	1
19	Cambodia	196	185	173	160	150	142
20	Cameroon	221	211	201	191	181	36
21	Canada	2,662	2,643	2,624	2,606	2,593	1,627
22	Central African Republic	211	209	208	207	205	205
23	Chile	85	86	86	87	86	88
24	China	1,159	1,089	1,019	887	923	966
25	Colombia	703	697	691	684	677	135
26	Congo	224	223	222	221	220	220
27	Costa Rica	22	21	21	22	23	40
28	Côte d'Ivoire	42	53	64	64	64	64
29	Croatia	19	20	21	22	23	22
30	Cuba	14	17	20	22	23	22
31	Cyprus	1	1	1	1	1	1
32	Czech Republic	0	0	0	0	0	0
33	Democratic Republic of the Congo	1,320	1,307	1,294	1,281	1,268	1,258
34	Denmark	1	1	1	2	2	1
35	Dominican Republic	18	18	18	18	18	18
36	Ecuador	163	155	147	139	131	141
37	Egypt	–	–	–	–	–	–
38	El Salvador	2	2	1	1	1	1
39	Estonia	19	14	9	21	21	20
40	Fiji	4	4	4	4	4	4
41	Finland	150	153	156	150	146	140
42	France	106	109	113	119	122	121
43	Gabon	1,070	1,070	1,070	1,070	1,070	1,073
44	Gambia	2	2	2	2	2	2

(*Continued*)

Table A3.29 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
45	Germany	74	78	83	85	86	89
46	Ghana	45	41	37	33	29	46
47	Greece	23	24	25	26	27	28
48	Guatemala	106	99	93	87	79	84
49	Guyana	180	180	180	180	180	212
50	Haiti	7	6	6	5	5	4
51	Honduras	96	86	75	68	61	56
52	Hungary	3	3	3	3	3	3
53	Iceland	0	0	0	0	0	0
54	India	456	460	465	477	488	468
55	Indonesia	1,435	1,357	1,279	1,227	1,147	1,067
56	Iran (Islamic Republic of)	465	466	467	460	467	375
57	Iraq	3	3	3	3	3	3
58	Ireland	1	1	1	1	1	1
59	Israel	0	0	0	0	0	0
60	Italy	119	131	144	157	169	154
61	Jamaica	2	2	2	2	2	2
62	Japan	130	138	145	155	155	137
63	Jordan	0	0	0	0	0	0
64	Kazakhstan	12	12	12	12	12	12
65	Kenya	24	23	22	21	20	24
66	Kuwait	–	–	–	–	–	–
67	Kyrgyzstan	5	6	6	6	8	8
68	Lao People's Democratic Republic	138	135	131	128	124	135
69	Latvia	20	21	22	23	26	24
70	Lesotho	0	0	0	0	0	0
71	Liberia	36	35	34	33	32	31
72	Lithuania	16	17	17	18	18	17
73	Luxembourg	1	1	1	1	1	1
74	Malawi	19	18	17	16	14	14
75	Malaysia	216	211	207	198	191	209
76	Maldives	0	0	0	0	0	0
77	Mali	64	62	60	57	54	30
78	Malta	0	0	0	0	0	0
79	Mauritania	2	2	1	1	1	1
80	Mauritius	0	0	0	0	0	0
81	Mexico	330	319	309	297	290	319
82	Mongolia	85	82	79	76	73	79
83	Morocco	23	23	23	24	24	25
84	Mozambique	193	189	184	179	174	171
85	Myanmar	192	180	169	160	152	141
86	Namibia	38	36	34	33	31	30
87	Nepal	212	192	171	159	159	159
88	Netherlands	–	–	–	–	–	–

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
89	New Zealand	1,339	1,339	1,339	1,295	1,669	1,505
90	Nicaragua	32	30	27	25	22	23
91	Niger	9	8	6	6	5	5
92	Nigeria	81	72	64	56	48	39
93	Norway	53	54	55	58	62	65
94	Pakistan	1,197	1,057	917	779	646	541
95	Panama	35	33	31	30	29	36
96	Papua New Guinea	306	299	292	285	278	385
97	Paraguay	88	85	81	77	73	66
98	Peru	1,054	1,044	1,034	1,026	1,011	1,081
99	Philippines	58	60	61	64	65	60
100	Poland	4	5	5	5	6	6
101	Portugal	15	15	16	15	15	11
102	Qatar	–	–	–	–	–	–
103	Republic of Korea	90	113	136	162	182	148
104	Republic of Moldova	6	6	7	7	7	1
105	Romania	93	93	93	93	96	98
106	Russian Federation	6,485	6,479	6,473	6,466	6,498	6,478
107	Rwanda	1	1	1	1	1	1
108	Saudi Arabia	6	6	6	6	6	6
109	Senegal	59	57	55	53	51	51
110	Serbia	25	26	27	30	37	33
111	Sierra Leone	18	17	16	15	15	14
112	Singapore	0	0	0	0	0	0
113	Slovakia	10	10	11	11	11	11
114	Slovenia	14	15	17	18	20	18
115	South Africa	38	38	37	37	37	37
116	Spain	64	73	82	84	88	86
117	Sri Lanka	56	52	47	43	40	45
118	Sudan (former)	352	336	320	317	313	157
119	Swaziland	1	2	2	2	2	2
120	Sweden	181	178	174	176	172	130
121	Switzerland	18	18	19	19	19	19
122	Syrian Arab Republic	1	1	1	1	1	0
123	Tajikistan	1	1	1	1	1	1
124	Thailand	122	119	116	112	109	129
125	Togo	3	2	2	1	1	1
126	Trinidad and Tobago	6	6	5	5	5	2
127	Tunisia	2	1	1	1	1	1
128	Turkey	188	188	188	178	163	164
129	Uganda	21	19	17	15	13	10
130	Ukraine	43	47	51	53	55	51
131	United Arab Emirates	–	–	–	–	–	–
132	United Kingdom	7	8	8	8	9	2

(*Continued*)

Table A3.29 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
133	United Republic of Tanzania	261	248	235	222	209	347
134	United States of America	3,463	3,529	3,596	3,759	3,934	3,734
135	Uruguay	3	3	3	3	3	3
136	Venezuela (Bolivarian Republic of)	244	237	230	224	217	226
137	Viet Nam	80	85	90	93	91	92
138	Yemen	2	2	2	2	2	2
139	Zambia	319	314	309	304	299	298
140	Zimbabwe	93	86	79	72	65	60

Table A3.30 Forest resources per capita (Forest resources per capita in thousands of constant 2005 US$)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	0.7	0.5	0.4	0.4	0.3	0.3
2	Albania	1.9	2.0	2.0	2.1	2.2	2.2
3	Algeria	0.4	0.3	0.3	0.3	0.2	0.2
4	Argentina	17.1	15.8	14.7	13.7	13.0	12.2
5	Armenia	0.8	0.8	0.8	0.8	0.7	0.8
6	Australia	37.6	35.5	33.6	31.2	28.0	22.8
7	Austria	4.2	4.4	4.6	4.7	4.6	4.3
8	Bahrain	0.0	0.0	–	0.0	0.0	0.0
9	Bangladesh	0.1	0.1	0.1	0.1	0.1	0.1
10	Barbados	0.1	0.1	0.1	0.1	0.1	0.1
11	Belgium	0.4	0.4	0.5	0.5	0.5	0.5
12	Belize	71.0	62.4	50.6	42.7	36.3	32.7
13	Benin	7.4	5.8	4.7	3.8	3.1	2.8
14	Bolivia (Plurinational State of)	97.7	86.6	76.9	68.7	61.5	56.3
15	Botswana	43.6	36.6	31.8	28.2	24.5	21.8
16	Brazil	44.3	39.9	36.1	32.9	30.5	29.3
17	Bulgaria	1.9	2.1	2.4	2.9	3.5	0.7
18	Burundi	0.3	0.2	0.1	0.1	0.1	0.1
19	Cambodia	21.8	17.3	14.2	12.0	10.5	9.3
20	Cameroon	18.3	15.2	12.6	10.5	8.8	1.6
21	Canada	95.8	90.0	85.3	80.6	76.2	45.8
22	Central African Republic	71.7	62.8	55.8	50.9	46.2	42.6
23	Chile	6.4	6.0	5.7	5.4	5.0	4.9
24	China	1.0	0.9	0.8	0.7	0.7	0.7
25	Colombia	20.5	18.6	17.1	15.8	14.8	2.8
26	Congo	93.7	81.8	71.4	63.1	54.2	48.9
27	Costa Rica	7.0	6.1	5.3	5.1	5.0	8.4
28	Côte d'Ivoire	3.5	3.7	3.9	3.5	3.2	2.9
29	Croatia	4.0	4.3	4.8	5.0	5.3	5.2
30	Cuba	1.3	1.5	1.8	2.0	2.0	1.9

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
31	Cyprus	1.3	1.2	1.1	1.0	1.0	0.9
32	Czech Republic	0.0	0.0	0.0	0.0	0.0	0.0
33	Democratic Republic of the Congo	37.7	31.0	26.9	22.8	19.2	16.8
34	Denmark	0.2	0.2	0.2	0.3	0.3	0.3
35	Dominican Republic	2.6	2.3	2.1	2.0	1.8	1.7
36	Ecuador	16.0	13.5	11.6	10.1	8.8	8.9
37	Egypt	–	–	–	–	–	–
38	El Salvador	0.3	0.3	0.3	0.2	0.2	0.2
39	Estonia	12.4	9.9	6.4	15.4	15.5	15.4
40	Fiji	4.9	4.6	4.4	4.3	4.1	4.0
41	Finland	30.1	30.0	30.2	28.7	27.2	25.7
42	France	1.8	1.8	1.9	1.9	1.9	1.8
43	Gabon	1,123.1	984.4	868.4	776.3	693.6	635.8
44	Gambia	2.4	2.1	1.9	1.6	1.4	1.2
45	Germany	0.9	1.0	1.0	1.0	1.1	1.1
46	Ghana	3.1	2.4	2.0	1.5	1.2	1.7
47	Greece	2.2	2.3	2.3	2.4	2.4	2.6
48	Guatemala	11.6	9.6	7.9	6.6	5.4	5.3
49	Guyana	250.3	248.1	242.9	242.8	239.3	277.6
50	Haiti	0.9	0.8	0.7	0.6	0.5	0.4
51	Honduras	19.6	15.3	12.1	9.9	8.2	7.0
52	Hungary	0.3	0.3	0.3	0.3	0.3	0.3
53	Iceland	0.1	0.1	0.1	0.1	0.1	0.1
54	India	0.5	0.5	0.4	0.4	0.4	0.4
55	Indonesia	7.9	6.9	6.0	5.4	4.7	4.2
56	Iran (Islamic Republic of)	8.3	7.7	7.1	6.6	6.3	4.8
57	Iraq	0.2	0.2	0.1	0.1	0.1	0.1
58	Ireland	0.2	0.2	0.2	0.2	0.1	0.1
59	Israel	0.1	0.1	0.0	0.0	0.0	0.0
60	Italy	2.1	2.3	2.5	2.7	2.9	2.5
61	Jamaica	0.9	0.8	0.8	0.8	0.7	0.7
62	Japan	1.1	1.1	1.1	1.2	1.2	1.1
63	Jordan	0.1	0.1	0.1	0.1	0.1	0.0
64	Kazakhstan	0.7	0.8	0.8	0.8	0.8	0.7
65	Kenya	1.0	0.8	0.7	0.6	0.5	0.5
66	Kuwait	–	–	–	–	–	–
67	Kyrgyzstan	1.2	1.3	1.2	1.2	1.5	1.3
68	Lao People's Democratic Republic	32.5	27.7	24.6	22.2	19.8	20.2
69	Latvia	7.4	8.5	9.4	10.4	12.2	12.1
70	Lesotho	0.1	0.1	0.1	0.1	0.1	0.1
71	Liberia	17.2	16.8	11.7	10.0	8.0	7.0
72	Lithuania	4.4	4.6	4.9	5.3	5.7	5.8
73	Luxembourg	3.0	3.2	3.3	3.1	2.8	2.5
74	Malawi	2.0	1.8	1.5	1.2	1.0	0.8

(*Continued*)

Table A3.30 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
75	Malaysia	11.9	10.2	8.8	7.7	6.8	7.0
76	Maldives	0.0	0.0	0.0	0.0	0.0	0.0
77	Mali	7.5	6.4	5.4	4.5	3.6	1.7
78	Malta	0.0	0.0	0.0	0.0	0.0	0.0
79	Mauritania	0.9	0.7	0.5	0.4	0.3	0.2
80	Mauritius	0.4	0.4	0.3	0.3	0.3	0.3
81	Mexico	3.9	3.4	3.0	2.7	2.4	2.5
82	Mongolia	38.9	35.7	33.0	30.2	27.0	27.2
83	Morocco	0.9	0.9	0.8	0.8	0.7	0.7
84	Mozambique	14.5	11.8	10.1	8.5	7.2	6.3
85	Myanmar	4.6	4.0	3.5	3.2	2.9	2.6
86	Namibia	26.6	21.8	18.2	16.2	14.3	12.5
87	Nepal	11.3	9.0	7.2	6.3	5.9	5.7
88	Netherlands	–	–	–	–	–	–
89	New Zealand	402.1	364.5	347.0	313.2	383.6	333.6
90	Nicaragua	7.8	6.5	5.4	4.6	3.9	3.9
91	Niger	1.2	0.8	0.6	0.4	0.3	0.3
92	Nigeria	0.8	0.7	0.5	0.4	0.3	0.2
93	Norway	12.4	12.3	12.2	12.6	12.6	12.7
94	Pakistan	11.1	8.6	6.6	5.1	3.8	2.9
95	Panama	14.1	11.9	10.1	9.0	8.1	9.4
96	Papua New Guinea	73.5	63.3	54.3	46.8	40.6	51.6
97	Paraguay	21.0	17.8	15.2	13.3	11.8	10.0
98	Peru	48.3	43.4	39.9	37.2	34.4	34.9
99	Philippines	0.9	0.9	0.8	0.7	0.7	0.6
100	Poland	0.1	0.1	0.1	0.1	0.2	0.2
101	Portugal	1.5	1.5	1.5	1.5	1.4	1.0
102	Qatar	–	–	–	–	–	–
103	Republic of Korea	2.1	2.5	2.9	3.4	3.7	2.9
104	Republic of Moldova	1.6	1.7	1.8	2.0	2.1	0.4
105	Romania	4.0	4.1	4.1	4.4	4.7	4.9
106	Russian Federation	43.7	43.7	44.2	45.1	45.5	45.0
107	Rwanda	0.1	0.1	0.1	0.1	0.1	0.1
108	Saudi Arabia	0.4	0.3	0.3	0.2	0.2	0.2
109	Senegal	7.8	6.5	5.6	4.7	4.0	3.5
110	Serbia	3.3	3.4	3.5	4.0	5.0	4.7
111	Sierra Leone	4.5	4.4	4.0	3.0	2.5	2.3
112	Singapore	0.0	0.0	0.0	0.0	0.0	0.0
113	Slovakia	1.8	1.9	2.0	2.1	2.1	2.0
114	Slovenia	7.2	7.8	8.3	9.0	9.6	8.6
115	South Africa	1.1	1.0	0.8	0.8	0.7	0.7
116	Spain	1.7	1.9	2.0	1.9	1.9	1.8
117	Sri Lanka	3.3	2.9	2.5	2.2	2.0	2.2
118	Sudan (former)	17.6	13.6	11.4	9.9	8.7	4.0

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
119	Swaziland	1.7	1.7	1.6	1.7	1.6	1.6
120	Sweden	21.2	20.1	19.6	19.5	18.4	13.4
121	Switzerland	2.6	2.6	2.6	2.5	2.4	2.3
122	Syrian Arab Republic	0.1	0.1	0.1	0.0	0.0	0.0
123	Tajikistan	0.3	0.3	0.2	0.2	0.2	0.2
124	Thailand	2.2	2.0	1.9	1.7	1.6	1.9
125	Togo	0.7	0.5	0.4	0.3	0.2	0.1
126	Trinidad and Tobago	4.6	4.4	4.3	4.1	3.9	1.6
127	Tunisia	0.2	0.2	0.1	0.1	0.1	0.1
128	Turkey	3.5	3.2	3.0	2.6	2.3	2.1
129	Uganda	1.2	0.9	0.7	0.5	0.4	0.3
130	Ukraine	0.8	0.9	1.0	1.1	1.2	1.1
131	United Arab Emirates	–	–	–	–	–	–
132	United Kingdom	0.1	0.1	0.1	0.1	0.1	0.0
133	United Republic of Tanzania	10.2	8.3	6.9	5.7	4.6	6.7
134	United States of America	13.9	13.3	12.7	12.7	12.7	11.7
135	Uruguay	1.0	1.0	1.0	1.0	1.0	1.0
136	Venezuela (Bolivarian Republic of)	12.3	10.7	9.4	8.4	7.5	7.4
137	Viet Nam	1.2	1.2	1.2	1.1	1.0	1.0
138	Yemen	0.2	0.2	0.1	0.1	0.1	0.1
139	Zambia	39.2	33.9	29.2	25.2	21.5	19.0
140	Zimbabwe	8.8	7.3	6.3	5.6	4.7	4.0

Table A3.31 Forest growth (Forest change (%) with respect to base year 1990)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	0.0%	0.0%	0.0%	0.0%	−0.1%
2	Albania	0.0%	0.0%	−0.1%	0.1%	0.2%
3	Algeria	−0.7%	−1.9%	−3.3%	−4.8%	−2.2%
4	Argentina	−0.3%	−0.7%	−1.1%	−1.1%	−2.2%
5	Armenia	−1.2%	−3.0%	−4.7%	−7.5%	−4.0%
6	Australia	0.0%	0.0%	−0.2%	−1.0%	−6.0%
7	Austria	1.4%	3.4%	4.8%	4.5%	4.5%
8	Bahrain	−12.9%	–	−15.6%	0.3%	−41.3%
9	Bangladesh	−0.4%	−0.9%	−1.5%	−0.8%	−1.9%
10	Barbados	0.0%	0.0%	−0.1%	−0.1%	−7.0%
11	Belgium	3.1%	7.4%	9.9%	10.7%	13.1%
12	Belize	−0.6%	−1.5%	−2.4%	−3.2%	−4.7%
13	Benin	−1.3%	−3.2%	−4.4%	−5.7%	−7.6%
14	Bolivia (Plurinational State of)	−0.4%	−1.1%	−1.7%	−2.3%	−3.9%
15	Botswana	−0.8%	−2.2%	−3.3%	−4.5%	−7.0%
16	Brazil	−0.5%	−1.2%	−1.8%	−2.4%	−3.2%
17	Bulgaria	1.8%	4.4%	8.3%	11.8%	−32.1%
18	Burundi	−5.4%	−15.4%	−16.5%	−17.2%	−11.9%

(*Continued*)

Table A3.31 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
19	Cambodia	−1.2%	−3.0%	−4.9%	−6.4%	−10.2%
20	Cameroon	−0.9%	−2.3%	−3.6%	−4.9%	−45.3%
21	Canada	−0.1%	−0.4%	−0.5%	−0.7%	−15.1%
22	Central African Republic	−0.1%	−0.3%	−0.5%	−0.7%	−0.9%
23	Chile	0.2%	0.5%	0.6%	0.3%	1.2%
24	China	−1.2%	−3.2%	−6.5%	−5.5%	−5.9%
25	Colombia	−0.2%	−0.5%	−0.7%	−0.9%	−42.2%
26	Congo	−0.1%	−0.2%	−0.3%	−0.4%	−0.5%
27	Costa Rica	−0.4%	−1.0%	0.1%	1.2%	22.5%
28	Côte d'Ivoire	4.8%	11.2%	11.2%	11.1%	14.7%
29	Croatia	1.1%	2.7%	4.0%	5.3%	5.0%
30	Cuba	3.8%	9.0%	12.7%	13.7%	16.7%
31	Cyprus	0.5%	1.4%	1.7%	2.2%	2.5%
32	Czech Republic	1.0%	2.5%	2.5%	3.7%	−13.3%
33	Democratic Republic of the Congo	−0.2%	−0.5%	−0.7%	−1.0%	−1.6%
34	Denmark	1.2%	2.9%	9.6%	8.8%	10.4%
35	Dominican Republic	0.0%	0.0%	−0.1%	−0.4%	−1.2%
36	Ecuador	−1.0%	−2.6%	−3.9%	−5.2%	−4.7%
37	Egypt	–	–	–	–	–
38	El Salvador	−1.3%	−3.4%	−5.3%	−7.2%	−11.6%
39	Estonia	−6.1%	−17.6%	1.8%	1.5%	1.3%
40	Fiji	−0.1%	−0.3%	−0.5%	−0.7%	−0.1%
41	Finland	0.4%	1.0%	0.0%	−0.7%	−2.2%
42	France	0.7%	1.8%	3.0%	3.7%	4.6%
43	Gabon	0.0%	0.0%	0.0%	0.0%	0.1%
44	Gambia	0.4%	1.1%	1.6%	2.1%	3.2%
45	Germany	1.2%	2.8%	3.7%	3.9%	6.6%
46	Ghana	−1.9%	−4.8%	−7.5%	−10.4%	0.5%
47	Greece	0.9%	2.2%	3.2%	4.3%	7.0%
48	Guatemala	−1.3%	−3.3%	−4.9%	−7.0%	−7.3%
49	Guyana	0.0%	0.0%	0.0%	0.0%	5.6%
50	Haiti	−1.5%	−3.8%	−5.9%	−8.4%	−13.2%
51	Honduras	−2.2%	−5.8%	−8.1%	−10.6%	−16.7%
52	Hungary	1.6%	4.0%	5.4%	5.6%	6.2%
53	Iceland	−0.8%	−2.0%	−2.1%	−1.7%	31.7%
54	India	0.2%	0.5%	1.2%	1.7%	0.9%
55	Indonesia	−1.1%	−2.8%	−3.9%	−5.5%	−9.4%
56	Iran (Islamic Republic of)	0.0%	0.1%	−0.3%	0.1%	−6.9%
57	Iraq	0.2%	0.4%	0.7%	0.7%	0.9%
58	Ireland	−1.0%	−2.6%	−3.4%	−5.2%	−9.9%
59	Israel	−0.2%	−0.5%	0.3%	−0.1%	3.7%
60	Italy	2.1%	5.0%	7.2%	9.3%	9.2%
61	Jamaica	−0.2%	−0.5%	−0.6%	−1.1%	−1.1%
62	Japan	1.2%	2.8%	4.5%	4.6%	1.7%
63	Jordan	0.0%	0.0%	0.0%	0.0%	−0.1%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
64	Kazakhstan	−0.3%	−0.8%	0.5%	0.3%	0.4%
65	Kenya	−0.8%	−1.9%	−3.0%	−3.9%	0.6%
66	Kuwait	–	–	–	–	–
67	Kyrgyzstan	0.9%	2.3%	3.4%	10.4%	12.0%
68	Lao People's Democratic Republic	−0.5%	−1.2%	−1.9%	−2.6%	−0.6%
69	Latvia	1.2%	3.0%	4.1%	6.6%	6.9%
70	Lesotho	−0.1%	−0.1%	−0.2%	−0.3%	−1.8%
71	Liberia	−0.6%	−1.6%	−2.4%	−3.2%	−5.1%
72	Lithuania	0.5%	1.1%	2.0%	2.0%	1.4%
73	Luxembourg	2.2%	5.2%	5.2%	5.2%	5.8%
74	Malawi	−1.1%	−2.7%	−4.6%	−6.5%	−9.9%
75	Malaysia	−0.4%	−1.1%	−2.1%	−3.1%	−1.1%
76	Maldives	0.0%	0.0%	0.0%	0.0%	−41.5%
77	Mali	−0.6%	−1.5%	−2.6%	−4.0%	−22.5%
78	Malta	0.0%	0.0%	0.0%	0.0%	−41.5%
79	Mauritania	−2.7%	−7.2%	−11.6%	−14.3%	−21.0%
80	Mauritius	−0.1%	−0.4%	−2.6%	−2.8%	−3.7%
81	Mexico	−0.6%	−1.6%	−2.5%	−3.1%	−1.1%
82	Mongolia	−0.7%	−1.7%	−2.7%	−3.6%	−2.4%
83	Morocco	0.0%	0.1%	0.6%	0.4%	2.1%
84	Mozambique	−0.5%	−1.3%	−2.0%	−2.6%	−4.1%
85	Myanmar	−1.2%	−3.1%	−4.4%	−5.6%	−9.6%
86	Namibia	−0.8%	−2.2%	−3.3%	−4.5%	−7.2%
87	Nepal	−2.0%	−5.2%	−6.8%	−6.8%	−9.0%
88	Netherlands	–	–	–	–	–
89	New Zealand	0.0%	0.0%	−0.8%	5.7%	4.0%
90	Nicaragua	−1.6%	−4.1%	−6.4%	−9.0%	−10.3%
91	Niger	−3.6%	−9.7%	−11.7%	−13.7%	−18.3%
92	Nigeria	−2.1%	−5.4%	−8.6%	−12.1%	−21.2%
93	Norway	0.4%	1.0%	2.6%	4.1%	7.5%
94	Pakistan	−2.5%	−6.4%	−10.2%	−14.3%	−23.2%
95	Panama	−1.2%	−3.1%	−3.7%	−4.2%	1.5%
96	Papua New Guinea	−0.5%	−1.1%	−1.7%	−2.3%	8.0%
97	Paraguay	−0.9%	−2.2%	−3.4%	−4.6%	−9.5%
98	Peru	−0.2%	−0.5%	−0.7%	−1.0%	0.9%
99	Philippines	0.5%	1.4%	2.4%	3.0%	1.2%
100	Poland	2.1%	5.1%	7.7%	9.8%	12.2%
101	Portugal	0.9%	2.1%	1.4%	1.3%	−9.7%
102	Qatar	–	–	–	–	–
103	Republic of Korea	4.6%	10.8%	15.8%	19.2%	17.9%
104	Republic of Moldova	1.3%	3.2%	4.9%	6.3%	−36.6%
105	Romania	0.0%	0.0%	0.1%	0.8%	1.9%
106	Russian Federation	0.0%	0.0%	−0.1%	0.1%	0.0%
107	Rwanda	−1.4%	−3.5%	−2.5%	−2.8%	−8.7%
108	Saudi Arabia	0.0%	0.0%	0.0%	0.0%	0.0%

(*Continued*)

Table A3.31 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
109	Senegal	−0.6%	−1.5%	−2.5%	−3.2%	−4.6%
110	Serbia	0.6%	1.6%	4.6%	10.1%	10.1%
111	Sierra Leone	−0.9%	−2.4%	−3.5%	−4.7%	−6.7%
112	Singapore	0.0%	0.0%	0.0%	0.0%	80.6%
113	Slovakia	0.9%	2.2%	3.3%	4.1%	4.0%
114	Slovenia	1.5%	3.7%	5.9%	8.2%	7.3%
115	South Africa	−0.1%	−0.3%	−0.4%	−0.5%	−0.6%
116	Spain	2.7%	6.4%	6.8%	8.1%	10.0%
117	Sri Lanka	−1.6%	−4.2%	−6.5%	−8.3%	−7.1%
118	Sudan (former)	−0.9%	−2.3%	−2.6%	−2.9%	−23.6%
119	Swaziland	1.5%	3.6%	5.2%	6.7%	11.1%
120	Sweden	−0.4%	−1.1%	−0.7%	−1.3%	−10.5%
121	Switzerland	0.5%	1.4%	1.7%	2.1%	2.3%
122	Syrian Arab Republic	0.0%	0.1%	0.0%	0.0%	−41.5%
123	Tajikistan	−0.1%	−0.2%	−0.3%	−0.3%	−0.4%
124	Thailand	−0.4%	−1.1%	−2.0%	−2.8%	1.9%
125	Togo	−3.4%	−9.1%	−14.8%	−22.0%	−37.3%
126	Trinidad and Tobago	−0.3%	−0.9%	−1.4%	−2.2%	−28.1%
127	Tunisia	−0.9%	−2.4%	−2.4%	−2.5%	−3.5%
128	Turkey	0.0%	−0.1%	−1.4%	−3.6%	−4.4%
129	Uganda	−1.9%	−4.9%	−7.7%	−10.0%	−21.0%
130	Ukraine	1.9%	4.5%	5.6%	6.5%	6.3%
131	United Arab Emirates	–	–	–	–	–
132	United Kingdom	0.2%	0.5%	2.1%	4.0%	−38.4%
133	United Republic of Tanzania	−1.0%	−2.6%	−3.9%	−5.3%	10.0%
134	United States of America	0.4%	0.9%	2.1%	3.2%	2.5%
135	Uruguay	0.4%	0.9%	1.3%	1.8%	2.4%
136	Venezuela (Bolivarian Republic of)	−0.6%	−1.4%	−2.1%	−2.9%	−2.5%
137	Viet Nam	1.2%	3.0%	3.8%	3.2%	4.8%
138	Yemen	0.0%	0.0%	0.0%	0.0%	0.0%
139	Zambia	−0.3%	−0.8%	−1.2%	−1.6%	−2.2%
140	Zimbabwe	−1.5%	−3.9%	−6.1%	−8.4%	−13.4%

Table A3.32 Forest per capita growth (Forest per capita change (%) with respect to base year 1990)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	−6.4%	−11.5%	−16.1%	−18.9%	−27.5%
2	Albania	0.6%	1.5%	2.1%	3.1%	4.5%
3	Algeria	−2.9%	−6.3%	−9.2%	−12.3%	−14.6%
4	Argentina	−1.6%	−3.8%	−5.4%	−6.6%	−10.7%
5	Armenia	0.7%	0.5%	−0.8%	−3.2%	1.4%
6	Australia	−1.1%	−2.8%	−4.5%	−7.1%	−15.4%
7	Austria	0.7%	2.3%	3.0%	2.3%	0.8%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
8	Bahrain	−15.1%	–	−26.6%	−20.6%	−58.1%
9	Bangladesh	−2.6%	−6.1%	−8.6%	−9.3%	−14.3%
10	Barbados	−0.3%	−0.9%	−1.3%	−1.9%	−9.6%
11	Belgium	2.7%	6.6%	8.5%	8.3%	8.7%
12	Belize	−2.6%	−8.1%	−11.9%	−15.4%	−22.7%
13	Benin	−4.7%	−10.9%	−15.5%	−19.7%	−28.0%
14	Bolivia (Plurinational State of)	−2.4%	−5.8%	−8.4%	−10.9%	−16.8%
15	Botswana	−3.5%	−7.6%	−10.3%	−13.4%	−20.7%
16	Brazil	−2.1%	−5.0%	−7.2%	−8.9%	−12.9%
17	Bulgaria	2.6%	6.1%	11.6%	16.5%	−27.7%
18	Burundi	−7.4%	−19.2%	−23.4%	−27.3%	−29.2%
19	Cambodia	−4.5%	−10.1%	−13.8%	−16.7%	−24.7%
20	Cameroon	−3.7%	−8.9%	−12.9%	−16.8%	−55.7%
21	Canada	−1.2%	−2.9%	−4.2%	−5.5%	−21.8%
22	Central African Republic	−2.6%	−6.1%	−8.2%	−10.4%	−15.9%
23	Chile	−1.3%	−3.0%	−4.4%	−6.0%	−8.5%
24	China	−2.4%	−5.7%	−9.7%	−9.3%	−11.5%
25	Colombia	−1.9%	−4.5%	−6.3%	−7.9%	−48.3%
26	Congo	−2.7%	−6.6%	−9.4%	−12.8%	−19.5%
27	Costa Rica	−2.9%	−6.7%	−7.5%	−8.1%	6.1%
28	Côte d'Ivoire	1.3%	3.0%	0.6%	−2.1%	−6.1%
29	Croatia	1.6%	4.7%	5.9%	7.4%	9.3%
30	Cuba	3.2%	7.7%	11.0%	11.8%	13.9%
31	Cyprus	−1.6%	−3.8%	−5.6%	−6.7%	−10.6%
32	Czech Republic	1.0%	2.7%	2.8%	3.4%	−13.8%
33	Democratic Republic of the Congo	−3.9%	−8.1%	−11.8%	−15.5%	−23.6%
34	Denmark	0.8%	2.0%	8.2%	6.8%	7.0%
35	Dominican Republic	−1.9%	−4.3%	−6.2%	−8.0%	−12.7%
36	Ecuador	−3.2%	−7.6%	−10.7%	−13.8%	−17.7%
37	Egypt	–	–	–	–	–
38	El Salvador	−2.6%	−5.8%	−8.2%	−10.4%	−16.0%
39	Estonia	−4.4%	−15.2%	5.6%	5.7%	7.5%
40	Fiji	−1.4%	−3.0%	−3.4%	−4.7%	−6.4%
41	Finland	−0.1%	0.1%	−1.2%	−2.5%	−5.2%
42	France	0.4%	0.8%	1.0%	1.0%	0.2%
43	Gabon	−2.6%	−6.2%	−8.8%	−11.4%	−17.3%
44	Gambia	−2.5%	−6.1%	−9.2%	−12.4%	−19.4%
45	Germany	0.6%	2.0%	2.7%	3.1%	5.9%
46	Ghana	−4.5%	−10.6%	−15.9%	−21.1%	−17.8%
47	Greece	0.2%	0.7%	1.3%	2.1%	4.6%
48	Guatemala	−3.7%	−9.0%	−13.2%	−17.4%	−23.1%
49	Guyana	−0.2%	−0.7%	−0.8%	−1.1%	3.5%
50	Haiti	−3.4%	−8.1%	−11.9%	−15.9%	−24.0%
51	Honduras	−4.8%	−11.4%	−15.6%	−19.6%	−29.1%
52	Hungary	1.7%	4.4%	6.1%	6.6%	8.0%

(*Continued*)

Table A3.32 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
53	Iceland	−1.7%	−4.3%	−5.8%	−7.0%	21.2%
54	India	−1.8%	−4.2%	−5.5%	−6.7%	−11.6%
55	Indonesia	−2.7%	−6.5%	−9.0%	−12.0%	−19.1%
56	Iran (Islamic Republic of)	−1.4%	−3.8%	−5.7%	−6.6%	−16.6%
57	Iraq	−2.7%	−6.8%	−9.7%	−12.7%	−20.2%
58	Ireland	−1.6%	−4.6%	−7.4%	−11.2%	−17.8%
59	Israel	−3.6%	−7.7%	−9.2%	−11.7%	−14.2%
60	Italy	2.0%	4.9%	6.6%	8.1%	6.7%
61	Jamaica	−0.9%	−2.4%	−3.0%	−4.0%	−5.3%
62	Japan	0.9%	2.2%	3.6%	3.6%	0.7%
63	Jordan	−4.9%	−8.4%	−11.0%	−15.3%	−23.3%
64	Kazakhstan	0.3%	1.6%	2.4%	0.4%	−1.4%
65	Kenya	−3.8%	−8.6%	−12.5%	−16.1%	−18.9%
66	Kuwait	–	–	–	–	–
67	Kyrgyzstan	0.2%	−0.5%	−0.7%	4.6%	1.9%
68	Lao People's Democratic Republic	−3.1%	−6.7%	−9.1%	−11.6%	−14.6%
69	Latvia	2.6%	6.1%	8.7%	13.1%	17.7%
70	Lesotho	−1.9%	−3.8%	−4.8%	−5.9%	−10.4%
71	Liberia	−0.4%	−9.1%	−12.6%	−17.4%	−25.8%
72	Lithuania	0.8%	2.5%	4.8%	6.7%	9.5%
73	Luxembourg	0.8%	1.8%	0.2%	−2.0%	−6.7%
74	Malawi	−1.9%	−6.9%	−11.6%	−16.5%	−25.5%
75	Malaysia	−3.0%	−7.1%	−10.3%	−13.1%	−16.2%
76	Maldives	−3.1%	−6.6%	−9.2%	−12.2%	−52.3%
77	Mali	−3.1%	−7.8%	−12.2%	−17.0%	−38.6%
78	Malta	−0.9%	−1.8%	−3.2%	−3.9%	−45.1%
79	Mauritania	−5.5%	−13.8%	−20.9%	−25.8%	−36.9%
80	Mauritius	−1.3%	−3.2%	−6.2%	−6.7%	−9.1%
81	Mexico	−2.6%	−6.0%	−8.4%	−10.7%	−12.9%
82	Mongolia	−1.7%	−4.0%	−6.2%	−8.7%	−11.3%
83	Morocco	−1.6%	−3.5%	−4.3%	−5.8%	−7.8%
84	Mozambique	−3.9%	−8.7%	−12.6%	−16.1%	−24.3%
85	Myanmar	−2.5%	−6.2%	−8.4%	−10.4%	−16.6%
86	Namibia	−3.9%	−9.1%	−11.6%	−14.4%	−22.2%
87	Nepal	−4.5%	−10.6%	−13.8%	−14.9%	−20.6%
88	Netherlands	–	–	–	–	–
89	New Zealand	−1.9%	−3.6%	−6.1%	−1.2%	−6.0%
90	Nicaragua	−3.7%	−8.6%	−12.3%	−16.1%	−20.8%
91	Niger	−6.8%	−17.3%	−22.7%	−28.0%	−39.1%
92	Nigeria	−4.5%	−11.2%	−16.8%	−22.6%	−35.9%
93	Norway	−0.1%	−0.4%	0.4%	0.5%	0.9%
94	Pakistan	−5.0%	−12.1%	−17.8%	−23.5%	−35.9%
95	Panama	−3.2%	−7.9%	−10.5%	−12.9%	−12.6%
96	Papua New Guinea	−2.9%	−7.3%	−10.7%	−13.8%	−11.1%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
97	Paraguay	−3.3%	−7.7%	−10.8%	−13.4%	−21.8%
98	Peru	−2.1%	−4.7%	−6.3%	−8.1%	−10.2%
99	Philippines	−1.8%	−4.3%	−5.7%	−6.9%	−13.5%
100	Poland	1.9%	5.0%	7.6%	9.9%	12.3%
101	Portugal	0.8%	1.4%	0.1%	−0.2%	−10.9%
102	Qatar	–	–	–	–	–
103	Republic of Korea	3.6%	8.3%	12.5%	15.1%	11.6%
104	Republic of Moldova	1.4%	3.6%	5.7%	7.2%	−35.8%
105	Romania	0.4%	0.8%	2.2%	4.3%	7.3%
106	Russian Federation	0.0%	0.2%	0.8%	1.0%	1.0%
107	Rwanda	2.8%	−5.8%	−7.7%	−10.9%	−21.3%
108	Saudi Arabia	−2.8%	−6.5%	−9.8%	−12.6%	−19.1%
109	Senegal	−3.5%	−8.0%	−11.9%	−15.6%	−23.7%
110	Serbia	0.5%	1.8%	5.1%	11.1%	12.4%
111	Sierra Leone	−0.5%	−3.2%	−9.5%	−13.4%	−20.3%
112	Singapore	−2.9%	−6.7%	−8.1%	−12.0%	48.6%
113	Slovakia	0.7%	1.8%	2.9%	3.7%	3.2%
114	Slovenia	1.6%	3.8%	5.9%	7.5%	6.2%
115	South Africa	−2.2%	−5.7%	−7.5%	−9.2%	−13.8%
116	Spain	2.4%	5.4%	3.7%	3.3%	3.6%
117	Sri Lanka	−2.7%	−6.3%	−9.4%	−12.0%	−13.0%
118	Sudan (former)	−5.0%	−10.3%	−13.4%	−16.2%	−39.0%
119	Swaziland	−0.7%	−1.7%	−1.1%	−1.6%	−2.3%
120	Sweden	−1.0%	−2.0%	−2.0%	−3.5%	−14.2%
121	Switzerland	−0.4%	−0.3%	−0.8%	−1.7%	−4.3%
122	Syrian Arab Republic	−2.7%	−6.5%	−9.0%	−12.0%	−49.0%
123	Tajikistan	−1.8%	−4.0%	−6.4%	−8.8%	−14.2%
124	Thailand	−1.4%	−3.6%	−5.6%	−6.7%	−4.0%
125	Togo	−5.7%	−14.6%	−22.7%	−31.5%	−49.2%
126	Trinidad and Tobago	−0.9%	−1.8%	−2.9%	−4.2%	−30.5%
127	Tunisia	−2.8%	−6.2%	−7.3%	−8.6%	−12.7%
128	Turkey	−1.6%	−4.0%	−6.8%	−10.4%	−15.3%
129	Uganda	−5.0%	−12.0%	−18.1%	−23.4%	−39.0%
130	Ukraine	2.0%	5.9%	8.2%	9.8%	11.2%
131	United Arab Emirates	–	–	–	–	–
132	United Kingdom	−0.1%	−0.2%	0.7%	1.6%	−40.9%
133	United Republic of Tanzania	−4.1%	−9.4%	−13.7%	−18.2%	−13.2%
134	United States of America	−0.9%	−2.1%	−2.1%	−2.1%	−5.5%
135	Uruguay	−0.4%	−0.7%	−0.4%	−0.2%	−0.8%
136	Venezuela (Bolivarian Republic of)	−2.7%	−6.4%	−9.2%	−11.7%	−15.6%
137	Viet Nam	−0.5%	−1.1%	−1.8%	−3.6%	−5.7%
138	Yemen	−4.8%	−9.5%	−12.6%	−15.6%	−23.0%
139	Zambia	−2.8%	−7.1%	−10.4%	−14.0%	−21.5%
140	Zimbabwe	−3.6%	−8.0%	−11.0%	−14.7%	−23.5%

Table A3.33 Fishery (Fishery in billions of constant 2005 US$)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	–	–	–	–	–	–
2	Albania	0.3	0.2	0.2	0.1	0.1	0.1
3	Algeria	6.0	5.5	5.1	4.4	3.6	3.0
4	Argentina	40.7	34.0	25.5	20.9	15.1	11.4
5	Armenia	–	–	–	–	–	–
6	Australia	13.5	11.4	9.7	8.5	7.9	7.0
7	Austria	–	–	–	–	–	–
8	Bahrain	1.1	1.0	0.9	0.9	0.8	0.7
9	Bangladesh	14.4	13.6	12.6	11.6	10.8	10.1
10	Barbados	0.2	0.2	0.2	0.2	0.2	0.2
11	Belgium	0.7	0.8	0.9	1.0	1.0	1.1
12	Belize	0.3	0.3	0.3	0.3	0.3	0.3
13	Benin	1.5	1.2	1.0	0.8	0.7	0.7
14	Bolivia (Plurinational State of)	–	–	–	–	–	–
15	Botswana	–	–	–	–	–	–
16	Brazil	19.5	18.7	18.6	17.7	16.8	15.6
17	Bulgaria	0.2	0.2	0.2	0.2	0.2	0.2
18	Burundi	–	–	–	–	–	–
19	Cambodia	28.8	24.8	19.2	13.4	9.7	7.8
20	Cameroon	1.5	1.2	1.0	0.7	0.7	0.6
21	Canada	159.5	179.5	208.4	233.6	256.9	271.7
22	Central African Republic	–	–	–	–	–	–
23	Chile	34.0	28.4	24.1	21.1	17.3	17.0
24	China	249.3	223.2	175.1	145.3	127.5	114.5
25	Colombia	2.4	1.9	1.9	2.1	2.3	2.2
26	Congo	1.4	1.5	1.8	2.0	2.1	2.1
27	Costa Rica	2.3	2.1	1.9	1.7	1.7	1.5
28	Côte d'Ivoire	2.6	2.3	2.2	2.1	2.0	1.9
29	Croatia	1.3	1.1	1.1	1.2	1.1	1.1
30	Cuba	1.9	1.7	1.5	1.4	1.5	1.4
31	Cyprus	–	–	–	–	–	–
32	Czech Republic	–	–	–	–	–	–
33	Democratic Republic of the Congo	–	–	–	–	–	–
34	Denmark	24.9	21.3	18.4	16.6	17.7	16.0
35	Dominican Republic	1.6	1.4	1.4	1.3	1.3	1.3
36	Ecuador	4.9	4.4	3.9	3.9	4.1	3.6
37	Egypt	2.9	2.7	2.3	2.2	1.9	1.7
38	El Salvador	1.9	2.0	1.9	2.2	2.4	2.3
39	Estonia	0.7	0.7	0.6	0.6	0.6	0.6
40	Fiji	2.2	2.2	2.3	2.3	2.4	2.4
41	Finland	0.9	0.8	0.7	0.7	0.6	0.6
42	France	12.9	11.9	11.3	10.6	9.9	9.1
43	Gabon	2.3	2.2	1.9	1.7	1.8	1.5

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
44	Gambia	3.3	2.3	2.2	2.0	1.8	1.6
45	Germany	5.9	6.3	6.6	6.8	7.0	7.2
46	Ghana	8.3	7.7	6.6	5.7	4.6	4.0
47	Greece	8.0	7.0	6.1	5.7	5.3	4.8
48	Guatemala	1.2	1.1	0.9	0.8	0.8	0.7
49	Guyana	1.5	1.4	1.1	0.9	0.8	0.7
50	Haiti	0.8	0.8	0.7	0.7	0.6	0.5
51	Honduras	0.7	0.6	0.5	0.4	0.4	0.3
52	Hungary	–	–	–	–	–	–
53	Iceland	18.8	16.9	15.3	13.4	12.8	12.2
54	India	101.9	91.0	79.2	71.5	63.9	57.6
55	Indonesia	137.8	124.7	107.4	90.4	76.6	65.6
56	Iran (Islamic Republic of)	11.5	9.8	7.3	6.4	6.2	5.2
57	Iraq	0.2	0.3	0.2	0.1	0.1	0.1
58	Ireland	11.3	10.5	9.0	8.2	7.2	6.8
59	Israel	0.2	0.2	0.2	0.2	0.2	0.2
60	Italy	29.5	27.6	26.2	26.3	28.0	26.9
61	Jamaica	1.7	1.7	1.8	1.9	1.9	1.9
62	Japan	161.3	152.0	141.6	139.7	141.0	133.1
63	Jordan	0.0	0.0	0.0	0.0	0.0	0.0
64	Kazakhstan	–	–	–	–	–	–
65	Kenya	0.4	0.4	0.4	0.4	0.4	0.4
66	Kuwait	0.5	0.5	0.5	0.5	0.4	0.4
67	Kyrgyzstan	–	–	–	–	–	–
68	Lao People's Democratic Republic	–	–	–	–	–	–
69	Latvia	1.2	1.1	1.0	1.1	1.1	1.1
70	Lesotho	–	–	–	–	–	–
71	Liberia	1.3	1.1	1.0	1.0	0.9	0.8
72	Lithuania	0.4	0.3	0.3	0.3	0.2	0.2
73	Luxembourg	–	–	–	–	–	–
74	Malawi	–	–	–	–	–	–
75	Malaysia	72.3	65.6	58.1	50.6	47.0	42.8
76	Maldives	3.1	2.9	3.1	2.8	1.9	1.9
77	Mali	–	–	–	–	–	–
78	Malta	0.1	0.1	0.1	0.1	0.1	0.1
79	Mauritania	13.1	11.7	11.0	10.0	8.6	7.5
80	Mauritius	0.7	0.6	0.5	0.4	0.3	0.3
81	Mexico	50.9	46.5	43.1	42.0	41.3	38.4
82	Mongolia	–	–	–	–	–	–
83	Morocco	29.7	27.0	25.0	22.6	21.2	19.4
84	Mozambique	3.7	3.3	3.1	3.0	3.1	3.0
85	Myanmar	39.8	36.2	31.0	25.3	21.6	19.3
86	Namibia	16.4	20.0	23.7	27.2	31.6	31.1
87	Nepal	–	–	–	–	–	–

(*Continued*)

Table A3.33 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
88	Netherlands	12.7	11.0	10.4	10.5	11.2	10.5
89	New Zealand	24.1	20.5	17.5	15.2	14.2	11.7
90	Nicaragua	1.3	1.3	1.1	1.0	1.0	0.9
91	Niger	–	–	–	–	–	–
92	Nigeria	9.1	8.1	7.0	5.6	4.4	3.6
93	Norway	36.2	35.5	32.4	31.8	32.7	31.4
94	Pakistan	18.7	16.4	14.4	12.3	10.9	9.8
95	Panama	2.7	2.7	2.5	2.0	1.9	1.8
96	Papua New Guinea	5.9	4.8	4.5	4.7	4.3	3.5
97	Paraguay	–	–	–	–	–	–
98	Peru	74.8	62.5	53.4	42.0	31.9	27.8
99	Philippines	23.7	22.3	20.3	18.1	15.6	13.8
100	Poland	2.3	2.3	1.7	1.5	1.3	1.2
101	Portugal	10.6	10.6	11.3	12.5	13.6	13.2
102	Qatar	0.3	0.3	0.3	0.3	0.2	0.2
103	Republic of Korea	64.6	58.5	55.0	52.0	49.0	46.2
104	Republic of Moldova	–	–	–	–	–	–
105	Romania	–	–	–	–	–	–
106	Russian Federation	113.4	101.8	89.5	87.8	87.6	75.2
107	Rwanda	–	–	–	–	–	–
108	Saudi Arabia	2.2	1.8	1.5	1.5	1.5	1.3
109	Senegal	20.0	18.3	17.1	16.4	17.0	16.6
110	Serbia	–	–	–	–	–	–
111	Sierra Leone	2.5	2.4	2.4	2.1	1.8	1.7
112	Singapore	0.2	0.2	0.2	0.2	0.2	0.2
113	Slovakia	–	–	–	–	–	–
114	Slovenia	0.0	0.0	0.0	0.0	0.0	0.0
115	South Africa	16.2	16.9	17.7	17.9	18.4	18.3
116	Spain	53.3	56.9	60.1	65.6	70.6	73.0
117	Sri Lanka	11.0	10.4	9.3	7.3	6.5	5.7
118	Sudan (former)	0.1	0.1	0.1	0.1	0.1	0.1
119	Swaziland	–	–	–	–	–	–
120	Sweden	4.4	4.1	3.5	3.4	3.5	3.3
121	Switzerland	–	–	–	–	–	–
122	Syrian Arab Republic	9.8	8.9	8.2	7.9	8.2	7.7
123	Tajikistan	–	–	–	–	–	–
124	Thailand	53.2	46.6	41.2	38.3	36.4	32.6
125	Togo	1.1	1.0	1.0	1.1	1.1	1.1
126	Trinidad and Tobago	0.8	0.7	0.8	0.8	0.8	0.8
127	Tunisia	2.3	2.0	1.8	1.6	1.4	1.3
128	Turkey	15.8	14.1	12.7	11.6	10.5	9.5
129	Uganda	–	–	–	–	–	–
130	Ukraine	1.8	1.8	1.8	1.8	1.7	1.6
131	United Arab Emirates	2.2	1.9	1.6	1.3	1.1	1.1
132	United Kingdom	49.9	44.2	37.6	34.0	31.9	28.9

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
133	United Republic of Tanzania	2.5	2.3	2.1	1.9	1.8	1.6
134	United States of America	202.6	197.6	199.4	198.7	199.9	199.6
135	Uruguay	2.9	2.4	2.0	1.7	1.4	1.2
136	Venezuela (Bolivarian Republic of)	9.2	7.8	6.2	4.6	3.6	3.1
137	Viet Nam	78.5	73.8	64.7	55.4	48.2	42.5
138	Yemen	6.3	6.0	5.5	4.0	3.1	2.8
139	Zambia	–	–	–	–	–	–
140	Zimbabwe	–	–	–	–	–	–

Table A3.34 Fishery per capita (Fishery per capita in thousands of constant 2005 US$)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	–	–	–	–	–	–
2	Albania	0.1	0.1	0.1	0.0	0.0	0.0
3	Algeria	0.2	0.2	0.2	0.1	0.1	0.1
4	Argentina	1.2	1.0	0.7	0.5	0.4	0.3
5	Armenia	–	–	–	–	–	–
6	Australia	0.8	0.6	0.5	0.4	0.4	0.3
7	Austria	–	–	–	–	–	–
8	Bahrain	2.1	1.8	1.4	1.0	0.6	0.5
9	Bangladesh	0.1	0.1	0.1	0.1	0.1	0.1
10	Barbados	0.7	0.6	0.6	0.6	0.7	0.7
11	Belgium	0.1	0.1	0.1	0.1	0.1	0.1
12	Belize	1.5	1.3	1.1	1.0	0.9	0.7
13	Benin	0.3	0.2	0.1	0.1	0.1	0.1
14	Bolivia (Plurinational State of)	–	–	–	–	–	–
15	Botswana	–	–	–	–	–	–
16	Brazil	0.1	0.1	0.1	0.1	0.1	0.1
17	Bulgaria	0.0	0.0	0.0	0.0	0.0	0.0
18	Burundi	–	–	–	–	–	–
19	Cambodia	3.2	2.3	1.6	1.0	0.7	0.5
20	Cameroon	0.1	0.1	0.1	0.0	0.0	0.0
21	Canada	5.7	6.1	6.8	7.2	7.6	7.6
22	Central African Republic	–	–	–	–	–	–
23	Chile	2.6	2.0	1.6	1.3	1.0	1.0
24	China	0.2	0.2	0.1	0.1	0.1	0.1
25	Colombia	0.1	0.0	0.0	0.0	0.1	0.0
26	Congo	0.6	0.6	0.6	0.6	0.5	0.5
27	Costa Rica	0.7	0.6	0.5	0.4	0.4	0.3
28	Côte d'Ivoire	0.2	0.2	0.1	0.1	0.1	0.1
29	Croatia	0.3	0.2	0.3	0.3	0.3	0.2
30	Cuba	0.2	0.2	0.1	0.1	0.1	0.1
31	Cyprus	–	–	–	–	–	–

(*Continued*)

Table A3.34 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
32	Czech Republic	–	–	–	–	–	–
33	Democratic Republic of the Congo	–	–	–	–	–	–
34	Denmark	4.8	4.1	3.4	3.1	3.2	2.8
35	Dominican Republic	0.2	0.2	0.2	0.1	0.1	0.1
36	Ecuador	0.5	0.4	0.3	0.3	0.3	0.2
37	Egypt	0.1	0.0	0.0	0.0	0.0	0.0
38	El Salvador	0.4	0.3	0.3	0.4	0.4	0.4
39	Estonia	0.5	0.5	0.5	0.5	0.5	0.5
40	Fiji	3.0	2.9	2.9	2.9	2.8	2.7
41	Finland	0.2	0.2	0.1	0.1	0.1	0.1
42	France	0.2	0.2	0.2	0.2	0.2	0.1
43	Gabon	2.4	2.0	1.6	1.2	1.1	0.9
44	Gambia	3.5	2.2	1.8	1.4	1.1	0.8
45	Germany	0.1	0.1	0.1	0.1	0.1	0.1
46	Ghana	0.6	0.5	0.4	0.3	0.2	0.1
47	Greece	0.8	0.7	0.6	0.5	0.5	0.4
48	Guatemala	0.1	0.1	0.1	0.1	0.1	0.0
49	Guyana	2.0	1.9	1.5	1.2	1.0	0.9
50	Haiti	0.1	0.1	0.1	0.1	0.1	0.0
51	Honduras	0.1	0.1	0.1	0.1	0.0	0.0
52	Hungary	–	–	–	–	–	–
53	Iceland	73.9	63.3	54.4	45.1	40.2	37.1
54	India	0.1	0.1	0.1	0.1	0.1	0.0
55	Indonesia	0.8	0.6	0.5	0.4	0.3	0.3
56	Iran (Islamic Republic of)	0.2	0.2	0.1	0.1	0.1	0.1
57	Iraq	0.0	0.0	0.0	0.0	0.0	0.0
58	Ireland	3.2	2.9	2.4	2.0	1.6	1.5
59	Israel	0.0	0.0	0.0	0.0	0.0	0.0
60	Italy	0.5	0.5	0.5	0.5	0.5	0.4
61	Jamaica	0.7	0.7	0.7	0.7	0.7	0.7
62	Japan	1.3	1.2	1.1	1.1	1.1	1.0
63	Jordan	0.0	0.0	0.0	0.0	0.0	0.0
64	Kazakhstan	–	–	–	–	–	–
65	Kenya	0.0	0.0	0.0	0.0	0.0	0.0
66	Kuwait	0.3	0.3	0.2	0.2	0.1	0.1
67	Kyrgyzstan	–	–	–	–	–	–
68	Lao People's Democratic Republic	–	–	–	–	–	–
69	Latvia	0.4	0.5	0.4	0.5	0.5	0.5
70	Lesotho	–	–	–	–	–	–
71	Liberia	0.6	0.5	0.4	0.3	0.2	0.2
72	Lithuania	0.1	0.1	0.1	0.1	0.1	0.1
73	Luxembourg	–	–	–	–	–	–
74	Malawi	–	–	–	–	–	–
75	Malaysia	4.0	3.2	2.5	2.0	1.7	1.4

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
76	Maldives	14.1	11.5	10.9	8.8	5.2	4.8
77	Mali	–	–	–	–	–	–
78	Malta	0.2	0.2	0.2	0.2	0.2	0.2
79	Mauritania	6.5	5.0	4.1	3.2	2.4	1.9
80	Mauritius	0.7	0.6	0.4	0.3	0.3	0.2
81	Mexico	0.6	0.5	0.4	0.4	0.3	0.3
82	Mongolia	–	–	–	–	–	–
83	Morocco	1.2	1.0	0.9	0.7	0.7	0.6
84	Mozambique	0.3	0.2	0.2	0.1	0.1	0.1
85	Myanmar	0.9	0.8	0.7	0.5	0.4	0.4
86	Namibia	11.6	12.1	12.5	13.4	14.4	13.0
87	Nepal	–	–	–	–	–	–
88	Netherlands	0.8	0.7	0.7	0.6	0.7	0.6
89	New Zealand	7.2	5.6	4.5	3.7	3.3	2.6
90	Nicaragua	0.3	0.3	0.2	0.2	0.2	0.2
91	Niger	–	–	–	–	–	–
92	Nigeria	0.1	0.1	0.1	0.0	0.0	0.0
93	Norway	8.5	8.1	7.2	6.9	6.7	6.1
94	Pakistan	0.2	0.1	0.1	0.1	0.1	0.1
95	Panama	1.1	1.0	0.8	0.6	0.5	0.5
96	Papua New Guinea	1.4	1.0	0.8	0.8	0.6	0.5
97	Paraguay	–	–	–	–	–	–
98	Peru	3.4	2.6	2.1	1.5	1.1	0.9
99	Philippines	0.4	0.3	0.3	0.2	0.2	0.1
100	Poland	0.1	0.1	0.0	0.0	0.0	0.0
101	Portugal	1.1	1.1	1.1	1.2	1.3	1.3
102	Qatar	0.7	0.6	0.5	0.3	0.1	0.1
103	Republic of Korea	1.5	1.3	1.2	1.1	1.0	0.9
104	Republic of Moldova	–	–	–	–	–	–
105	Romania	–	–	–	–	–	–
106	Russian Federation	0.8	0.7	0.6	0.6	0.6	0.5
107	Rwanda	–	–	–	–	–	–
108	Saudi Arabia	0.1	0.1	0.1	0.1	0.1	0.0
109	Senegal	2.7	2.1	1.7	1.5	1.3	1.1
110	Serbia	–	–	–	–	–	–
111	Sierra Leone	0.6	0.6	0.6	0.4	0.3	0.3
112	Singapore	0.1	0.1	0.0	0.0	0.0	0.0
113	Slovakia	–	–	–	–	–	–
114	Slovenia	0.0	0.0	0.0	0.0	0.0	0.0
115	South Africa	0.5	0.4	0.4	0.4	0.4	0.3
116	Spain	1.4	1.4	1.5	1.5	1.5	1.6
117	Sri Lanka	0.6	0.6	0.5	0.4	0.3	0.3
118	Sudan (former)	0.0	0.0	0.0	0.0	0.0	0.0
119	Swaziland	–	–	–	–	–	–

(*Continued*)

Table A3.34 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
120	Sweden	0.5	0.5	0.4	0.4	0.4	0.3
121	Switzerland	–	–	–	–	–	–
122	Syrian Arab Republic	0.8	0.6	0.5	0.4	0.4	0.4
123	Tajikistan	–	–	–	–	–	–
124	Thailand	0.9	0.8	0.7	0.6	0.5	0.5
125	Togo	0.3	0.2	0.2	0.2	0.2	0.2
126	Trinidad and Tobago	0.7	0.6	0.6	0.6	0.6	0.6
127	Tunisia	0.3	0.2	0.2	0.2	0.1	0.1
128	Turkey	0.3	0.2	0.2	0.2	0.1	0.1
129	Uganda	–	–	–	–	–	–
130	Ukraine	0.0	0.0	0.0	0.0	0.0	0.0
131	United Arab Emirates	1.2	0.8	0.5	0.3	0.1	0.1
132	United Kingdom	0.9	0.8	0.6	0.6	0.5	0.4
133	United Republic of Tanzania	0.1	0.1	0.1	0.0	0.0	0.0
134	United States of America	0.8	0.7	0.7	0.7	0.6	0.6
135	Uruguay	0.9	0.8	0.6	0.5	0.4	0.3
136	Venezuela (Bolivarian Republic of)	0.5	0.3	0.3	0.2	0.1	0.1
137	Viet Nam	1.2	1.0	0.8	0.7	0.6	0.5
138	Yemen	0.5	0.4	0.3	0.2	0.1	0.1
139	Zambia	–	–	–	–	–	–
140	Zimbabwe	–	–	–	–	–	–

Table A3.35 Fishery growth (Fishery change (%) with respect to base year 1990)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	–	–	–	–	–
2	Albania	−2.7%	−10.4%	−14.9%	−15.4%	−24.4%
3	Algeria	−1.7%	−3.8%	−7.1%	−12.1%	−20.3%
4	Argentina	−3.5%	−11.0%	−15.3%	−21.9%	−34.6%
5	Armenia	–	–	–	–	–
6	Australia	−3.5%	−7.9%	−11.0%	−12.5%	−19.7%
7	Austria	–	–	–	–	–
8	Bahrain	−1.0%	−3.6%	−5.2%	−7.4%	−12.3%
9	Bangladesh	−1.1%	−3.1%	−5.1%	−6.9%	−11.1%
10	Barbados	−1.0%	−0.4%	−0.6%	1.0%	1.9%
11	Belgium	1.7%	4.8%	7.3%	9.5%	13.6%
12	Belize	−1.0%	−1.8%	−1.6%	−1.3%	−3.5%
13	Benin	−4.3%	−9.2%	−15.2%	−18.8%	−23.6%
14	Bolivia (Plurinational State of)	–	–	–	–	–
15	Botswana	–	–	–	–	–
16	Brazil	−0.8%	−1.2%	−2.3%	−3.6%	−7.1%
17	Bulgaria	3.0%	3.8%	4.1%	4.3%	5.2%
18	Burundi	–	–	–	–	–
19	Cambodia	−3.0%	−9.6%	−17.4%	−23.8%	−35.2%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
20	Cameroon	−4.0%	−9.8%	−17.5%	−18.2%	−26.9%
21	Canada	2.4%	6.9%	10.0%	12.7%	19.4%
22	Central African Republic	–	–	–	–	–
23	Chile	−3.5%	−8.2%	−11.2%	−15.5%	−20.6%
24	China	−2.2%	−8.4%	−12.6%	−15.4%	−22.8%
25	Colombia	−4.8%	−5.7%	−3.6%	−0.7%	−2.2%
26	Congo	2.3%	6.6%	9.5%	11.5%	14.8%
27	Costa Rica	−1.9%	−4.7%	−7.0%	−6.9%	−12.9%
28	Côte d'Ivoire	−1.8%	−4.2%	−5.3%	−5.6%	−10.0%
29	Croatia	−2.4%	−2.9%	−1.6%	−2.5%	−5.7%
30	Cuba	−1.9%	−5.8%	−6.8%	−5.2%	−8.9%
31	Cyprus	–	–	–	–	–
32	Czech Republic	–	–	–	–	–
33	Democratic Republic of the Congo	–	–	–	–	–
34	Denmark	−3.1%	−7.2%	−9.5%	−8.2%	−13.7%
35	Dominican Republic	−2.2%	−3.4%	−4.4%	−4.6%	−7.1%
36	Ecuador	−2.3%	−6.0%	−5.8%	−4.4%	−10.1%
37	Egypt	−1.9%	−5.7%	−6.8%	−10.5%	−17.0%
38	El Salvador	1.0%	1.2%	3.9%	6.3%	7.9%
39	Estonia	−0.7%	−3.2%	−3.2%	−3.1%	−5.5%
40	Fiji	0.3%	1.2%	1.4%	2.0%	2.9%
41	Finland	−1.8%	−6.3%	−6.9%	−8.1%	−12.7%
42	France	−1.7%	−3.3%	−4.9%	−6.5%	−10.9%
43	Gabon	−0.9%	−3.7%	−6.7%	−6.2%	−12.2%
44	Gambia	−6.5%	−9.2%	−11.6%	−13.2%	−21.3%
45	Germany	1.3%	2.7%	3.6%	4.5%	6.8%
46	Ghana	−1.5%	−5.6%	−8.9%	−13.5%	−21.8%
47	Greece	−2.7%	−6.5%	−8.1%	−10.0%	−15.5%
48	Guatemala	−1.9%	−7.0%	−10.0%	−10.7%	−17.8%
49	Guyana	−1.1%	−7.1%	−11.6%	−14.5%	−22.1%
50	Haiti	−0.8%	−2.2%	−4.8%	−8.6%	−13.1%
51	Honduras	−3.1%	−9.4%	−13.6%	−15.5%	−23.9%
52	Hungary	–	–	–	–	–
53	Iceland	−2.1%	−5.1%	−8.2%	−9.2%	−13.6%
54	India	−2.2%	−6.1%	−8.5%	−11.0%	−17.3%
55	Indonesia	−2.0%	−6.1%	−10.0%	−13.7%	−21.9%
56	Iran (Islamic Republic of)	−3.2%	−10.7%	−13.7%	−14.3%	−23.1%
57	Iraq	2.2%	−4.4%	−11.2%	−17.0%	−24.2%
58	Ireland	−1.3%	−5.3%	−7.7%	−10.6%	−15.6%
59	Israel	−1.1%	−3.8%	−6.3%	−6.2%	−8.7%
60	Italy	−1.4%	−3.0%	−2.9%	−1.3%	−3.0%
61	Jamaica	0.1%	0.7%	1.8%	2.8%	4.0%
62	Japan	−1.2%	−3.2%	−3.5%	−3.3%	−6.2%
63	Jordan	0.1%	−0.1%	−0.4%	−1.1%	−2.0%
64	Kazakhstan	–	–	–	–	–

(*Continued*)

Table A3.35 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
65	Kenya	−0.6%	0.2%	1.4%	1.6%	−0.2%
66	Kuwait	−1.9%	−3.6%	−3.6%	−4.7%	−8.7%
67	Kyrgyzstan	–	–	–	–	–
68	Lao People's Democratic Republic	–	–	–	–	–
69	Latvia	−0.3%	−2.5%	−2.1%	−1.0%	−3.2%
70	Lesotho	–	–	–	–	–
71	Liberia	−2.6%	−5.8%	−7.3%	−9.8%	−16.2%
72	Lithuania	−0.6%	−5.6%	−7.8%	−9.5%	−17.0%
73	Luxembourg	–	–	–	–	–
74	Malawi	–	–	–	–	–
75	Malaysia	−1.9%	−5.3%	−8.5%	−10.2%	−16.1%
76	Maldives	−0.8%	0.3%	−2.1%	−11.2%	−14.6%
77	Mali	–	–	–	–	–
78	Malta	2.0%	4.1%	5.7%	6.2%	8.3%
79	Mauritania	−2.3%	−4.4%	−6.7%	−10.0%	−17.1%
80	Mauritius	−2.1%	−7.2%	−14.3%	−16.8%	−24.4%
81	Mexico	−1.8%	−4.1%	−4.7%	−5.1%	−8.9%
82	Mongolia	–	–	–	–	–
83	Morocco	−1.8%	−4.1%	−6.6%	−8.1%	−13.2%
84	Mozambique	−2.1%	−4.4%	−5.1%	−3.9%	−6.5%
85	Myanmar	−1.9%	−6.1%	−10.7%	−14.2%	−21.5%
86	Namibia	4.0%	9.5%	13.4%	17.7%	23.7%
87	Nepal	–	–	–	–	–
88	Netherlands	−2.8%	−4.7%	−4.7%	−3.1%	−6.2%
89	New Zealand	−3.2%	−7.7%	−10.9%	−12.4%	−21.5%
90	Nicaragua	0.0%	−3.7%	−6.6%	−7.0%	−11.0%
91	Niger	–	–	–	–	–
92	Nigeria	−2.2%	−6.4%	−11.4%	−16.8%	−26.8%
93	Norway	−0.4%	−2.8%	−3.2%	−2.5%	−4.7%
94	Pakistan	−2.5%	−6.2%	−9.8%	−12.6%	−19.4%
95	Panama	−0.5%	−2.0%	−7.4%	−8.6%	−12.5%
96	Papua New Guinea	−4.0%	−6.8%	−5.7%	−7.8%	−16.1%
97	Paraguay	–	–	–	–	–
98	Peru	−3.5%	−8.1%	−13.5%	−19.2%	−28.1%
99	Philippines	−1.3%	−3.8%	−6.5%	−9.9%	−16.4%
100	Poland	−0.6%	−7.0%	−10.7%	−13.1%	−20.3%
101	Portugal	0.0%	1.7%	4.3%	6.5%	7.7%
102	Qatar	−2.2%	−2.3%	−4.9%	−11.9%	−13.3%
103	Republic of Korea	−2.0%	−3.9%	−5.3%	−6.7%	−10.6%
104	Republic of Moldova	–	–	–	–	–
105	Romania	–	–	–	–	–
106	Russian Federation	−2.1%	−5.7%	−6.2%	−6.2%	−12.8%
107	Rwanda	–	–	–	–	–
108	Saudi Arabia	−3.3%	−8.4%	−8.4%	−9.2%	−16.2%
109	Senegal	−1.8%	−3.9%	−4.8%	−4.0%	−6.0%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
110	Serbia	–	–	–	–	–
111	Sierra Leone	−0.6%	−0.6%	−3.4%	−7.3%	−10.9%
112	Singapore	−3.8%	−6.7%	−6.6%	−9.4%	−11.2%
113	Slovakia	–	–	–	–	–
114	Slovenia	−3.4%	−9.1%	−14.1%	−17.3%	−24.9%
115	South Africa	0.9%	2.3%	2.5%	3.3%	4.2%
116	Spain	1.3%	3.0%	5.3%	7.3%	11.0%
117	Sri Lanka	−1.1%	−4.1%	−9.8%	−12.5%	−19.8%
118	Sudan (former)	−0.3%	−1.5%	−3.8%	−6.2%	−6.5%
119	Swaziland	–	–	–	–	–
120	Sweden	−1.4%	−5.6%	−6.3%	−5.5%	−9.4%
121	Switzerland	–	–	–	–	–
122	Syrian Arab Republic	−2.0%	−4.5%	−5.3%	−4.3%	−7.8%
123	Tajikistan	–	–	–	–	–
124	Thailand	−2.6%	−6.2%	−7.9%	−9.1%	−15.1%
125	Togo	−0.9%	−1.1%	−0.5%	0.7%	0.6%
126	Trinidad and Tobago	−2.3%	−1.7%	−1.3%	−0.5%	−2.3%
127	Tunisia	−2.7%	−6.0%	−9.0%	−10.8%	−16.7%
128	Turkey	−2.3%	−5.3%	−7.4%	−9.7%	−15.7%
129	Uganda	–	–	–	–	–
130	Ukraine	0.0%	0.3%	−0.7%	−1.3%	−3.8%
131	United Arab Emirates	−2.6%	−7.1%	−12.3%	−15.0%	−20.6%
132	United Kingdom	−2.4%	−6.8%	−9.2%	−10.6%	−16.7%
133	United Republic of Tanzania	−1.5%	−3.8%	−6.0%	−8.2%	−13.5%
134	United States of America	−0.5%	−0.4%	−0.5%	−0.3%	−0.5%
135	Uruguay	−3.5%	−9.4%	−12.0%	−17.0%	−25.6%
136	Venezuela (Bolivarian Republic of)	−3.4%	−9.4%	−16.0%	−20.8%	−30.7%
137	Viet Nam	−1.2%	−4.7%	−8.3%	−11.5%	−18.5%
138	Yemen	−0.7%	−3.4%	−10.8%	−15.8%	−23.7%
139	Zambia	–	–	–	–	–
140	Zimbabwe	–	–	–	–	–

Table A3.36 Fishery per capita growth (Fishery per capita change (%) with respect to base year 1990)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	–	–	–	–	–
2	Albania	−2.1%	−9.0%	−13.0%	−12.8%	−21.2%
3	Algeria	−3.8%	−8.2%	−12.7%	−19.0%	−30.4%
4	Argentina	−4.8%	−13.7%	−19.0%	−26.3%	−40.3%
5	Armenia	–	–	–	–	–
6	Australia	−4.6%	−10.5%	−14.8%	−17.9%	−27.8%
7	Austria	–	–	–	–	–
8	Bahrain	−3.5%	−10.5%	−17.6%	−26.7%	−37.3%

(*Continued*)

Table A3.36 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
9	Bangladesh	−3.3%	−8.2%	−11.9%	−14.9%	−22.4%
10	Barbados	−1.4%	−1.3%	−1.9%	−0.8%	−0.9%
11	Belgium	1.4%	4.1%	6.0%	7.0%	9.2%
12	Belize	−2.9%	−8.3%	−11.3%	−13.8%	−21.8%
13	Benin	−7.6%	−16.3%	−25.0%	−30.9%	−40.5%
14	Bolivia (Plurinational State of)	–	–	–	–	–
15	Botswana	–	–	–	–	–
16	Brazil	−2.4%	−5.0%	−7.7%	−10.1%	−16.4%
17	Bulgaria	3.7%	5.5%	7.3%	8.7%	12.0%
18	Burundi	–	–	–	–	–
19	Cambodia	−6.2%	−16.2%	−25.1%	−32.2%	−45.7%
20	Cameroon	−6.7%	−15.9%	−25.5%	−28.5%	−40.8%
21	Canada	1.3%	4.2%	5.9%	7.1%	10.0%
22	Central African Republic	–	–	–	–	–
23	Chile	−5.0%	−11.5%	−15.6%	−20.8%	−28.2%
24	China	−3.3%	−10.9%	−15.6%	−18.8%	−27.4%
25	Colombia	−6.4%	−9.5%	−9.1%	−7.7%	−12.4%
26	Congo	−0.3%	−0.2%	−0.5%	−2.4%	−7.1%
27	Costa Rica	−4.3%	−10.2%	−14.1%	−15.4%	−24.5%
28	Côte d'Ivoire	−5.1%	−11.2%	−14.3%	−16.8%	−26.3%
29	Croatia	−1.9%	−1.0%	0.2%	−0.5%	−1.9%
30	Cuba	−2.5%	−6.9%	−8.2%	−6.8%	−11.1%
31	Cyprus	–	–	–	–	–
32	Czech Republic	–	–	–	–	–
33	Democratic Republic of the Congo	–	–	–	–	–
34	Denmark	−3.4%	−8.1%	−10.7%	−9.9%	−16.3%
35	Dominican Republic	−4.0%	−7.6%	−10.2%	−11.9%	−17.9%
36	Ecuador	−4.5%	−10.9%	−12.5%	−13.1%	−22.4%
37	Egypt	−3.8%	−10.1%	−13.2%	−18.5%	−28.9%
38	El Salvador	−0.3%	−1.4%	0.7%	2.6%	2.6%
39	Estonia	1.1%	−0.4%	0.4%	0.9%	0.2%
40	Fiji	−1.0%	−1.5%	−1.6%	−2.1%	−3.6%
41	Finland	−2.3%	−7.2%	−8.1%	−9.7%	−15.3%
42	France	−2.1%	−4.2%	−6.7%	−9.0%	−14.6%
43	Gabon	−3.5%	−9.7%	−15.0%	−16.8%	−27.5%
44	Gambia	−9.3%	−15.6%	−21.1%	−25.5%	−38.5%
45	Germany	0.7%	1.8%	2.7%	3.7%	6.1%
46	Ghana	−4.1%	−11.3%	−17.1%	−23.8%	−36.1%
47	Greece	−3.4%	−7.9%	−9.8%	−11.9%	−17.3%
48	Guatemala	−4.3%	−12.5%	−17.9%	−20.7%	−31.8%
49	Guyana	−1.3%	−7.8%	−12.3%	−15.5%	−23.6%
50	Haiti	−2.7%	−6.6%	−11.0%	−16.1%	−23.9%
51	Honduras	−5.6%	−14.7%	−20.6%	−24.0%	−35.2%
52	Hungary	–	–	–	–	–
53	Iceland	−3.1%	−7.4%	−11.6%	−14.1%	−20.5%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
54	India	−4.1%	−10.5%	−14.5%	−18.4%	−27.6%
55	Indonesia	−3.6%	−9.6%	−14.9%	−19.6%	−30.2%
56	Iran (Islamic Republic of)	−4.6%	−14.1%	−18.4%	−20.1%	−31.1%
57	Iraq	−0.7%	−11.3%	−20.4%	−28.0%	−40.0%
58	Ireland	−1.8%	−7.2%	−11.5%	−16.3%	−23.0%
59	Israel	−4.5%	−10.8%	−15.1%	−17.0%	−24.4%
60	Italy	−1.4%	−3.1%	−3.4%	−2.4%	−5.2%
61	Jamaica	−0.6%	−1.3%	−0.7%	−0.2%	−0.4%
62	Japan	−1.5%	−3.8%	−4.4%	−4.2%	−7.1%
63	Jordan	−4.8%	−8.5%	−11.3%	−16.2%	−24.7%
64	Kazakhstan	–	–	–	–	–
65	Kenya	−3.7%	−6.6%	−8.5%	−11.3%	−19.6%
66	Kuwait	2.7%	−2.0%	−5.9%	−13.7%	−25.3%
67	Kyrgyzstan	–	–	–	–	–
68	Lao People's Democratic Republic	–	–	–	–	–
69	Latvia	1.1%	0.4%	2.2%	5.1%	6.7%
70	Lesotho	–	–	–	–	–
71	Liberia	−2.4%	−13.0%	−17.0%	−23.0%	−34.4%
72	Lithuania	−0.2%	−4.3%	−5.3%	−5.4%	−10.3%
73	Luxembourg	–	–	–	–	–
74	Malawi	–	–	–	–	–
75	Malaysia	−4.4%	−11.1%	−16.2%	−19.4%	−28.9%
76	Maldives	−3.9%	−6.3%	−11.1%	−22.0%	−30.3%
77	Mali	–	–	–	–	–
78	Malta	1.1%	2.2%	2.3%	2.1%	1.7%
79	Mauritania	−5.1%	−11.1%	−16.5%	−22.0%	−33.8%
80	Mauritius	−3.2%	−9.8%	−17.4%	−20.2%	−28.6%
81	Mexico	−3.7%	−8.4%	−10.4%	−12.5%	−19.8%
82	Mongolia	–	–	–	–	–
83	Morocco	−3.5%	−7.6%	−11.1%	−13.7%	−21.6%
84	Mozambique	−5.4%	−11.5%	−15.4%	−17.3%	−26.2%
85	Myanmar	−3.1%	−9.0%	−14.5%	−18.5%	−27.5%
86	Namibia	0.8%	1.8%	3.6%	5.5%	3.7%
87	Nepal	–	–	–	–	–
88	Netherlands	−3.4%	−6.2%	−6.8%	−5.6%	−9.9%
89	New Zealand	−5.1%	−11.1%	−15.6%	−18.0%	−29.1%
90	Nicaragua	−2.1%	−8.2%	−12.5%	−14.3%	−21.4%
91	Niger	–	–	–	–	–
92	Nigeria	−4.7%	−12.1%	−19.4%	−26.8%	−40.4%
93	Norway	−0.9%	−4.1%	−5.3%	−5.9%	−10.6%
94	Pakistan	−5.0%	−11.9%	−17.5%	−22.0%	−32.7%
95	Panama	−2.5%	−6.9%	−13.9%	−16.9%	−24.6%
96	Papua New Guinea	−6.4%	−12.6%	−14.2%	−18.6%	−31.0%

(*Continued*)

Table A3.36 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
97	Paraguay	–	–	–	–	–
98	Peru	−5.4%	−12.0%	−18.4%	−25.0%	−36.0%
99	Philippines	−3.6%	−9.2%	−13.9%	−18.6%	−28.5%
100	Poland	−0.9%	−7.1%	−10.7%	−13.1%	−20.2%
101	Portugal	−0.1%	0.9%	3.0%	4.9%	6.2%
102	Qatar	−3.2%	−7.5%	−17.4%	−36.5%	−47.7%
103	Republic of Korea	−3.0%	−6.1%	−8.0%	−10.0%	−15.3%
104	Republic of Moldova	–	–	–	–	–
105	Romania	–	–	–	–	–
106	Russian Federation	−2.1%	−5.5%	−5.4%	−5.4%	−11.9%
107	Rwanda	–	–	–	–	–
108	Saudi Arabia	−6.0%	−14.3%	−17.4%	−20.7%	−32.2%
109	Senegal	−4.7%	−10.2%	−14.0%	−16.2%	−24.8%
110	Serbia	–	–	–	–	–
111	Sierra Leone	−0.1%	−1.4%	−9.4%	−15.8%	−23.9%
112	Singapore	−6.6%	−13.0%	−14.1%	−20.3%	−26.9%
113	Slovakia	–	–	–	–	–
114	Slovenia	−3.4%	−9.0%	−14.1%	−17.8%	−25.7%
115	South Africa	−1.2%	−3.2%	−4.8%	−5.7%	−9.7%
116	Spain	1.0%	2.1%	2.3%	2.5%	4.6%
117	Sri Lanka	−2.3%	−6.2%	−12.6%	−16.0%	−24.9%
118	Sudan (former)	−4.4%	−9.5%	−14.5%	−19.1%	−25.4%
119	Swaziland	–	–	–	–	–
120	Sweden	−2.0%	−6.5%	−7.6%	−7.6%	−13.1%
121	Switzerland	–	–	–	–	–
122	Syrian Arab Republic	−4.7%	−10.8%	−13.8%	−15.7%	−19.6%
123	Tajikistan	–	–	–	–	–
124	Thailand	−3.5%	−8.6%	−11.4%	−12.8%	−20.0%
125	Togo	−3.4%	−7.2%	−9.7%	−11.7%	−18.5%
126	Trinidad and Tobago	−2.8%	−2.6%	−2.8%	−2.5%	−5.6%
127	Tunisia	−4.5%	−9.6%	−13.6%	−16.4%	−24.6%
128	Turkey	−3.8%	−8.9%	−12.6%	−16.1%	−25.3%
129	Uganda	–	–	–	–	–
130	Ukraine	0.2%	1.6%	1.7%	1.8%	0.6%
131	United Arab Emirates	−7.5%	−18.4%	−30.0%	−41.9%	−53.6%
132	United Kingdom	−2.7%	−7.5%	−10.4%	−12.6%	−20.0%
133	United Republic of Tanzania	−4.6%	−10.5%	−15.5%	−20.7%	−31.8%
134	United States of America	−1.8%	−3.4%	−4.6%	−5.5%	−8.3%
135	Uruguay	−4.2%	−10.9%	−13.5%	−18.7%	−27.9%
136	Venezuela (Bolivarian Republic of)	−5.5%	−14.0%	−22.1%	−28.0%	−40.1%
137	Viet Nam	−2.9%	−8.5%	−13.3%	−17.4%	−26.7%
138	Yemen	−5.4%	−12.5%	−22.0%	−28.9%	−41.2%
139	Zambia	–	–	–	–	–
140	Zimbabwe	–	–	–	–	–

Table A3.37 Fossil fuels (Fossil fuels in billions of constant 2005 US$)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	3.6	3.5	3.5	3.5	3.4	3.3
2	Albania	13.2	12.8	12.7	12.5	12.4	12.1
3	Algeria	594.3	553.3	506.6	452.5	391.8	344.8
4	Argentina	60.2	55.5	48.8	40.0	30.7	24.3
5	Armenia	–	–	–	–	2.6	2.6
6	Australia	1,780.8	1,749.7	1,713.3	1,670.6	1,625.0	1,583.7
7	Austria	4.3	3.6	2.8	2.0	1.2	0.5
8	Bahrain	6.6	5.5	4.3	3.2	2.2	1.3
9	Bangladesh	4.2	4.0	3.7	3.2	3.4	2.7
10	Barbados	0.1	0.1	0.1	0.0	0.0	–
11	Belgium	–	–	–	–	0.1	–
12	Belize	–	–	–	–	0.1	–
13	Benin	–	–	–	–	–	–
14	Bolivia (Plurinational State of)	9.6	9.3	9.0	8.2	6.9	5.4
15	Botswana	1.2	1.1	1.1	1.0	0.9	0.8
16	Brazil	426.7	410.2	387.2	354.8	311.6	270.1
17	Bulgaria	59.2	56.3	53.4	50.8	48.4	45.8
18	Burundi	–	–	–	–	–	–
19	Cambodia	–	–	–	–	–	–
20	Cameroon	12.2	9.2	6.8	5.2	6.2	5.1
21	Canada	2,587.9	2,509.8	2,415.9	2,312.3	2,204.9	2,115.9
22	Central African Republic	–	–	–	–	–	–
23	Chile	20.6	20.0	19.6	19.3	18.9	18.6
24	China	3,988.3	3,821.9	3,632.2	3,385.5	3,019.4	2,644.2
25	Colombia	224.1	211.6	192.8	174.2	153.2	129.0
26	Congo	41.6	38.1	33.1	27.7	25.1	20.2
27	Costa Rica	–	–	–	–	–	–
28	Côte d'Ivoire	3.2	3.2	2.9	2.6	3.0	2.2
29	Croatia	2.7	3.6	2.9	2.3	1.8	1.4
30	Cuba	9.0	8.6	7.8	6.6	5.4	4.3
31	Cyprus	–	–	–	–	–	–
32	Czech Republic	80.6	76.9	71.2	65.8	60.8	57.3
33	Democratic Republic of the Congo	–	–	–	–	–	–
34	Denmark	45.5	41.2	34.6	24.7	16.0	11.4
35	Dominican Republic	–	–	–	–	–	–
36	Ecuador	151.5	143.9	135.0	125.0	113.6	104.2
37	Egypt	202.7	180.5	158.1	137.6	116.2	98.3
38	El Salvador	–	–	–	–	–	–
39	Estonia	–	–	–	–	0.1	–
40	Fiji	–	–	–	–	–	–
41	Finland	0.3	0.2	0.2	0.1	0.1	–
42	France	3.5	2.6	1.9	1.4	1.1	0.7
43	Gabon	51.1	44.9	37.6	32.2	27.1	23.1

(*Continued*)

Table A3.37 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
44	Gambia	–	–	–	–	–	–
45	Germany	1,485.4	1,424.0	1,374.6	1,327.8	1,285.4	1,253.1
46	Ghana	–	–	–	–	–	0.1
47	Greece	79.2	73.9	68.2	61.9	56.1	52.0
48	Guatemala	2.3	2.2	1.9	1.5	1.2	1.0
49	Guyana	–	–	–	–	–	–
50	Haiti	–	–	–	–	–	–
51	Honduras	–	–	–	–	–	–
52	Hungary	43.0	40.6	38.4	36.6	35.2	34.2
53	Iceland	–	–	–	–	–	–
54	India	2,197.5	2,154.0	2,100.5	2,038.2	1,960.1	1,887.8
55	Indonesia	1,043.6	989.1	928.5	869.9	799.3	728.9
56	Iran (Islamic Republic of)	4,190.3	4,101.4	4,001.1	3,891.1	3,762.7	3,660.5
57	Iraq	1,532.8	1,519.5	1,495.8	1,461.5	1,426.0	1,389.6
58	Ireland	1.1	0.8	0.5	0.4	0.4	0.3
59	Israel	9.0	9.0	9.0	8.9	8.7	7.9
60	Italy	26.1	22.1	17.9	14.3	10.7	8.1
61	Jamaica	–	–	–	–	0.0	–
62	Japan	36.3	29.4	23.2	17.5	11.9	7.7
63	Jordan	0.5	0.5	0.4	0.3	0.3	0.2
64	Kazakhstan	901.2	986.3	970.9	945.9	911.4	878.8
65	Kenya	–	–	–	–	–	–
66	Kuwait	1,605.6	1,574.5	1,523.9	1,471.1	1,408.4	1,357.4
67	Kyrgyzstan	10.4	10.5	10.4	10.4	10.3	10.3
68	Lao People's Democratic Republic	1.5	1.5	1.5	1.4	1.4	1.4
69	Latvia	–	–	–	–	–	–
70	Lesotho	–	–	–	–	–	–
71	Liberia	–	–	–	–	–	–
72	Lithuania	0.3	0.3	0.2	0.1	0.0	–
73	Luxembourg	–	–	–	–	–	–
74	Malawi	–	–	–	–	–	–
75	Malaysia	306.1	285.5	258.8	228.6	196.7	171.9
76	Maldives	–	–	–	–	–	–
77	Mali	–	–	–	–	–	–
78	Malta	–	–	–	–	–	–
79	Mauritania	–	–	–	–	0.7	0.6
80	Mauritius	–	–	–	–	–	–
81	Mexico	270.7	237.9	201.2	161.1	120.2	90.8
82	Mongolia	46.0	45.5	45.1	44.7	43.7	41.7
83	Morocco	0.2	0.2	0.2	0.1	0.4	0.4
84	Mozambique	30.3	30.3	30.3	30.3	146.9	145.9
85	Myanmar	21.1	20.8	20.2	17.7	14.5	14.5
86	Namibia	–	–	–	–	2.7	2.7
87	Nepal	–	–	–	–	–	–

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
88	Netherlands	122.0	104.5	87.9	72.3	56.4	43.5
89	New Zealand	145.1	142.5	139.9	137.6	135.3	133.4
90	Nicaragua	–	–	–	–	–	–
91	Niger	2.8	2.8	2.8	2.8	2.8	2.6
92	Nigeria	712.0	668.9	621.9	571.3	517.7	472.6
93	Norway	484.3	430.8	353.1	266.9	192.0	142.0
94	Pakistan	134.6	129.1	122.6	114.9	104.4	95.6
95	Panama	–	–	–	–	–	–
96	Papua New Guinea	12.8	11.7	10.0	8.9	8.1	7.7
97	Paraguay	–	–	–	–	–	–
98	Peru	47.5	44.6	41.8	39.5	35.9	30.6
99	Philippines	6.3	6.1	6.0	5.9	10.0	9.0
100	Poland	485.3	464.7	446.0	428.8	413.3	401.0
101	Portugal	–	–	–	–	0.5	0.4
102	Qatar	451.3	442.3	429.5	410.5	382.7	350.6
103	Republic of Korea	21.5	18.4	15.9	13.9	11.9	9.7
104	Republic of Moldova	–	–	–	–	–	–
105	Romania	47.4	38.2	30.8	24.1	17.8	13.4
106	Russian Federation	4,182.8	6,248.4	6,000.0	5,709.2	5,372.1	5,084.0
107	Rwanda	–	–	–	–	1.6	1.6
108	Saudi Arabia	4,377.7	4,184.8	3,976.8	3,759.5	3,511.8	3,305.3
109	Senegal	–	–	–	–	–	–
110	Serbia	–	–	–	–	5.6	2.7
111	Sierra Leone	–	–	–	–	–	–
112	Singapore	–	–	–	–	–	–
113	Slovakia	4.9	5.4	4.8	4.2	3.6	3.2
114	Slovenia	9.7	9.2	8.8	8.3	7.8	7.5
115	South Africa	261.9	244.1	222.5	199.6	175.8	156.6
116	Spain	41.7	37.2	33.9	31.0	29.1	28.4
117	Sri Lanka	–	–	–	–	–	–
118	Sudan (former)	61.4	61.4	61.1	57.0	49.8	45.5
119	Swaziland	1.0	1.0	1.0	1.0	0.9	0.9
120	Sweden	–	–	–	–	0.1	0.0
121	Switzerland	0.0	0.0	0.0	0.0	0.0	–
122	Syrian Arab Republic	64.6	55.8	45.2	35.3	27.0	22.6
123	Tajikistan	4.9	5.1	5.0	5.0	5.0	5.0
124	Thailand	93.9	88.8	80.5	69.1	53.5	37.7
125	Togo	–	–	–	–	–	–
126	Trinidad and Tobago	64.3	59.9	54.7	46.5	34.2	24.5
127	Tunisia	18.2	15.9	13.7	11.4	9.2	7.7
128	Turkey	269.1	262.5	255.0	248.7	240.6	234.4
129	Uganda	27.8	27.8	27.8	27.8	27.8	27.8
130	Ukraine	604.8	654.8	643.2	631.0	618.6	609.1
131	United Arab Emirates	1,343.8	1,296.0	1,246.9	1,195.0	1,136.3	1,084.5

(*Continued*)

Table A3.37 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
132	United Kingdom	336.7	273.6	191.8	119.8	70.9	45.4
133	United Republic of Tanzania	2.3	2.3	2.3	2.3	2.3	2.3
134	United States of America	5,843.9	5,502.4	5,160.5	4,829.0	4,497.7	4,187.2
135	Uruguay	–	–	–	–	–	–
136	Venezuela (Bolivarian Republic of)	4,300.1	4,237.3	4,157.6	4,082.7	4,015.7	3,963.6
137	Viet Nam	164.6	162.3	157.4	148.8	137.8	128.8
138	Yemen	51.6	47.9	41.9	34.9	52.0	47.8
139	Zambia	0.8	0.7	0.7	0.7	0.7	0.7
140	Zimbabwe	9.7	9.3	8.9	8.6	8.4	8.1

Table A3.38 Fossil fuel per capita (Fossil fuel per capita in thousands of constant 2005 US$)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	0.3	0.2	0.2	0.1	0.1	0.1
2	Albania	4.0	4.0	4.1	4.2	4.2	4.2
3	Algeria	22.9	19.1	16.2	13.6	10.9	8.9
4	Argentina	1.8	1.6	1.3	1.0	0.7	0.6
5	Armenia	–	–	–	–	0.9	0.9
6	Australia	104.4	96.8	89.5	81.9	73.8	67.5
7	Austria	0.6	0.4	0.3	0.2	0.1	0.1
8	Bahrain	13.2	9.7	6.5	3.7	1.7	0.9
9	Bangladesh	0.0	0.0	0.0	0.0	0.0	0.0
10	Barbados	0.5	0.4	0.3	0.2	0.1	–
11	Belgium	–	–	–	–	0.0	–
12	Belize	–	–	–	–	0.2	–
13	Benin	–	–	–	–	–	–
14	Bolivia (Plurinational State of)	1.4	1.2	1.1	0.9	0.7	0.5
15	Botswana	0.9	0.7	0.6	0.5	0.4	0.3
16	Brazil	2.8	2.5	2.2	1.9	1.6	1.3
17	Bulgaria	6.8	6.7	6.5	6.6	6.5	6.3
18	Burundi	–	–	–	–	–	–
19	Cambodia	–	–	–	–	–	–
20	Cameroon	1.0	0.7	0.4	0.3	0.3	0.2
21	Canada	93.1	85.5	78.5	71.6	64.8	59.5
22	Central African Republic	–	–	–	–	0.0	0.0
23	Chile	1.6	1.4	1.3	1.2	1.1	1.0
24	China	3.5	3.2	2.9	2.6	2.3	1.9
25	Colombia	6.5	5.7	4.8	4.0	3.3	2.7
26	Congo	17.4	14.0	10.7	7.9	6.2	4.5
27	Costa Rica	–	–	–	–	0.0	–
28	Côte d'Ivoire	0.3	0.2	0.2	0.1	0.2	0.1
29	Croatia	0.6	0.8	0.7	0.5	0.4	0.3

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
30	Cuba	0.9	0.8	0.7	0.6	0.5	0.4
31	Cyprus	–	–	–	–	0.0	–
32	Czech Republic	7.8	7.4	6.9	6.4	5.8	5.4
33	Democratic Republic of the Congo	–	–	–	–	–	–
34	Denmark	8.8	7.9	6.5	4.6	2.9	2.0
35	Dominican Republic	–	–	–	–	–	–
36	Ecuador	14.8	12.6	10.7	9.1	7.6	6.6
37	Egypt	3.6	2.9	2.3	1.8	1.4	1.1
38	El Salvador	–	–	–	–	–	–
39	Estonia	–	–	–	–	0.1	–
40	Fiji	–	–	–	–	–	–
41	Finland	0.1	0.0	0.0	0.0	0.0	–
42	France	0.1	0.0	0.0	0.0	0.0	0.0
43	Gabon	53.7	41.4	30.5	23.4	17.6	13.7
44	Gambia	–	–	–	–	–	–
45	Germany	18.7	17.4	16.7	16.1	15.7	15.5
46	Ghana	–	–	–	–	–	0.0
47	Greece	7.8	7.0	6.3	5.6	5.0	4.8
48	Guatemala	0.3	0.2	0.2	0.1	0.1	0.1
49	Guyana	–	–	–	–	–	–
50	Haiti	–	–	–	–	–	–
51	Honduras	–	–	–	–	–	–
52	Hungary	4.1	3.9	3.8	3.6	3.5	3.5
53	Iceland	–	–	–	–	–	–
54	India	2.5	2.2	2.0	1.8	1.6	1.5
55	Indonesia	5.8	5.0	4.4	3.8	3.3	2.9
56	Iran (Islamic Republic of)	74.6	68.0	60.8	55.5	50.7	46.8
57	Iraq	87.7	75.2	63.5	54.1	46.2	39.4
58	Ireland	0.3	0.2	0.1	0.1	0.1	0.1
59	Israel	1.9	1.6	1.4	1.3	1.1	1.0
60	Italy	0.5	0.4	0.3	0.2	0.2	0.1
61	Jamaica	–	–	–	–	0.0	–
62	Japan	0.3	0.2	0.2	0.1	0.1	0.1
63	Jordan	0.2	0.1	0.1	0.1	0.0	0.0
64	Kazakhstan	55.1	62.4	65.2	62.4	55.8	50.8
65	Kenya	–	–	–	–	–	–
66	Kuwait	779.9	961.8	789.8	649.9	460.4	361.7
67	Kyrgyzstan	2.4	2.3	2.1	2.0	1.9	1.8
68	Lao People's Democratic Republic	0.3	0.3	0.3	0.3	0.2	0.2
69	Latvia	–	–	–	–	0.0	–
70	Lesotho	–	–	–	–	–	–
71	Liberia	–	–	–	–	–	–
72	Lithuania	0.1	0.1	0.1	0.0	0.0	–
73	Luxembourg	–	–	–	–	–	–

(*Continued*)

Table A3.38 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
74	Malawi	–	–	–	–	0.0	0.0
75	Malaysia	16.8	13.8	11.0	8.9	7.0	5.7
76	Maldives	–	–	–	–	–	–
77	Mali	–	–	–	–	–	–
78	Malta	–	–	–	–	–	–
79	Mauritania	–	–	–	–	0.2	0.2
80	Mauritius	–	–	–	–	–	–
81	Mexico	3.2	2.5	2.0	1.5	1.0	0.7
82	Mongolia	21.1	19.8	18.8	17.7	16.1	14.3
83	Morocco	0.0	0.0	0.0	0.0	0.0	0.0
84	Mozambique	2.3	1.9	1.7	1.4	6.0	5.4
85	Myanmar	0.5	0.5	0.4	0.4	0.3	0.3
86	Namibia	–	–	–	–	1.2	1.1
87	Nepal	0.0	0.0	0.0	0.0	0.0	0.0
88	Netherlands	8.2	6.8	5.5	4.4	3.4	2.6
89	New Zealand	43.6	38.8	36.3	33.3	31.1	29.6
90	Nicaragua	–	–	–	–	0.0	–
91	Niger	0.4	0.3	0.2	0.2	0.2	0.1
92	Nigeria	7.4	6.2	5.1	4.1	3.2	2.7
93	Norway	114.2	98.8	78.6	57.7	39.3	27.6
94	Pakistan	1.3	1.1	0.9	0.7	0.6	0.5
95	Panama	–	–	–	–	–	–
96	Papua New Guinea	3.1	2.5	1.9	1.5	1.2	1.0
97	Paraguay	–	–	–	–	0.0	–
98	Peru	2.2	1.9	1.6	1.4	1.2	1.0
99	Philippines	0.1	0.1	0.1	0.1	0.1	0.1
100	Poland	12.7	12.0	11.7	11.2	10.9	10.5
101	Portugal	–	–	–	–	0.0	0.0
102	Qatar	947.2	882.7	723.7	490.5	216.7	161.4
103	Republic of Korea	0.5	0.4	0.3	0.3	0.2	0.2
104	Republic of Moldova	–	–	–	–	–	–
105	Romania	2.0	1.7	1.4	1.1	0.9	0.7
106	Russian Federation	28.2	42.1	40.9	39.8	37.6	35.4
107	Rwanda	–	–	–	–	0.2	0.1
108	Saudi Arabia	267.6	222.0	185.9	151.9	125.0	107.0
109	Senegal	–	–	–	–	0.0	–
110	Serbia	–	–	–	–	0.8	0.4
111	Sierra Leone	–	–	–	–	–	–
112	Singapore	–	–	–	–	0.0	–
113	Slovakia	0.9	1.0	0.9	0.8	0.7	0.6
114	Slovenia	4.8	4.6	4.4	4.1	3.8	3.6
115	South Africa	7.4	6.2	5.1	4.2	3.5	2.9
116	Spain	1.1	0.9	0.8	0.7	0.6	0.6
117	Sri Lanka	–	–	–	–	–	–
118	Sudan (former)	3.1	2.5	2.2	1.8	1.4	1.2

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
119	Swaziland	1.1	1.0	0.9	0.9	0.8	0.7
120	Sweden	–	–	–	–	0.0	0.0
121	Switzerland	0.0	0.0	0.0	0.0	0.0	–
122	Syrian Arab Republic	5.2	3.9	2.8	1.9	1.3	1.2
123	Tajikistan	0.9	0.9	0.8	0.7	0.7	0.6
124	Thailand	1.7	1.5	1.3	1.0	0.8	0.6
125	Togo	–	–	–	–	–	–
126	Trinidad and Tobago	52.6	47.7	43.1	35.8	25.7	18.1
127	Tunisia	2.2	1.8	1.4	1.1	0.9	0.7
128	Turkey	5.0	4.5	4.0	3.7	3.3	3.0
129	Uganda	1.6	1.4	1.2	1.0	0.8	0.7
130	Ukraine	11.7	12.7	13.1	13.4	13.5	13.4
131	United Arab Emirates	741.8	551.4	408.8	266.6	136.4	119.4
132	United Kingdom	5.9	4.7	3.3	2.0	1.1	0.7
133	United Republic of Tanzania	0.1	0.1	0.1	0.1	0.1	0.0
134	United States of America	23.4	20.7	18.3	16.3	14.5	13.1
135	Uruguay	–	–	–	–	–	–
136	Venezuela (Bolivarian Republic of)	216.5	191.0	169.8	152.5	138.5	129.1
137	Viet Nam	2.5	2.3	2.0	1.8	1.6	1.4
138	Yemen	4.3	3.1	2.4	1.7	2.2	1.8
139	Zambia	0.1	0.1	0.1	0.1	0.1	0.0
140	Zimbabwe	0.9	0.8	0.7	0.7	0.6	0.5

Table A3.39 Fossil fuel growth (Fossil fuel change (%) with respect to base year 1990)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	−0.3%	−0.8%	−0.8%	−1.2%	−2.7%
2	Albania	−0.6%	−1.1%	−1.4%	−1.6%	−2.9%
3	Algeria	−1.4%	−3.9%	−6.6%	−9.9%	−16.6%
4	Argentina	−1.6%	−5.1%	−9.7%	−15.5%	−26.1%
5	Armenia	–	–	–	–	–
6	Australia	−0.4%	−1.0%	−1.6%	−2.3%	−3.8%
7	Austria	−3.7%	−10.2%	−17.9%	−26.6%	−51.7%
8	Bahrain	−3.6%	−9.9%	−16.2%	−24.1%	−42.3%
9	Bangladesh	−1.1%	−3.4%	−6.6%	−5.4%	−13.6%
10	Barbados	−4.9%	−14.3%	−24.4%	−38.8%	−100.0%
11	Belgium	–	–	–	–	–
12	Belize	–	–	–	–	–
13	Benin	–	–	–	–	–
14	Bolivia (Plurinational State of)	−0.6%	−1.6%	−3.8%	−7.9%	−17.3%
15	Botswana	−1.4%	−3.6%	−5.7%	−7.9%	−14.0%
16	Brazil	−0.8%	−2.4%	−4.5%	−7.6%	−14.1%
17	Bulgaria	−1.0%	−2.5%	−3.8%	−4.9%	−8.2%

(*Continued*)

Table A3.39 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
18	Burundi	–	–	–	–	–
19	Cambodia	–	–	–	–	–
20	Cameroon	−5.4%	−13.6%	−19.1%	−15.5%	−25.2%
21	Canada	−0.6%	−1.7%	−2.8%	−3.9%	−6.5%
22	Central African Republic	–	–	–	–	–
23	Chile	−0.5%	−1.2%	−1.6%	−2.1%	−3.4%
24	China	−0.8%	−2.3%	−4.0%	−6.7%	−12.8%
25	Colombia	−1.1%	−3.7%	−6.1%	−9.1%	−16.8%
26	Congo	−1.7%	−5.5%	−9.6%	−11.8%	−21.4%
27	Costa Rica	–	–	–	–	–
28	Côte d'Ivoire	−0.3%	−2.7%	−5.3%	−1.3%	−12.1%
29	Croatia	6.3%	2.1%	−3.7%	−9.9%	−19.2%
30	Cuba	−0.9%	−3.5%	−7.3%	−12.1%	−21.7%
31	Cyprus	–	–	–	–	–
32	Czech Republic	−0.9%	−3.0%	−4.9%	−6.8%	−10.7%
33	Democratic Republic of the Congo	–	–	–	–	–
34	Denmark	−2.0%	−6.6%	−14.1%	−23.0%	−37.0%
35	Dominican Republic	–	–	–	–	–
36	Ecuador	−1.0%	−2.8%	−4.7%	−6.9%	−11.7%
37	Egypt	−2.3%	−6.0%	−9.2%	−13.0%	−21.4%
38	El Salvador	–	–	–	–	–
39	Estonia	–	–	–	–	–
40	Fiji	–	–	–	–	–
41	Finland	−3.7%	−11.8%	−21.5%	−25.0%	−100.0%
42	France	−6.1%	−14.4%	−21.2%	−25.9%	−40.7%
43	Gabon	−2.5%	−7.4%	−10.9%	−14.6%	−23.2%
44	Gambia	–	–	–	–	–
45	Germany	−0.8%	−1.9%	−2.8%	−3.6%	−5.5%
46	Ghana	–	–	–	–	–
47	Greece	−1.4%	−3.7%	−6.0%	−8.3%	−13.1%
48	Guatemala	−0.9%	−4.8%	−9.8%	−15.1%	−24.7%
49	Guyana	–	–	–	–	–
50	Haiti	–	–	–	–	–
51	Honduras	–	–	–	–	–
52	Hungary	−1.1%	−2.8%	−3.9%	−4.9%	−7.3%
53	Iceland	–	–	–	–	–
54	India	−0.4%	−1.1%	−1.9%	−2.8%	−4.9%
55	Indonesia	−1.1%	−2.9%	−4.4%	−6.5%	−11.3%
56	Iran (Islamic Republic of)	−0.4%	−1.1%	−1.8%	−2.7%	−4.4%
57	Iraq	−0.2%	−0.6%	−1.2%	−1.8%	−3.2%
58	Ireland	−7.3%	−17.9%	−22.4%	−24.8%	−34.7%
59	Israel	0.0%	0.0%	−0.2%	−0.9%	−4.3%
60	Italy	−3.3%	−9.0%	−14.0%	−20.0%	−32.2%
61	Jamaica	–	–	–	–	–
62	Japan	−4.2%	−10.5%	−16.6%	−24.3%	−40.4%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
63	Jordan	−2.0%	−5.9%	−10.0%	−13.9%	−21.3%
64	Kazakhstan	1.8%	1.9%	1.2%	0.3%	−0.8%
65	Kenya	–	–	–	–	–
66	Kuwait	−0.4%	−1.3%	−2.2%	−3.2%	−5.4%
67	Kyrgyzstan	0.2%	0.1%	0.0%	−0.1%	−0.4%
68	Lao People's Democratic Republic	0.0%	0.0%	−0.1%	−0.2%	−0.5%
69	Latvia	–	–	–	–	–
70	Lesotho	–	–	–	–	–
71	Liberia	–	–	–	–	–
72	Lithuania	−0.9%	−6.7%	−21.7%	−36.7%	−100.0%
73	Luxembourg	–	–	–	–	–
74	Malawi	–	–	–	–	–
75	Malaysia	−1.4%	−4.1%	−7.0%	−10.5%	−17.5%
76	Maldives	–	–	–	–	–
77	Mali	–	–	–	–	–
78	Malta	–	–	–	–	–
79	Mauritania	–	–	–	–	–
80	Mauritius	–	–	–	–	–
81	Mexico	−2.5%	−7.2%	−12.2%	−18.4%	−30.5%
82	Mongolia	−0.2%	−0.5%	−0.8%	−1.3%	−3.3%
83	Morocco	−0.7%	−2.3%	−4.1%	21.8%	27.8%
84	Mozambique	0.0%	0.0%	0.0%	48.4%	68.9%
85	Myanmar	−0.3%	−1.0%	−4.2%	−8.9%	−11.8%
86	Namibia	–	–	–	–	–
87	Nepal	−0.2%	−1.5%	−2.6%	−4.2%	−7.0%
88	Netherlands	−3.1%	−7.9%	−12.3%	−17.6%	−29.1%
89	New Zealand	−0.4%	−0.9%	−1.3%	−1.7%	−2.8%
90	Nicaragua	–	–	–	–	–
91	Niger	−0.1%	−0.1%	−0.2%	−0.3%	−2.6%
92	Nigeria	−1.2%	−3.3%	−5.4%	−7.7%	−12.8%
93	Norway	−2.3%	−7.6%	−13.8%	−20.6%	−33.6%
94	Pakistan	−0.8%	−2.3%	−3.9%	−6.1%	−10.8%
95	Panama	–	–	–	–	–
96	Papua New Guinea	−1.8%	−6.0%	−8.8%	−10.8%	−15.7%
97	Paraguay	–	–	–	–	–
98	Peru	−1.3%	−3.1%	−4.5%	−6.8%	−13.6%
99	Philippines	−0.4%	−0.8%	−1.6%	12.6%	12.9%
100	Poland	−0.9%	−2.1%	−3.0%	−3.9%	−6.2%
101	Portugal	–	–	–	–	–
102	Qatar	−0.4%	−1.2%	−2.3%	−4.0%	−8.1%
103	Republic of Korea	−3.1%	−7.2%	−10.3%	−13.8%	−23.1%
104	Republic of Moldova	–	–	–	–	–
105	Romania	−4.2%	−10.2%	−15.6%	−21.7%	−34.4%
106	Russian Federation	8.4%	9.4%	8.1%	6.5%	6.7%

(*Continued*)

Table A3.39 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
107	Rwanda	–	–	–	–	–
108	Saudi Arabia	−0.9%	−2.4%	−3.7%	−5.4%	−8.9%
109	Senegal	–	–	–	–	–
110	Serbia	–	–	–	–	–
111	Sierra Leone	–	–	–	–	–
112	Singapore	–	–	–	–	–
113	Slovakia	1.9%	−0.6%	−3.8%	−7.1%	−12.7%
114	Slovenia	−0.9%	−2.4%	−3.7%	−5.1%	−8.0%
115	South Africa	−1.4%	−4.0%	−6.6%	−9.5%	−15.8%
116	Spain	−2.2%	−5.1%	−7.2%	−8.5%	−11.9%
117	Sri Lanka	–	–	–	–	–
118	Sudan (former)	0.0%	−0.1%	−1.9%	−5.1%	−9.5%
119	Swaziland	−0.1%	−0.4%	−0.7%	−0.9%	−1.4%
120	Sweden	–	–	–	–	–
121	Switzerland	0.0%	0.0%	0.0%	16.7%	−100.0%
122	Syrian Arab Republic	−2.9%	−8.6%	−14.0%	−19.6%	−29.6%
123	Tajikistan	0.7%	0.8%	0.8%	0.7%	0.7%
124	Thailand	−1.1%	−3.8%	−7.4%	−13.1%	−26.2%
125	Togo	–	–	–	–	–
126	Trinidad and Tobago	−1.4%	−4.0%	−7.8%	−14.6%	−27.5%
127	Tunisia	−2.7%	−7.0%	−11.0%	−15.7%	−25.0%
128	Turkey	−0.5%	−1.3%	−2.0%	−2.8%	−4.5%
129	Uganda	0.0%	0.0%	0.0%	0.0%	0.0%
130	Ukraine	1.6%	1.5%	1.1%	0.6%	0.2%
131	United Arab Emirates	−0.7%	−1.9%	−2.9%	−4.1%	−6.9%
132	United Kingdom	−4.1%	−13.1%	−22.8%	−32.3%	−48.7%
133	United Republic of Tanzania	0.0%	0.0%	−0.1%	−0.1%	−0.1%
134	United States of America	−1.2%	−3.1%	−4.7%	−6.3%	−10.5%
135	Uruguay	–	–	–	–	–
136	Venezuela (Bolivarian Republic of)	−0.3%	−0.8%	−1.3%	−1.7%	−2.7%
137	Viet Nam	−0.3%	−1.1%	−2.5%	−4.3%	−7.8%
138	Yemen	−1.5%	−5.1%	−9.3%	0.2%	−2.5%
139	Zambia	−0.6%	−1.1%	−1.4%	−1.5%	−2.3%
140	Zimbabwe	−1.0%	−2.3%	−3.2%	−3.7%	−6.0%

Table A3.40 Fossil fuel per capita growth (Fossil fuel per capita change (%) with respect to base year 1990)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	−6.7%	−12.2%	−16.8%	−19.9%	−29.5%
2	Albania	0.0%	0.5%	0.8%	1.4%	1.4%
3	Algeria	−3.6%	−8.3%	−12.2%	−17.0%	−27.2%
4	Argentina	−2.9%	−8.0%	−13.7%	−20.2%	−32.5%
5	Armenia	–	–	–	–	–

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
6	Australia	−1.5%	−3.8%	−5.9%	−8.3%	−13.5%
7	Austria	−4.4%	−11.2%	−19.3%	−28.2%	−53.4%
8	Bahrain	−6.1%	−16.3%	−27.1%	−39.9%	−58.8%
9	Bangladesh	−3.3%	−8.4%	−13.4%	−13.5%	−24.6%
10	Barbados	−5.2%	−15.1%	−25.4%	−39.8%	−100.0%
11	Belgium	–	–	–	–	–
12	Belize	–	–	–	–	–
13	Benin	–	–	–	–	–
14	Bolivia (Plurinational State of)	−2.6%	−6.3%	−10.4%	−16.0%	−28.4%
15	Botswana	−4.0%	−9.0%	−12.5%	−16.5%	−26.6%
16	Brazil	−2.3%	−6.1%	−9.7%	−13.8%	−22.7%
17	Bulgaria	−0.3%	−1.0%	−0.9%	−0.9%	−2.3%
18	Burundi	–	–	–	–	–
19	Cambodia	–	–	–	–	–
20	Cameroon	−8.1%	−19.4%	−26.9%	−26.1%	−39.5%
21	Canada	−1.7%	−4.2%	−6.4%	−8.7%	−13.9%
22	Central African Republic	–	–	–	–	–
23	Chile	−2.0%	−4.7%	−6.5%	−8.2%	−12.6%
24	China	−2.0%	−4.9%	−7.3%	−10.5%	−18.0%
25	Colombia	−2.9%	−7.6%	−11.4%	−15.5%	−25.6%
26	Congo	−4.3%	−11.6%	−17.9%	−22.8%	−36.4%
27	Costa Rica	–	–	–	–	–
28	Côte d'Ivoire	−3.6%	−9.9%	−14.3%	−13.0%	−28.0%
29	Croatia	6.8%	4.1%	−1.9%	−8.1%	−15.9%
30	Cuba	−1.5%	−4.7%	−8.7%	−13.5%	−23.6%
31	Cyprus	–	–	–	–	–
32	Czech Republic	−0.9%	−2.9%	−4.6%	−7.1%	−11.3%
33	Democratic Republic of the Congo	–	–	–	–	–
34	Denmark	−2.3%	−7.5%	−15.2%	−24.4%	−38.9%
35	Dominican Republic	–	–	–	–	–
36	Ecuador	−3.2%	−7.9%	−11.5%	−15.4%	−23.8%
37	Egypt	−4.3%	−10.4%	−15.4%	−20.8%	−32.7%
38	El Salvador	–	–	–	–	–
39	Estonia	–	–	–	–	–
40	Fiji	–	–	–	–	–
41	Finland	−4.2%	−12.6%	−22.4%	−26.4%	−100.0%
42	France	−6.5%	−15.2%	−22.7%	−27.8%	−43.2%
43	Gabon	−5.1%	−13.1%	−18.8%	−24.3%	−36.6%
44	Gambia	–	–	–	–	–
45	Germany	−1.4%	−2.8%	−3.7%	−4.2%	−6.1%
46	Ghana	–	–	–	–	–
47	Greece	−2.1%	−5.0%	−7.7%	−10.2%	−15.0%
48	Guatemala	−3.3%	−10.4%	−17.6%	−24.6%	−37.5%
49	Guyana	–	–	–	–	–
50	Haiti	–	–	–	–	–

(*Continued*)

Table A3.40 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
51	Honduras	–	–	–	–	–
52	Hungary	−1.0%	−2.4%	−3.2%	−4.0%	−5.8%
53	Iceland	–	–	–	–	–
54	India	−2.3%	−5.7%	−8.3%	−10.9%	−16.7%
55	Indonesia	−2.7%	−6.5%	−9.6%	−12.9%	−20.7%
56	Iran (Islamic Republic of)	−1.8%	−5.0%	−7.1%	−9.2%	−14.4%
57	Iraq	−3.0%	−7.8%	−11.4%	−14.8%	−23.4%
58	Ireland	−7.8%	−19.5%	−25.6%	−29.6%	−40.4%
59	Israel	−3.4%	−7.3%	−9.6%	−12.4%	−20.8%
60	Italy	−3.3%	−9.1%	−14.4%	−20.9%	−33.7%
61	Jamaica	–	–	–	–	–
62	Japan	−4.4%	−11.1%	−17.3%	−25.0%	−40.9%
63	Jordan	−6.8%	−13.8%	−19.9%	−27.1%	−39.5%
64	Kazakhstan	2.5%	4.3%	3.2%	0.3%	−2.7%
65	Kenya	–	–	–	–	–
66	Kuwait	4.3%	0.3%	−4.5%	−12.3%	−22.6%
67	Kyrgyzstan	−0.6%	−2.6%	−4.0%	−5.4%	−9.4%
68	Lao People's Democratic Republic	−2.6%	−5.6%	−7.3%	−9.4%	−14.5%
69	Latvia	–	–	–	–	–
70	Lesotho	–	–	–	–	–
71	Liberia	–	–	–	–	–
72	Lithuania	−0.5%	−5.4%	−19.6%	−33.8%	−100.0%
73	Luxembourg	–	–	–	–	–
74	Malawi	–	–	–	–	–
75	Malaysia	−3.9%	−10.0%	−14.8%	−19.7%	−30.1%
76	Maldives	–	–	–	–	–
77	Mali	–	–	–	–	–
78	Malta	–	–	–	–	–
79	Mauritania	–	–	–	–	–
80	Mauritius	–	–	–	–	–
81	Mexico	−4.4%	−11.3%	−17.5%	−24.8%	−38.8%
82	Mongolia	−1.2%	−2.8%	−4.3%	−6.5%	−12.1%
83	Morocco	−2.4%	−5.9%	−8.7%	14.3%	15.3%
84	Mozambique	−3.4%	−7.5%	−10.8%	27.8%	33.3%
85	Myanmar	−1.5%	−4.1%	−8.3%	−13.5%	−18.6%
86	Namibia	–	–	–	–	–
87	Nepal	−2.8%	−7.2%	−9.8%	−12.4%	−18.8%
88	Netherlands	−3.7%	−9.3%	−14.2%	−19.7%	−31.9%
89	New Zealand	−2.3%	−4.5%	−6.5%	−8.1%	−12.1%
90	Nicaragua	–	–	–	–	–
91	Niger	−3.4%	−8.5%	−12.7%	−16.8%	−27.4%
92	Nigeria	−3.7%	−9.2%	−13.9%	−18.7%	−29.0%
93	Norway	−2.8%	−8.9%	−15.7%	−23.4%	−37.7%
94	Pakistan	−3.4%	−8.2%	−12.0%	−16.3%	−25.5%
95	Panama	–	–	–	–	–

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
96	Papua New Guinea	−4.2%	−11.9%	−17.1%	−21.3%	−30.7%
97	Paraguay	–	–	–	–	–
98	Peru	−3.2%	−7.2%	−10.0%	−13.5%	−23.1%
99	Philippines	−2.7%	−6.4%	−9.3%	1.7%	−3.5%
100	Poland	−1.1%	−2.2%	−3.1%	−3.9%	−6.1%
101	Portugal	–	–	–	–	–
102	Qatar	−1.4%	−6.5%	−15.2%	−30.8%	−44.6%
103	Republic of Korea	−4.1%	−9.3%	−12.9%	−16.8%	−27.2%
104	Republic of Moldova	–	–	–	–	–
105	Romania	−3.8%	−9.5%	−13.8%	−19.0%	−31.0%
106	Russian Federation	8.3%	9.8%	9.0%	7.5%	7.8%
107	Rwanda	–	–	–	–	–
108	Saudi Arabia	−3.7%	−8.7%	−13.2%	−17.3%	−26.3%
109	Senegal	–	–	–	–	–
110	Serbia	–	–	–	–	–
111	Sierra Leone	–	–	–	–	–
112	Singapore	–	–	–	–	–
113	Slovakia	1.7%	−1.0%	−4.2%	−7.5%	−13.4%
114	Slovenia	−0.8%	−2.3%	−3.7%	−5.6%	−8.9%
115	South Africa	−3.5%	−9.2%	−13.2%	−17.4%	−27.0%
116	Spain	−2.5%	−5.9%	−9.8%	−12.6%	−17.1%
117	Sri Lanka	–	–	–	–	–
118	Sudan (former)	−4.1%	−8.2%	−12.7%	−18.1%	−27.8%
119	Swaziland	−2.3%	−5.5%	−6.7%	−8.6%	−13.3%
120	Sweden	–	–	–	–	–
121	Switzerland	−0.9%	−1.7%	−2.5%	12.3%	–
122	Syrian Arab Republic	−5.6%	−14.6%	−21.7%	−29.2%	−38.6%
123	Tajikistan	−1.0%	−3.0%	−5.4%	−8.0%	−13.3%
124	Thailand	−2.0%	−6.2%	−10.8%	−16.6%	−30.5%
125	Togo	–	–	–	–	–
126	Trinidad and Tobago	−1.9%	−4.9%	−9.2%	−16.4%	−30.0%
127	Tunisia	−4.5%	−10.6%	−15.5%	−20.9%	−32.1%
128	Turkey	−2.1%	−5.2%	−7.4%	−9.6%	−15.3%
129	Uganda	−3.2%	−7.5%	−11.3%	−14.9%	−22.8%
130	Ukraine	1.7%	2.9%	3.5%	3.7%	4.8%
131	United Arab Emirates	−5.8%	−13.8%	−22.6%	−34.5%	−45.6%
132	United Kingdom	−4.3%	−13.7%	−23.8%	−33.8%	−50.7%
133	United Republic of Tanzania	−3.2%	−7.0%	−10.2%	−13.6%	−21.2%
134	United States of America	−2.5%	−6.0%	−8.6%	−11.2%	−17.5%
135	Uruguay	–	–	–	–	–
136	Venezuela (Bolivarian Republic of)	−2.5%	−5.9%	−8.4%	−10.6%	−15.8%
137	Viet Nam	−2.0%	−5.0%	−7.7%	−10.7%	−17.1%
138	Yemen	−6.2%	−14.0%	−20.8%	−15.4%	−24.9%
139	Zambia	−3.1%	−7.4%	−10.6%	−13.8%	−21.5%
140	Zimbabwe	−3.1%	−6.5%	−8.2%	−10.4%	−17.1%

Table A3.41 Minerals (Minerals in billions of constant 2005 US$)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	–	–	–	–	–	–
2	Albania	–	–	–	–	–	–
3	Algeria	9.4	9.4	9.4	9.4	9.3	9.3
4	Argentina	–	–	–	–	–	–
5	Armenia	–	–	–	–	–	–
6	Australia	260.7	255.8	249.5	241.6	232.1	224.7
7	Austria	–	–	–	–	–	–
8	Bahrain	–	–	–	–	–	–
9	Bangladesh	–	–	–	–	–	–
10	Barbados	–	–	–	–	–	–
11	Belgium	–	–	–	–	–	–
12	Belize	–	–	–	–	–	–
13	Benin	–	–	–	–	–	–
14	Bolivia (Plurinational State of)	2.6	2.5	2.3	2.1	1.7	1.4
15	Botswana	0.9	0.8	0.7	0.6	0.5	0.4
16	Brazil	127.7	123.8	119.6	114.4	107.0	100.8
17	Bulgaria	–	–	–	–	–	–
18	Burundi	–	–	–	–	–	–
19	Cambodia	–	–	–	–	–	–
20	Cameroon	–	–	–	–	–	–
21	Canada	44.4	40.5	36.6	33.2	30.1	29.3
22	Central African Republic	–	–	–	–	–	–
23	Chile	90.2	87.0	81.5	74.6	67.2	60.9
24	China	194.6	187.6	179.4	169.2	147.0	118.1
25	Colombia	2.2	2.1	1.9	1.6	1.3	1.0
26	Congo	–	–	–	–	–	–
27	Costa Rica	–	–	–	–	–	–
28	Côte d'Ivoire	–	–	–	–	–	–
29	Croatia	–	–	–	–	–	–
30	Cuba	6.0	5.9	5.6	5.3	5.0	4.8
31	Cyprus	–	–	–	–	–	–
32	Czech Republic	–	–	–	–	–	–
33	Democratic Republic of the Congo	–	–	–	–	–	–
34	Denmark	–	–	–	–	–	–
35	Dominican Republic	1.4	1.2	1.1	0.9	0.8	0.8
36	Ecuador	–	–	–	–	–	–
37	Egypt	5.4	5.4	5.4	5.3	5.3	5.2
38	El Salvador	–	–	–	–	–	–
39	Estonia	–	–	–	–	–	–
40	Fiji	–	–	–	–	–	–
41	Finland	–	–	–	–	–	–
42	France	–	–	–	–	–	–
43	Gabon	–	–	–	–	–	–
44	Gambia	–	–	–	–	–	–
45	Germany	–	–	–	–	–	–
46	Ghana	3.9	3.6	3.1	2.7	2.1	1.6
47	Greece	0.6	0.6	0.6	0.5	0.5	0.5

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
48	Guatemala	–	–	–	–	–	–
49	Guyana	1.8	1.7	1.7	1.7	1.7	1.7
50	Haiti	–	–	–	–	–	–
51	Honduras	–	–	–	–	–	–
52	Hungary	–	–	–	–	–	–
53	Iceland	–	–	–	–	–	–
54	India	151.0	149.6	148.0	145.3	140.8	137.4
55	Indonesia	28.5	27.2	24.9	21.7	18.6	16.1
56	Iran (Islamic Republic of)	11.6	11.5	11.4	11.0	10.4	10.1
57	Iraq	–	–	–	–	–	–
58	Ireland	0.9	0.8	0.7	0.5	0.3	0.1
59	Israel	0.9	0.9	0.8	0.7	0.6	0.6
60	Italy	–	–	–	–	–	–
61	Jamaica	4.5	4.4	4.3	4.1	4.0	3.9
62	Japan	0.4	0.3	0.3	0.2	0.2	0.2
63	Jordan	4.7	4.7	4.6	4.5	4.4	4.3
64	Kazakhstan	17.1	16.5	15.8	14.7	13.5	12.5
65	Kenya	–	–	–	–	–	–
66	Kuwait	–	–	–	–	–	–
67	Kyrgyzstan	–	–	–	–	–	–
68	Lao People's Democratic Republic	–	–	–	–	–	–
69	Latvia	–	–	–	–	–	–
70	Lesotho	–	–	–	–	–	–
71	Liberia	–	–	–	–	–	–
72	Lithuania	–	–	–	–	–	–
73	Luxembourg	–	–	–	–	–	–
74	Malawi	–	–	–	–	–	–
75	Malaysia	0.2	0.2	0.2	0.2	0.2	0.2
76	Maldives	–	–	–	–	–	–
77	Mali	–	–	–	–	–	–
78	Malta	–	–	–	–	–	–
79	Mauritania	5.0	4.8	4.6	4.4	4.2	4.0
80	Mauritius	–	–	–	–	–	–
81	Mexico	26.2	25.1	23.7	22.3	20.5	18.5
82	Mongolia	–	–	–	–	–	–
83	Morocco	–	–	–	–	–	–
84	Mozambique	–	–	–	–	–	–
85	Myanmar	–	–	–	–	–	–
86	Namibia	–	–	–	–	–	–
87	Nepal	–	–	–	–	–	–
88	Netherlands	–	–	–	–	–	–
89	New Zealand	–	–	–	–	–	–
90	Nicaragua	–	–	–	–	–	–
91	Niger	–	–	–	–	–	–
92	Nigeria	–	–	–	–	–	–
93	Norway	–	–	–	–	–	–
94	Pakistan	–	–	–	–	–	–

(*Continued*)

Table A3.41 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
95	Panama	–	–	–	–	–	–
96	Papua New Guinea	3.1	2.7	2.4	2.0	1.6	1.4
97	Paraguay	–	–	–	–	–	–
98	Peru	43.7	42.3	40.2	36.8	32.8	29.7
99	Philippines	5.0	4.9	4.8	4.7	4.2	2.8
100	Poland	10.6	10.1	9.4	8.7	8.0	7.5
101	Portugal	0.1	0.1	0.1	0.0	0.0	0.0
102	Qatar	–	–	–	–	–	–
103	Republic of Korea	–	–	–	–	–	–
104	Republic of Moldova	–	–	–	–	–	–
105	Romania	–	–	–	–	–	–
106	Russian Federation	139.4	135.3	131.2	126.3	121.2	116.9
107	Rwanda	–	–	–	–	–	–
108	Saudi Arabia	–	–	–	–	–	–
109	Senegal	0.4	0.3	0.3	0.3	0.3	0.2
110	Serbia	–	–	–	–	–	–
111	Sierra Leone	–	–	–	–	–	–
112	Singapore	–	–	–	–	–	–
113	Slovakia	–	–	–	–	–	–
114	Slovenia	–	–	–	–	–	–
115	South Africa	38.8	34.2	30.4	27.1	24.6	22.5
116	Spain	–	–	–	–	–	–
117	Sri Lanka	–	–	–	–	–	–
118	Sudan (former)	–	–	–	–	–	–
119	Swaziland	–	–	–	–	–	–
120	Sweden	13.3	12.9	12.5	12.2	11.8	11.4
121	Switzerland	–	–	–	–	–	–
122	Syrian Arab Republic	6.1	6.1	6.0	6.0	5.9	5.9
123	Tajikistan	–	–	–	–	–	–
124	Thailand	0.2	0.1	0.1	0.1	0.1	0.1
125	Togo	0.3	0.3	0.2	0.2	0.2	0.1
126	Trinidad and Tobago	–	–	–	–	–	–
127	Tunisia	1.1	1.0	0.8	0.7	0.5	0.4
128	Turkey	–	–	–	–	–	–
129	Uganda	–	–	–	–	–	–
130	Ukraine	22.5	21.7	20.9	20.1	19.0	18.2
131	United Arab Emirates	–	–	–	–	–	–
132	United Kingdom	–	–	–	–	–	–
133	United Republic of Tanzania	–	–	–	–	–	–
134	United States of America	85.2	78.5	71.6	66.1	61.1	57.1
135	Uruguay	–	–	–	–	–	–
136	Venezuela (Bolivarian Republic of)	17.0	16.6	16.3	15.9	15.5	15.3
137	Viet Nam	–	–	–	–	3.8	3.8
138	Yemen	–	–	–	–	–	–
139	Zambia	7.8	7.3	6.9	6.4	5.7	5.0
140	Zimbabwe	–	–	–	–	–	–

Table A3.42 Minerals per capita (Minerals per capita in thousands of constant 2005 US$)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	–	–	–	–	–	–
2	Albania	–	–	–	–	–	–
3	Algeria	0.4	0.3	0.3	0.3	0.3	0.2
4	Argentina	–	–	–	–	–	–
5	Armenia	–	–	–	–	–	–
6	Australia	15.3	14.2	13.0	11.8	10.5	9.6
7	Austria	–	–	–	–	–	–
8	Bahrain	–	–	–	–	–	–
9	Bangladesh	–	–	–	–	–	–
10	Barbados	–	–	–	–	–	–
11	Belgium	–	–	–	–	–	–
12	Belize	–	–	–	–	–	–
13	Benin	–	–	–	–	–	–
14	Bolivia (Plurinational State of)	0.4	0.3	0.3	0.2	0.2	0.1
15	Botswana	0.6	0.5	0.4	0.3	0.2	0.2
16	Brazil	0.8	0.8	0.7	0.6	0.5	0.5
17	Bulgaria	–	–	–	–	–	–
18	Burundi	–	–	–	–	–	–
19	Cambodia	–	–	–	–	–	–
20	Cameroon	–	–	–	–	–	–
21	Canada	1.6	1.4	1.2	1.0	0.9	0.8
22	Central African Republic	–	–	–	–	–	–
23	Chile	6.9	6.1	5.4	4.6	3.9	3.4
24	China	0.2	0.2	0.1	0.1	0.1	0.1
25	Colombia	0.1	0.1	0.0	0.0	0.0	0.0
26	Congo	–	–	–	–	–	–
27	Costa Rica	–	–	–	–	–	–
28	Côte d'Ivoire	–	–	–	–	–	–
29	Croatia	–	–	–	–	–	–
30	Cuba	0.6	0.5	0.5	0.5	0.4	0.4
31	Cyprus	–	–	–	–	–	–
32	Czech Republic	–	–	–	–	–	–
33	Democratic Republic of the Congo	–	–	–	–	–	–
34	Denmark	–	–	–	–	–	–
35	Dominican Republic	0.2	0.2	0.1	0.1	0.1	0.1
36	Ecuador	–	–	–	–	–	–
37	Egypt	0.1	0.1	0.1	0.1	0.1	0.1
38	El Salvador	–	–	–	–	–	–
39	Estonia	–	–	–	–	–	–
40	Fiji	–	–	–	–	–	–
41	Finland	–	–	–	–	–	–
42	France	–	–	–	–	–	–
43	Gabon	–	–	–	–	–	–
44	Gambia	–	–	–	–	–	–

(*Continued*)

Table A3.42 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
45	Germany	–	–	–	–	–	–
46	Ghana	0.3	0.2	0.2	0.1	0.1	0.1
47	Greece	0.1	0.1	0.1	0.0	0.0	0.0
48	Guatemala	–	–	–	–	–	–
49	Guyana	2.4	2.4	2.3	2.3	2.2	2.2
50	Haiti	–	–	–	–	–	–
51	Honduras	–	–	–	–	–	–
52	Hungary	–	–	–	–	–	–
53	Iceland	–	–	–	–	–	–
54	India	0.2	0.2	0.1	0.1	0.1	0.1
55	Indonesia	0.2	0.1	0.1	0.1	0.1	0.1
56	Iran (Islamic Republic of)	0.2	0.2	0.2	0.2	0.1	0.1
57	Iraq	–	–	–	–	–	–
58	Ireland	0.3	0.2	0.2	0.1	0.1	0.0
59	Israel	0.2	0.2	0.1	0.1	0.1	0.1
60	Italy	–	–	–	–	–	–
61	Jamaica	1.9	1.8	1.6	1.6	1.5	1.4
62	Japan	0.0	0.0	0.0	0.0	0.0	0.0
63	Jordan	1.4	1.1	1.0	0.8	0.7	0.6
64	Kazakhstan	1.0	1.0	1.1	1.0	0.8	0.7
65	Kenya	–	–	–	–	–	–
66	Kuwait	–	–	–	–	–	–
67	Kyrgyzstan	–	–	–	–	–	–
68	Lao People's Democratic Republic	–	–	–	–	–	–
69	Latvia	–	–	–	–	–	–
70	Lesotho	–	–	–	–	–	–
71	Liberia	–	–	–	–	–	–
72	Lithuania	–	–	–	–	–	–
73	Luxembourg	–	–	–	–	–	–
74	Malawi	–	–	–	–	–	–
75	Malaysia	0.0	0.0	0.0	0.0	0.0	0.0
76	Maldives	–	–	–	–	–	–
77	Mali	–	–	–	–	–	–
78	Malta	–	–	–	–	–	–
79	Mauritania	2.5	2.1	1.7	1.4	1.2	1.0
80	Mauritius	–	–	–	–	–	–
81	Mexico	0.3	0.3	0.2	0.2	0.2	0.1
82	Mongolia	–	–	–	–	–	–
83	Morocco	–	–	–	–	–	–
84	Mozambique	–	–	–	–	–	–
85	Myanmar	–	–	–	–	–	–
86	Namibia	–	–	–	–	–	–
87	Nepal	–	–	–	–	–	–
88	Netherlands	–	–	–	–	–	–
89	New Zealand	–	–	–	–	–	–

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
90	Nicaragua	–	–	–	–	–	–
91	Niger	–	–	–	–	–	–
92	Nigeria	–	–	–	–	–	–
93	Norway	–	–	–	–	–	–
94	Pakistan	–	–	–	–	–	–
95	Panama	–	–	–	–	–	–
96	Papua New Guinea	0.7	0.6	0.4	0.3	0.2	0.2
97	Paraguay	–	–	–	–	–	–
98	Peru	2.0	1.8	1.6	1.3	1.1	1.0
99	Philippines	0.1	0.1	0.1	0.1	0.0	0.0
100	Poland	0.3	0.3	0.2	0.2	0.2	0.2
101	Portugal	0.0	0.0	0.0	0.0	0.0	0.0
102	Qatar	–	–	–	–	–	–
103	Republic of Korea	–	–	–	–	–	–
104	Republic of Moldova	–	–	–	–	–	–
105	Romania	–	–	–	–	–	–
106	Russian Federation	0.9	0.9	0.9	0.9	0.8	0.8
107	Rwanda	–	–	–	–	–	–
108	Saudi Arabia	–	–	–	–	–	–
109	Senegal	0.1	0.0	0.0	0.0	0.0	0.0
110	Serbia	–	–	–	–	–	–
111	Sierra Leone	–	–	–	–	–	–
112	Singapore	–	–	–	–	–	–
113	Slovakia	–	–	–	–	–	–
114	Slovenia	–	–	–	–	–	–
115	South Africa	1.1	0.9	0.7	0.6	0.5	0.4
116	Spain	–	–	–	–	–	–
117	Sri Lanka	–	–	–	–	–	–
118	Sudan (former)	–	–	–	–	–	–
119	Swaziland	–	–	–	–	–	–
120	Sweden	1.5	1.5	1.4	1.3	1.3	1.2
121	Switzerland	–	–	–	–	–	–
122	Syrian Arab Republic	0.5	0.4	0.4	0.3	0.3	0.3
123	Tajikistan	–	–	–	–	–	–
124	Thailand	0.0	0.0	0.0	0.0	0.0	0.0
125	Togo	0.1	0.1	0.0	0.0	0.0	0.0
126	Trinidad and Tobago	–	–	–	–	–	–
127	Tunisia	0.1	0.1	0.1	0.1	0.0	0.0
128	Turkey	–	–	–	–	–	–
129	Uganda	–	–	–	–	–	–
130	Ukraine	0.4	0.4	0.4	0.4	0.4	0.4
131	United Arab Emirates	–	–	–	–	–	–
132	United Kingdom	–	–	–	–	–	–
133	United Republic of Tanzania	–	–	–	–	–	–
134	United States of America	0.3	0.3	0.3	0.2	0.2	0.2

(*Continued*)

Table A3.42 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
135	Uruguay	–	–	–	–	–	–
136	Venezuela (Bolivarian Republic of)	0.9	0.8	0.7	0.6	0.5	0.5
137	Viet Nam	–	–	–	–	0.0	0.0
138	Yemen	–	–	–	–	–	–
139	Zambia	1.0	0.8	0.7	0.5	0.4	0.3
140	Zimbabwe	–	–	–	–	–	–

Table A3.43 Minerals growth (Minerals change (%) with respect to base year 1990)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	–	–	–	–	–
2	Albania	–	–	–	–	–
3	Algeria	0.0%	−0.1%	−0.2%	−0.2%	−0.4%
4	Argentina	–	–	–	–	–
5	Armenia	–	–	–	–	–
6	Australia	−0.4%	−1.1%	−1.9%	−2.9%	−4.8%
7	Austria	–	–	–	–	–
8	Bahrain	–	–	–	–	–
9	Bangladesh	–	–	–	–	–
10	Barbados	–	–	–	–	–
11	Belgium	–	–	–	–	–
12	Belize	–	–	–	–	–
13	Benin	–	–	–	–	–
14	Bolivia (Plurinational State of)	−1.3%	−3.5%	−5.5%	−9.8%	−19.6%
15	Botswana	−2.1%	−5.9%	−10.1%	−15.3%	−26.0%
16	Brazil	−0.6%	−1.6%	−2.7%	−4.3%	−7.6%
17	Bulgaria	–	–	–	–	–
18	Burundi	–	–	–	–	–
19	Cambodia	–	–	–	–	–
20	Cameroon	–	–	–	–	–
21	Canada	−1.8%	−4.7%	−7.0%	−9.3%	−13.0%
22	Central African Republic	–	–	–	–	–
23	Chile	−0.7%	−2.5%	−4.6%	−7.1%	−12.3%
24	China	−0.7%	−2.0%	−3.4%	−6.8%	−15.3%
25	Colombia	−1.1%	−3.5%	−7.9%	−12.0%	−22.4%
26	Congo	–	–	–	–	–
27	Costa Rica	–	–	–	–	–
28	Côte d'Ivoire	–	–	–	–	–
29	Croatia	–	–	–	–	–
30	Cuba	−0.5%	−1.7%	−3.1%	−4.5%	−7.4%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
31	Cyprus	–	–	–	–	–
32	Czech Republic	–	–	–	–	–
33	Democratic Republic of the Congo	–	–	–	–	–
34	Denmark	–	–	–	–	–
35	Dominican Republic	−2.9%	−7.4%	−10.9%	−12.6%	−18.7%
36	Ecuador	–	–	–	–	–
37	Egypt	0.0%	−0.1%	−0.3%	−0.6%	−1.4%
38	El Salvador	–	–	–	–	–
39	Estonia	–	–	–	–	–
40	Fiji	–	–	–	–	–
41	Finland	–	–	–	–	–
42	France	–	–	–	–	–
43	Gabon	–	–	–	–	–
44	Gambia	–	–	–	–	–
45	Germany	–	–	–	–	–
46	Ghana	−1.4%	−4.9%	−8.6%	−13.9%	−25.0%
47	Greece	−0.8%	−1.7%	−2.8%	−3.8%	−5.9%
48	Guatemala	–	–	–	–	–
49	Guyana	−0.2%	−0.6%	−0.9%	−1.1%	−1.8%
50	Haiti	–	–	–	–	–
51	Honduras	–	–	–	–	–
52	Hungary	–	–	–	–	–
53	Iceland	–	–	–	–	–
54	India	−0.2%	−0.5%	−1.0%	−1.7%	−3.1%
55	Indonesia	−0.9%	−3.3%	−6.6%	−10.1%	−17.3%
56	Iran (Islamic Republic of)	−0.2%	−0.6%	−1.4%	−2.8%	−4.7%
57	Iraq	–	–	–	–	–
58	Ireland	−2.5%	−6.7%	−14.4%	−25.4%	−45.9%
59	Israel	−1.3%	−3.8%	−6.3%	−8.5%	−13.9%
60	Italy	–	–	–	–	–
61	Jamaica	−0.5%	−1.3%	−2.1%	−2.8%	−4.3%
62	Japan	−2.9%	−7.6%	−11.8%	−16.6%	−26.9%
63	Jordan	−0.3%	−0.9%	−1.5%	−2.0%	−3.3%
64	Kazakhstan	−0.8%	−2.1%	−3.7%	−5.8%	−9.9%
65	Kenya	–	–	–	–	–
66	Kuwait	–	–	–	–	–
67	Kyrgyzstan	–	–	–	–	–
68	Lao People's Democratic Republic	–	–	–	–	–
69	Latvia	–	–	–	–	–
70	Lesotho	–	–	–	–	–
71	Liberia	–	–	–	–	–
72	Lithuania	–	–	–	–	–

(*Continued*)

Table A3.43 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
73	Luxembourg	–	–	–	–	–
74	Malawi	–	–	–	–	–
75	Malaysia	−3.2%	−6.3%	−7.8%	−8.8%	−13.3%
76	Maldives	–	–	–	–	–
77	Mali	–	–	–	–	–
78	Malta	–	–	–	–	–
79	Mauritania	−0.8%	−2.1%	−3.2%	−4.4%	−7.2%
80	Mauritius	–	–	–	–	–
81	Mexico	−0.9%	−2.5%	−4.0%	−5.9%	−11.0%
82	Mongolia	–	–	–	–	–
83	Morocco	–	–	–	–	–
84	Mozambique	–	–	–	–	–
85	Myanmar	–	–	–	–	–
86	Namibia	–	–	–	–	–
87	Nepal	–	–	–	–	–
88	Netherlands	–	–	–	–	–
89	New Zealand	–	–	–	–	–
90	Nicaragua	–	–	–	–	–
91	Niger	–	–	–	–	–
92	Nigeria	–	–	–	–	–
93	Norway	–	–	–	–	–
94	Pakistan	–	–	–	–	–
95	Panama	–	–	–	–	–
96	Papua New Guinea	−2.4%	−6.2%	−10.2%	−14.6%	−23.6%
97	Paraguay	–	–	–	–	–
98	Peru	−0.6%	−2.1%	−4.2%	−6.9%	−12.0%
99	Philippines	−0.2%	−0.7%	−1.2%	−4.0%	−17.3%
100	Poland	−1.0%	−2.9%	−4.9%	−6.8%	−10.9%
101	Portugal	−4.1%	−9.4%	−10.1%	−10.1%	−13.4%
102	Qatar	–	–	–	–	–
103	Republic of Korea	–	–	–	–	–
104	Republic of Moldova	–	–	–	–	–
105	Romania	–	–	–	–	–
106	Russian Federation	−0.6%	−1.5%	−2.4%	−3.4%	−5.7%
107	Rwanda	–	–	–	–	–
108	Saudi Arabia	–	–	–	–	–
109	Senegal	−2.2%	−5.6%	−8.6%	−10.2%	−15.4%
110	Serbia	–	–	–	–	–
111	Sierra Leone	–	–	–	–	–
112	Singapore	–	–	–	–	–
113	Slovakia	–	–	–	–	–
114	Slovenia	–	–	–	–	–
115	South Africa	−2.5%	−5.9%	−8.5%	−10.8%	−16.6%
116	Spain	–	–	–	–	–

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
117	Sri Lanka	–	–	–	–	–
118	Sudan (former)	–	–	–	–	–
119	Swaziland	–	–	–	–	–
120	Sweden	−0.5%	−1.4%	−2.1%	−2.9%	−5.0%
121	Switzerland	–	–	–	–	–
122	Syrian Arab Republic	−0.1%	−0.2%	−0.4%	−0.7%	−1.0%
123	Tajikistan	–	–	–	–	–
124	Thailand	−2.8%	−4.5%	−5.3%	−5.4%	−7.3%
125	Togo	−3.8%	−9.7%	−13.0%	−15.4%	−23.2%
126	Trinidad and Tobago	–	–	–	–	–
127	Tunisia	−2.4%	−7.2%	−12.3%	−18.3%	−27.8%
128	Turkey	–	–	–	–	–
129	Uganda	–	–	–	–	–
130	Ukraine	−0.8%	−1.8%	−2.9%	−4.1%	−6.9%
131	United Arab Emirates	–	–	–	–	–
132	United Kingdom	–	–	–	–	–
133	United Republic of Tanzania	–	–	–	–	–
134	United States of America	−1.6%	−4.3%	−6.1%	−7.9%	−12.5%
135	Uruguay	–	–	–	–	–
136	Venezuela (Bolivarian Republic of)	−0.5%	−1.1%	−1.7%	−2.3%	−3.5%
137	Viet Nam	–	–	–	–	–
138	Yemen	–	–	–	–	–
139	Zambia	−1.3%	−3.0%	−4.7%	−7.5%	−13.8%
140	Zimbabwe	–	–	–	–	–

Table A3.44 Minerals per capita growth (Minerals per capita change (%) with respect to base year 1990)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	–	–	–	–	–
2	Albania	–	–	–	–	–
3	Algeria	−2.2%	−4.6%	−6.2%	−8.1%	−13.1%
4	Argentina	–	–	–	–	–
5	Armenia	–	–	–	–	–
6	Australia	−1.5%	−3.9%	−6.2%	−8.9%	−14.4%
7	Austria	–	–	–	–	–
8	Bahrain	–	–	–	–	–
9	Bangladesh	–	–	–	–	–
10	Barbados	–	–	–	–	–
11	Belgium	–	–	–	–	–
12	Belize	–	–	–	–	–

(*Continued*)

Table A3.44 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
13	Benin	–	–	–	–	–
14	Bolivia (Plurinational State of)	−3.3%	−8.1%	−12.0%	−17.7%	−30.3%
15	Botswana	−4.7%	−11.2%	−16.6%	−23.3%	−36.9%
16	Brazil	−2.2%	−5.4%	−8.0%	−10.7%	−16.8%
17	Bulgaria	–	–	–	–	–
18	Burundi	–	–	–	–	–
19	Cambodia	–	–	–	–	–
20	Cameroon	–	–	–	–	–
21	Canada	−2.9%	−7.1%	−10.4%	−13.7%	−19.8%
22	Central African Republic	–	–	–	–	–
23	Chile	−2.2%	−5.9%	−9.3%	−12.9%	−20.6%
24	China	−1.9%	−4.6%	−6.7%	−10.5%	−20.4%
25	Colombia	−2.8%	−7.4%	−13.1%	−18.2%	−30.6%
26	Congo	–	–	–	–	–
27	Costa Rica	–	–	–	–	–
28	Côte d'Ivoire	–	–	–	–	–
29	Croatia	–	–	–	–	–
30	Cuba	−1.1%	−2.9%	−4.6%	−6.1%	−9.6%
31	Cyprus	–	–	–	–	–
32	Czech Republic	–	–	–	–	–
33	Democratic Republic of the Congo	–	–	–	–	–
34	Denmark	–	–	–	–	–
35	Dominican Republic	−4.7%	−11.3%	−16.3%	−19.3%	−28.2%
36	Ecuador	–	–	–	–	–
37	Egypt	−2.0%	−4.8%	−7.2%	−9.5%	−15.5%
38	El Salvador	–	–	–	–	–
39	Estonia	–	–	–	–	–
40	Fiji	–	–	–	–	–
41	Finland	–	–	–	–	–
42	France	–	–	–	–	–
43	Gabon	–	–	–	–	–
44	Gambia	–	–	–	–	–
45	Germany	–	–	–	–	–
46	Ghana	−4.0%	−10.8%	−16.9%	−24.2%	−38.7%
47	Greece	−1.4%	−3.2%	−4.6%	−5.8%	−8.0%
48	Guatemala	–	–	–	–	–
49	Guyana	−0.4%	−1.4%	−1.6%	−2.2%	−3.7%
50	Haiti	–	–	–	–	–
51	Honduras	–	–	–	–	–
52	Hungary	–	–	–	–	–
53	Iceland	–	–	–	–	–
54	India	−2.1%	−5.1%	−7.5%	−9.9%	−15.1%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
55	Indonesia	−2.5%	−7.0%	−11.6%	−16.3%	−26.1%
56	Iran (Islamic Republic of)	−1.6%	−4.5%	−6.7%	−9.3%	−14.7%
57	Iraq	–	–	–	–	–
58	Ireland	−3.0%	−8.5%	−17.9%	−30.1%	−50.6%
59	Israel	−4.7%	−10.7%	−15.1%	−19.1%	−28.8%
60	Italy	–	–	–	–	–
61	Jamaica	−1.2%	−3.3%	−4.5%	−5.6%	−8.3%
62	Japan	−3.2%	−8.2%	−12.6%	−17.4%	−27.6%
63	Jordan	−5.2%	−9.2%	−12.2%	−17.0%	−25.8%
64	Kazakhstan	−0.1%	0.3%	−1.8%	−5.8%	−11.6%
65	Kenya	–	–	–	–	–
66	Kuwait	–	–	–	–	–
67	Kyrgyzstan	–	–	–	–	–
68	Lao People's Democratic Republic	–	–	–	–	–
69	Latvia	–	–	–	–	–
70	Lesotho	–	–	–	–	–
71	Liberia	–	–	–	–	–
72	Lithuania	–	–	–	–	–
73	Luxembourg	–	–	–	–	–
74	Malawi	–	–	–	–	–
75	Malaysia	−5.7%	−12.0%	−15.5%	−18.2%	−26.5%
76	Maldives	–	–	–	–	–
77	Mali	–	–	–	–	–
78	Malta	–	–	–	–	–
79	Mauritania	−3.6%	−9.1%	−13.4%	−17.2%	−25.8%
80	Mauritius	–	–	–	–	–
81	Mexico	−2.8%	−6.8%	−9.7%	−13.3%	−21.6%
82	Mongolia	–	–	–	–	–
83	Morocco	–	–	–	–	–
84	Mozambique	–	–	–	–	–
85	Myanmar	–	–	–	–	–
86	Namibia	–	–	–	–	–
87	Nepal	–	–	–	–	–
88	Netherlands	–	–	–	–	–
89	New Zealand	–	–	–	–	–
90	Nicaragua	–	–	–	–	–
91	Niger	–	–	–	–	–
92	Nigeria	–	–	–	–	–
93	Norway	–	–	–	–	–
94	Pakistan	–	–	–	–	–
95	Panama	–	–	–	–	–
96	Papua New Guinea	−4.8%	−12.0%	−18.4%	−24.7%	−37.1%
97	Paraguay	–	–	–	–	–
98	Peru	−2.5%	−6.2%	−9.6%	−13.6%	−21.7%

(*Continued*)

Table A3.44 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
99	Philippines	−2.6%	−6.2%	−9.0%	−13.2%	−29.3%
100	Poland	−1.3%	−3.0%	−4.9%	−6.7%	−10.8%
101	Portugal	−4.2%	−10.1%	−11.2%	−11.4%	−14.6%
102	Qatar	–	–	–	–	–
103	Republic of Korea	–	–	–	–	–
104	Republic of Moldova	–	–	–	–	–
105	Romania	–	–	–	–	–
106	Russian Federation	−0.6%	−1.2%	−1.6%	−2.5%	−4.7%
107	Rwanda	–	–	–	–	–
108	Saudi Arabia	–	–	–	–	–
109	Senegal	−5.1%	−11.8%	−17.4%	−21.6%	−32.3%
110	Serbia	–	–	–	–	–
111	Sierra Leone	–	–	–	–	–
112	Singapore	–	–	–	–	–
113	Slovakia	–	–	–	–	–
114	Slovenia	–	–	–	–	–
115	South Africa	−4.5%	−11.0%	−15.0%	−18.6%	−27.7%
116	Spain	–	–	–	–	–
117	Sri Lanka	–	–	–	–	–
118	Sudan (former)	–	–	–	–	–
119	Swaziland	–	–	–	–	–
120	Sweden	−1.1%	−2.3%	−3.4%	−5.1%	−8.8%
121	Switzerland	–	–	–	–	–
122	Syrian Arab Republic	−2.8%	−6.8%	−9.4%	−12.5%	−13.7%
123	Tajikistan	–	–	–	–	–
124	Thailand	−3.7%	−6.9%	−8.8%	−9.2%	−12.7%
125	Togo	−6.1%	−15.2%	−21.0%	−25.8%	−37.8%
126	Trinidad and Tobago	–	–	–	–	–
127	Tunisia	−4.2%	−10.8%	−16.7%	−23.4%	−34.7%
128	Turkey	–	–	–	–	–
129	Uganda	–	–	–	–	–
130	Ukraine	−0.7%	−0.5%	−0.5%	−1.1%	−2.6%
131	United Arab Emirates	–	–	–	–	–
132	United Kingdom	–	–	–	–	–
133	United Republic of Tanzania	–	–	–	–	–
134	United States of America	−2.9%	−7.2%	−10.0%	−12.8%	−19.3%
135	Uruguay	–	–	–	–	–
136	Venezuela (Bolivarian Republic of)	−2.6%	−6.1%	−8.8%	−11.1%	−16.5%
137	Viet Nam	–	–	–	–	–
138	Yemen	–	–	–	–	–
139	Zambia	−3.8%	−9.2%	−13.5%	−19.1%	−30.8%
140	Zimbabwe	–	–	–	–	–

Table A3.45 IWI adjusted (Average growth rate in percentage from 1990–1995)

	Country/year	*Average growth rate in percentage from 1990–1995*						
		Growth IW	*Growth population*	*Growth IW per capita (unadjusted)*	*Growth of carbon damages*	*Growth of oil capital gains*	*Growth of TFP*	*Growth IW per capita (adjusted)*
1	Afghanistan	6.0%	6.8%	−0.7%	−0.1%	0.1%	−1.0%	−1.7%
2	Albania	−0.4%	−0.6%	0.2%	−0.1%	0.1%	0.9%	1.1%
3	Algeria	1.1%	2.2%	−1.0%	−0.1%	−0.9%	−1.1%	−3.2%
4	Argentina	1.1%	1.3%	−0.2%	−0.1%	0.4%	4.2%	4.2%
5	Armenia	−1.4%	−1.9%	0.4%	0.0%	0.3%	−9.3%	−8.6%
6	Australia	1.0%	1.2%	−0.1%	0.0%	0.2%	0.7%	0.8%
7	Austria	2.1%	0.7%	1.4%	−0.3%	0.3%	0.2%	1.6%
8	Bahrain	3.0%	2.6%	0.3%	−0.3%	0.1%	1.6%	1.7%
9	Bangladesh	2.3%	2.2%	0.0%	0.0%	0.0%	0.2%	0.2%
10	Barbados	0.6%	0.3%	0.2%	−0.2%	0.7%	−1.2%	−0.4%
11	Belgium	1.9%	0.3%	1.6%	−0.3%	0.5%	−0.9%	1.0%
12	Belize	0.4%	2.0%	−1.5%	−0.1%	0.2%	1.7%	0.3%
13	Benin	3.7%	3.7%	0.0%	0.0%	0.0%	3.3%	3.3%
14	Bolivia (Plurinational State of)	0.1%	2.0%	−1.8%	0.0%	0.1%	1.3%	−0.5%
15	Botswana	1.9%	2.7%	−0.7%	0.0%	0.0%	−2.0%	−2.7%
16	Brazil	0.4%	1.6%	−1.1%	−0.1%	0.1%	1.4%	0.3%
17	Bulgaria	−1.3%	−0.7%	−0.6%	0.0%	0.1%	−1.7%	−2.2%
18	Burundi	1.2%	2.1%	−0.9%	0.0%	0.0%	−1.2%	−2.1%
19	Cambodia	0.3%	3.5%	−3.1%	0.0%	0.0%	3.7%	0.5%
20	Cameroon	2.4%	2.9%	−0.5%	0.0%	0.0%	−1.8%	−2.3%

(*Continued*)

Table A3.45 (Continued)

	Country/year	*Average growth rate in percentage from 1990–1995*						
		Growth IW	*Growth population*	*Growth IW per capita (unadjusted)*	*Growth of carbon damages*	*Growth of oil capital gains*	*Growth of TFP*	*Growth IW per capita (adjusted)*
21	Canada	0.8%	1.1%	−0.3%	0.0%	−0.9%	−0.5%	−1.7%
22	Central African Republic	1.8%	2.6%	−0.7%	0.0%	0.0%	0.1%	−0.7%
23	Chile	1.7%	1.6%	0.1%	−0.1%	0.4%	2.3%	2.7%
24	China	2.0%	1.2%	0.8%	0.0%	0.1%	4.5%	5.3%
25	Colombia	1.2%	1.8%	−0.6%	−0.1%	0.0%	0.8%	0.2%
26	Congo	2.0%	2.7%	−0.7%	0.0%	−0.2%	−3.1%	−4.0%
27	Costa Rica	1.5%	2.5%	−1.1%	−0.2%	0.4%	1.6%	0.8%
28	Côte d'Ivoire	3.0%	3.4%	−0.4%	0.0%	0.0%	1.7%	1.2%
29	Croatia	0.2%	−0.5%	0.6%	0.0%	0.2%	−5.6%	−4.9%
30	Cuba	1.0%	0.6%	0.4%	−0.1%	0.8%	−5.9%	−4.8%
31	Cyprus	3.7%	2.2%	1.4%	−0.3%	0.9%	1.7%	3.8%
32	Czech Republic	1.1%	0.0%	1.2%	0.0%	0.1%	−2.1%	−0.8%
33	Democratic Republic of the Congo	−0.2%	3.8%	−3.8%	0.0%	0.0%	−11.1%	−14.9%
34	Denmark	1.3%	0.4%	0.9%	−0.3%	0.1%	0.5%	1.2%
35	Dominican Republic	2.6%	1.9%	0.6%	−0.1%	0.5%	1.1%	2.1%
36	Ecuador	0.5%	2.3%	−1.7%	−0.1%	−1.1%	1.0%	−1.9%
37	Egypt	2.3%	2.1%	0.2%	0.0%	0.0%	1.2%	1.4%
38	El Salvador	2.1%	1.3%	0.9%	−0.1%	0.3%	3.0%	4.0%
39	Estonia	−1.5%	−1.7%	0.3%	0.0%	0.3%	−6.7%	−6.2%
40	Fiji	2.0%	1.3%	0.8%	−0.1%	0.5%	−0.2%	0.9%
41	Finland	1.0%	0.5%	0.5%	−0.2%	0.4%	−1.4%	−0.7%

42	France	1.9%	0.3%	1.5%	−0.3%	0.4%	0.1%	1.7%
43	Gabon	−0.1%	2.7%	−2.7%	0.0%	−0.2%	−0.9%	−3.7%
44	Gambia	1.1%	3.1%	−1.9%	−0.1%	0.2%	−5.0%	−6.7%
45	Germany	1.6%	0.6%	1.0%	−0.2%	0.2%	−0.3%	0.8%
46	Ghana	2.1%	2.8%	−0.7%	0.0%	0.0%	2.9%	2.2%
47	Greece	1.2%	0.7%	0.5%	−0.2%	0.4%	−0.2%	0.6%
48	Guatemala	2.3%	2.5%	−0.2%	0.0%	0.0%	2.2%	1.9%
49	Guyana	0.1%	0.2%	−0.1%	0.0%	0.1%	6.3%	6.2%
50	Haiti	2.3%	2.0%	0.3%	0.0%	0.0%	−3.9%	−3.5%
51	Honduras	−0.4%	2.7%	−2.9%	−0.1%	0.2%	0.1%	−2.7%
52	Hungary	0.9%	−0.1%	1.0%	0.0%	0.3%	−3.2%	−1.9%
53	Iceland	0.3%	1.0%	−0.7%	−0.1%	0.2%	−0.9%	−1.5%
54	India	1.3%	2.0%	−0.7%	0.0%	0.0%	0.9%	0.2%
55	Indonesia	1.2%	1.7%	−0.4%	−0.1%	0.1%	−0.9%	−1.3%
56	Iran (Islamic Republic of)	0.2%	1.4%	−1.2%	0.0%	−1.8%	1.6%	−1.5%
57	Iraq	0.6%	3.0%	−2.3%	0.0%	−3.6%	−1.6%	−7.5%
58	Ireland	1.5%	0.5%	0.9%	−0.4%	0.3%	2.8%	3.7%
59	Israel	4.7%	3.5%	1.1%	0.1%	0.8%	1.4%	3.3%
60	Italy	1.6%	0.0%	1.5%	−0.3%	0.4%	0.5%	2.1%
61	Jamaica	1.8%	0.7%	1.1%	−0.1%	0.9%	0.4%	2.3%
62	Japan	2.4%	0.3%	2.1%	0.0%	0.4%	−0.6%	1.9%
63	Jordan	6.1%	5.2%	0.9%	−0.2%	1.4%	1.9%	4.1%
64	Kazakhstan	1.2%	−0.7%	1.8%	0.0%	−0.9%	−10.6%	−9.7%
65	Kenya	2.8%	3.1%	−0.3%	0.0%	0.0%	−0.3%	−0.6%
66	Kuwait	−1.5%	−4.5%	3.1%	0.0%	−3.6%	14.8%	14.3%
67	Kyrgyzstan	1.4%	0.8%	0.7%	0.0%	0.2%	−13.2%	−12.4%
68	Lao People's Democratic Republic	1.2%	2.7%	−1.5%	0.0%	0.0%	−3.4%	−4.9%

(*Continued*)

Table A3.45 (Continued)

	Country/year	*Average growth rate in percentage from 1990–1995*						
		Growth IW	*Growth population*	*Growth IW per capita (unadjusted)*	*Growth of carbon damages*	*Growth of oil capital gains*	*Growth of TFP*	*Growth IW per capita (adjusted)*
69	Latvia	−0.4%	−1.4%	1.0%	0.0%	0.3%	−11.6%	−10.4%
70	Lesotho	0.9%	1.9%	−1.0%	0.0%	0.0%	−3.8%	−4.8%
71	Liberia	−1.6%	−0.2%	−1.4%	0.0%	0.0%	−19.8%	−21.1%
72	Lithuania	0.5%	−0.4%	0.9%	0.0%	0.3%	−9.7%	−8.5%
73	Luxembourg	3.1%	1.4%	1.7%	−0.5%	0.7%	0.6%	2.6%
74	Malawi	0.6%	0.9%	−0.3%	0.0%	0.0%	1.4%	1.1%
75	Malaysia	2.2%	2.6%	−0.4%	−0.2%	−0.1%	0.8%	0.2%
76	Maldives	2.9%	3.2%	−0.2%	−0.2%	0.2%	−1.6%	−1.9%
77	Mali	2.5%	2.6%	−0.1%	0.0%	0.0%	1.7%	1.6%
78	Malta	3.2%	0.9%	2.3%	−0.3%	1.1%	0.4%	3.4%
79	Mauritania	3.0%	2.9%	0.1%	0.0%	0.0%	2.7%	2.9%
80	Mauritius	2.8%	1.2%	1.6%	−0.2%	0.8%	−1.6%	0.7%
81	Mexico	2.3%	2.0%	0.3%	−0.2%	0.6%	−1.6%	−0.9%
82	Mongolia	0.2%	1.0%	−0.8%	0.0%	0.1%	−4.5%	−5.3%
83	Morocco	1.8%	1.7%	0.1%	0.0%	0.1%	−2.0%	−1.8%
84	Mozambique	4.2%	3.5%	0.6%	0.0%	0.0%	0.8%	1.4%
85	Myanmar	1.6%	1.3%	0.3%	0.0%	0.0%	3.0%	3.3%
86	Namibia	2.1%	3.2%	−1.0%	0.0%	0.1%	3.8%	2.9%
87	Nepal	2.8%	2.7%	0.1%	0.0%	0.0%	2.4%	2.5%
88	Netherlands	1.8%	0.7%	1.1%	−0.3%	0.5%	0.4%	1.7%
89	New Zealand	0.4%	2.0%	−1.6%	0.0%	0.1%	1.6%	0.1%
90	Nicaragua	2.3%	2.2%	0.1%	0.0%	0.1%	1.9%	2.1%
91	Niger	3.2%	3.4%	−0.2%	0.0%	0.0%	2.8%	2.6%
92	Nigeria	2.5%	2.5%	−0.1%	0.0%	−0.1%	2.0%	1.8%
93	Norway	0.2%	0.5%	−0.4%	−0.2%	−0.8%	2.8%	1.4%
94	Pakistan	0.5%	2.6%	−2.1%	−0.1%	0.2%	0.2%	−1.8%
95	Panama	1.5%	2.1%	−0.5%	−0.1%	1.4%	1.6%	2.4%

96	Papua New Guinea	2.6%	2.6%	0.0%	0.0%	0.0%	6.3%	6.3%
97	Paraguay	0.7%	2.5%	−1.7%	0.0%	0.2%	−0.5%	−2.1%
98	Peru	0.2%	1.9%	−1.7%	0.0%	0.1%	3.6%	1.9%
99	Philippines	3.0%	2.4%	0.6%	−0.1%	0.3%	−1.0%	−0.2%
100	Poland	0.6%	0.3%	0.4%	0.0%	0.2%	0.5%	1.1%
101	Portugal	2.3%	0.1%	2.2%	−0.3%	0.6%	0.1%	2.5%
102	Qatar	−0.2%	1.0%	−1.2%	−0.1%	−3.8%	0.8%	−4.3%
103	Republic of Korea	5.8%	1.0%	4.8%	−0.4%	1.1%	−0.7%	4.8%
104	Republic of Moldova	0.8%	−0.1%	0.9%	0.0%	0.4%	−16.1%	−14.8%
105	Romania	0.1%	−0.5%	0.5%	0.0%	0.3%	−1.8%	−1.0%
106	Russian Federation	1.7%	0.0%	1.7%	0.0%	−0.2%	−10.5%	−8.9%
107	Rwanda	−4.5%	−4.0%	−0.5%	0.0%	0.0%	−5.2%	−5.7%
108	Saudi Arabia	1.7%	2.9%	−1.2%	0.0%	−3.2%	1.2%	−3.2%
109	Senegal	2.6%	3.0%	−0.4%	0.0%	0.0%	−0.6%	−1.0%
110	Serbia	0.0%	0.1%	−0.1%	0.0%	0.0%	−12.3%	−12.4%
111	Sierra Leone	−1.6%	−0.5%	−1.2%	0.0%	0.0%	−5.5%	−6.7%
112	Singapore	6.2%	3.0%	3.1%	0.1%	3.2%	4.9%	11.3%
113	Slovakia	1.0%	0.2%	0.7%	0.0%	0.1%	−2.6%	−1.8%
114	Slovenia	0.9%	−0.1%	1.0%	−0.1%	0.2%	−1.6%	−0.5%
115	South Africa	1.5%	2.1%	−0.6%	−0.1%	0.2%	0.1%	−0.3%
116	Spain	2.5%	0.3%	2.2%	−0.3%	0.5%	−0.3%	2.1%
117	Sri Lanka	2.0%	1.1%	0.8%	−0.1%	0.2%	2.3%	3.2%
118	Sudan (former)	4.2%	4.3%	−0.1%	0.0%	0.0%	2.4%	2.2%
119	Swaziland	4.4%	2.2%	2.1%	−0.2%	0.2%	−1.8%	0.3%
120	Sweden	1.3%	0.6%	0.7%	−0.3%	0.3%	−0.6%	0.1%
121	Switzerland	4.2%	1.0%	3.2%	−0.3%	0.3%	−5.1%	−1.9%
122	Syrian Arab Republic	2.4%	2.9%	−0.4%	0.0%	0.8%	5.0%	5.4%

(*Continued*)

Table A3.45 (Continued)

	Country/year	*Average growth rate in percentage from 1990–1995*						
		Growth IW	*Growth population*	*Growth IW per capita (unadjusted)*	*Growth of carbon damages*	*Growth of oil capital gains*	*Growth of TFP*	*Growth IW per capita (adjusted)*
123	Tajikistan	2.6%	1.8%	0.8%	0.0%	0.1%	−17.8%	−16.9%
124	Thailand	3.3%	0.9%	2.3%	−0.1%	0.4%	−1.6%	1.1%
125	Togo	2.3%	2.5%	−0.2%	0.0%	0.0%	1.5%	1.3%
126	Trinidad and Tobago	−0.5%	0.5%	−1.0%	−0.1%	−0.4%	2.0%	0.4%
127	Tunisia	2.7%	1.9%	0.7%	−0.1%	0.3%	1.1%	2.0%
128	Turkey	2.5%	1.6%	0.9%	−0.2%	0.4%	−1.2%	−0.1%
129	Uganda	3.3%	3.3%	0.1%	0.0%	0.0%	4.6%	4.6%
130	Ukraine	−0.3%	−0.1%	−0.1%	0.0%	0.0%	−14.9%	−15.0%
131	United Arab Emirates	2.4%	5.3%	−2.8%	−0.1%	−2.6%	1.8%	−3.7%
132	United Kingdom	1.6%	0.3%	1.4%	−0.4%	0.3%	−0.6%	0.7%
133	United Republic of Tanzania	3.0%	3.3%	−0.2%	0.0%	0.0%	−1.7%	−2.0%
134	United States of America	1.9%	1.3%	0.6%	−0.1%	0.5%	−0.2%	0.8%
135	Uruguay	1.1%	0.7%	0.4%	−0.1%	0.2%	1.4%	1.9%
136	Venezuela (Bolivarian Republic of)	0.0%	2.2%	−2.2%	0.0%	−3.8%	1.4%	−4.6%
137	Viet Nam	2.0%	1.7%	0.2%	−0.1%	−0.2%	−1.4%	−1.5%
138	Yemen	4.2%	5.0%	−0.8%	0.0%	−0.1%	3.7%	2.8%
139	Zambia	2.4%	2.6%	−0.2%	0.0%	0.0%	0.8%	0.6%
140	Zimbabwe	0.7%	2.2%	−1.5%	0.0%	0.0%	0.2%	−1.2%

Table A3.46 IWI adjusted (Average growth rate in percentage from 1995–2000)

	Country/year	*Average growth rate in percentage from 1995–2000*						
		Growth IW	*Growth population*	*Growth IW per capita (unadjusted)*	*Growth of carbon damages*	*Growth of oil capital gains*	*Growth of TFP*	*Growth IW per capita (adjusted)*
1	Afghanistan	12.5%	13.0%	−0.5%	−0.1%	0.1%	−4.3%	−4.7%
2	Albania	−0.2%	−1.5%	1.4%	−0.1%	0.1%	4.6%	5.9%
3	Algeria	2.9%	4.7%	−1.8%	−0.1%	−1.4%	2.0%	−1.2%
4	Argentina	3.0%	3.2%	−0.2%	−0.2%	0.5%	0.4%	0.5%
5	Armenia	−2.4%	−3.5%	1.1%	−0.1%	0.5%	6.0%	7.6%
6	Australia	3.0%	2.9%	0.0%	0.0%	0.2%	0.7%	1.0%
7	Austria	4.9%	1.1%	3.8%	−0.4%	0.3%	1.4%	5.2%
8	Bahrain	7.0%	7.7%	−0.6%	−0.4%	0.1%	0.6%	−0.3%
9	Bangladesh	5.5%	5.5%	0.0%	0.0%	0.0%	−0.6%	−0.7%
10	Barbados	2.0%	0.9%	1.1%	−0.3%	0.9%	1.5%	3.2%
11	Belgium	4.9%	0.7%	4.2%	−0.4%	0.7%	0.6%	5.1%
12	Belize	1.1%	7.2%	−5.6%	−0.1%	0.4%	3.4%	−2.0%
13	Benin	8.8%	8.6%	0.2%	0.0%	0.0%	3.0%	3.2%
14	Bolivia (Plurinational State of)	0.5%	5.0%	−4.3%	0.0%	0.1%	−1.5%	−5.7%
15	Botswana	3.8%	5.9%	−2.0%	0.0%	0.0%	−1.0%	−3.1%
16	Brazil	1.2%	4.0%	−2.6%	−0.1%	0.2%	0.2%	−2.4%
17	Bulgaria	−2.7%	−1.6%	−1.1%	0.0%	0.1%	−2.7%	−3.8%
18	Burundi	5.3%	4.8%	0.5%	0.0%	0.0%	−0.8%	−0.3%
19	Cambodia	0.5%	7.9%	−6.8%	0.0%	0.1%	1.3%	−5.4%
20	Cameroon	5.9%	7.2%	−1.2%	0.0%	0.0%	3.4%	2.1%
21	Canada	2.2%	2.6%	−0.4%	0.0%	−1.5%	1.5%	−0.3%

(*Continued*)

Table A3.46 (Continued)

	Country/year	*Average growth rate in percentage from 1995–2000*						
		Growth IW	*Growth population*	*Growth IW per capita (unadjusted)*	*Growth of carbon damages*	*Growth of oil capital gains*	*Growth of TFP*	*Growth IW per capita (adjusted)*
22	Central African Republic	4.3%	6.1%	−1.7%	0.0%	0.0%	1.9%	0.2%
23	Chile	4.7%	3.7%	1.0%	−0.2%	0.7%	−1.8%	−0.3%
24	China	4.9%	2.7%	2.1%	0.0%	0.1%	−0.6%	1.6%
25	Colombia	2.8%	4.2%	−1.4%	−0.1%	0.0%	−1.1%	−2.6%
26	Congo	4.8%	6.8%	−1.9%	0.0%	−0.3%	1.0%	−1.2%
27	Costa Rica	4.2%	6.1%	−1.8%	−0.2%	0.6%	0.7%	−0.6%
28	Côte d'Ivoire	6.7%	7.9%	−1.1%	0.0%	0.0%	1.4%	0.3%
29	Croatia	1.0%	−1.9%	3.0%	−0.1%	0.5%	0.5%	3.9%
30	Cuba	2.0%	1.2%	0.8%	−0.1%	0.9%	5.5%	7.0%
31	Cyprus	8.0%	5.3%	2.6%	−0.4%	1.3%	1.5%	5.0%
32	Czech Republic	2.9%	−0.2%	3.1%	−0.1%	0.4%	−0.2%	3.2%
33	Democratic Republic of the Congo	−0.4%	8.3%	−8.0%	0.0%	0.0%	−7.1%	−15.1%
34	Denmark	4.0%	1.0%	3.0%	−0.4%	0.2%	0.2%	3.0%
35	Dominican Republic	7.6%	4.5%	3.0%	−0.2%	0.8%	−0.1%	3.5%
36	Ecuador	1.2%	5.4%	−4.0%	−0.1%	−1.8%	0.1%	−5.8%
37	Egypt	5.0%	4.9%	0.1%	0.0%	0.0%	1.1%	1.2%
38	El Salvador	5.1%	2.6%	2.5%	−0.1%	0.5%	−0.5%	2.3%
39	Estonia	−2.1%	−2.9%	0.8%	0.0%	0.4%	4.4%	5.6%
40	Fiji	3.4%	2.7%	0.6%	−0.1%	0.6%	0.4%	1.6%
41	Finland	3.1%	0.9%	2.1%	−0.3%	0.4%	3.1%	5.3%
42	France	4.8%	1.0%	3.7%	−0.4%	0.5%	1.3%	5.0%
43	Gabon	−0.1%	6.6%	−6.3%	0.0%	−0.3%	−3.6%	−10.2%

44	Gambia	4.7%	7.6%	−2.7%	−0.1%	0.3%	−0.3%	−2.8%
45	Germany	3.6%	0.9%	2.7%	−0.3%	0.4%	0.0%	2.8%
46	Ghana	4.9%	6.5%	−1.5%	0.0%	0.0%	3.0%	1.5%
47	Greece	3.3%	1.5%	1.9%	−0.3%	0.6%	1.6%	3.7%
48	Guatemala	5.6%	6.3%	−0.7%	0.0%	0.1%	0.8%	0.2%
49	Guyana	0.1%	0.8%	−0.6%	0.0%	0.1%	1.7%	1.1%
50	Haiti	5.8%	4.8%	1.0%	0.0%	0.0%	−1.5%	−0.5%
51	Honduras	−1.0%	6.2%	−6.8%	−0.1%	0.4%	−0.2%	−6.7%
52	Hungary	2.3%	−0.4%	2.7%	−0.1%	0.3%	1.1%	4.1%
53	Iceland	1.3%	2.5%	−1.2%	−0.2%	0.2%	3.3%	2.2%
54	India	4.1%	4.9%	−0.8%	0.0%	0.0%	1.1%	0.4%
55	Indonesia	3.1%	3.9%	−0.8%	−0.1%	0.1%	−4.6%	−5.4%
56	Iran (Islamic Republic of)	0.7%	4.1%	−3.2%	0.0%	−2.9%	2.0%	−4.1%
57	Iraq	1.6%	7.8%	−5.8%	0.0%	−5.8%	28.0%	16.4%
58	Ireland	6.5%	2.0%	4.4%	−0.5%	0.5%	6.5%	10.9%
59	Israel	11.2%	7.8%	3.2%	0.1%	1.1%	0.8%	5.1%
60	Italy	4.0%	0.1%	3.9%	−0.4%	0.5%	0.8%	4.8%
61	Jamaica	3.8%	2.0%	1.7%	−0.1%	1.3%	−1.8%	1.1%
62	Japan	5.4%	0.7%	4.7%	−0.1%	0.5%	−0.9%	4.2%
63	Jordan	11.8%	9.2%	2.4%	−0.2%	2.1%	0.5%	4.8%
64	Kazakhstan	0.7%	−2.3%	3.1%	0.0%	−1.5%	4.0%	5.5%
65	Kenya	6.5%	7.3%	−0.8%	0.0%	0.0%	−0.5%	−1.2%
66	Kuwait	−1.2%	−1.6%	0.4%	0.0%	−5.5%	0.1%	−5.1%
67	Kyrgyzstan	4.1%	2.8%	1.3%	0.0%	0.2%	6.1%	7.5%
68	Lao People's Democratic Republic	2.8%	5.9%	−2.9%	0.0%	0.0%	−1.8%	−4.7%
69	Latvia	−0.1%	−2.9%	2.9%	0.0%	0.5%	3.3%	6.6%

(*Continued*)

Table A3.46 (Continued)

	Country/year	*Average growth rate in percentage from 1995–2000*						
		Growth IW	*Growth population*	*Growth IW per capita (unadjusted)*	*Growth of carbon damages*	*Growth of oil capital gains*	*Growth of TFP*	*Growth IW per capita (adjusted)*
70	Lesotho	0.8%	3.8%	−2.9%	0.0%	0.0%	−1.1%	−4.0%
71	Liberia	6.5%	8.3%	−1.6%	0.0%	0.0%	37.2%	35.5%
72	Lithuania	1.2%	−1.4%	2.6%	0.0%	0.5%	3.9%	7.0%
73	Luxembourg	8.4%	3.4%	4.8%	−0.6%	0.9%	2.4%	7.5%
74	Malawi	3.5%	4.4%	−0.9%	0.0%	0.0%	3.9%	3.1%
75	Malaysia	5.4%	6.5%	−1.0%	−0.2%	0.1%	−0.6%	−1.8%
76	Maldives	8.0%	7.0%	0.9%	−0.2%	0.5%	0.7%	1.9%
77	Mali	6.7%	6.8%	−0.1%	0.0%	0.0%	1.4%	1.3%
78	Malta	8.4%	1.9%	6.4%	−0.5%	1.8%	0.3%	8.0%
79	Mauritania	6.8%	7.6%	−0.7%	0.0%	0.0%	4.5%	3.8%
80	Mauritius	7.3%	2.9%	4.3%	−0.2%	1.1%	0.0%	5.2%
81	Mexico	5.9%	4.7%	1.2%	−0.2%	0.7%	2.1%	3.7%
82	Mongolia	1.4%	2.4%	−0.9%	0.0%	0.1%	0.8%	−0.1%
83	Morocco	4.3%	3.8%	0.5%	0.0%	0.1%	0.5%	1.1%
84	Mozambique	8.8%	8.1%	0.7%	0.0%	0.0%	5.8%	6.5%
85	Myanmar	3.8%	3.2%	0.6%	0.0%	0.0%	2.0%	2.6%
86	Namibia	5.5%	7.6%	−1.9%	−0.1%	0.2%	1.0%	−0.9%
87	Nepal	6.1%	6.1%	0.0%	0.0%	0.0%	1.4%	1.4%
88	Netherlands	5.0%	1.6%	3.4%	−0.4%	0.6%	1.9%	5.4%
89	New Zealand	1.1%	3.7%	−2.5%	0.0%	0.1%	0.8%	−1.6%
90	Nicaragua	4.9%	4.9%	−0.1%	−0.1%	0.2%	3.2%	3.3%
91	Niger	8.6%	9.1%	−0.5%	0.0%	0.0%	4.0%	3.5%
92	Nigeria	6.2%	6.5%	−0.3%	0.0%	−0.2%	3.8%	3.3%

93	Norway	0.9%	1.4%	−0.6%	−0.3%	−1.1%	2.0%	0.1%
94	Pakistan	1.4%	6.5%	−4.8%	−0.1%	0.3%	0.3%	−4.3%
95	Panama	4.5%	5.2%	−0.6%	−0.2%	1.8%	−0.1%	0.8%
96	Papua New Guinea	6.5%	6.6%	−0.1%	0.0%	0.0%	−1.8%	−1.9%
97	Paraguay	2.5%	5.9%	−3.2%	−0.1%	0.3%	−2.3%	−5.2%
98	Peru	0.9%	4.4%	−3.4%	−0.1%	0.1%	0.6%	−2.7%
99	Philippines	7.5%	5.9%	1.5%	−0.1%	0.5%	0.1%	1.9%
100	Poland	2.4%	0.1%	2.3%	−0.1%	0.3%	0.4%	3.0%
101	Portugal	6.9%	0.8%	6.1%	−0.4%	0.8%	1.3%	7.8%
102	Qatar	−0.1%	5.6%	−5.4%	−0.1%	−5.9%	7.3%	−4.2%
103	Republic of Korea	13.8%	2.3%	11.2%	−0.5%	1.8%	0.5%	13.0%
104	Republic of Moldova	0.6%	−0.4%	1.0%	0.0%	0.3%	0.1%	1.4%
105	Romania	0.6%	−0.8%	1.5%	0.0%	0.3%	−1.1%	0.6%
106	Russian Federation	1.6%	−0.3%	1.9%	0.0%	−0.3%	3.3%	4.9%
107	Rwanda	4.9%	2.5%	2.3%	0.0%	0.0%	8.5%	10.8%
108	Saudi Arabia	2.0%	6.9%	−4.6%	−0.1%	−4.9%	−0.7%	−10.3%
109	Senegal	6.3%	7.0%	−0.7%	0.0%	0.0%	1.9%	1.3%
110	Serbia	0.0%	−0.2%	0.2%	0.0%	0.0%	1.2%	1.3%
111	Sierra Leone	−2.5%	0.8%	−3.3%	0.0%	0.0%	−8.8%	−12.1%
112	Singapore	16.8%	7.2%	9.0%	0.1%	5.2%	6.0%	20.2%
113	Slovakia	3.0%	0.4%	2.6%	−0.1%	0.4%	1.5%	4.4%
114	Slovenia	3.5%	−0.1%	3.7%	−0.1%	0.6%	1.3%	5.5%
115	South Africa	3.8%	5.7%	−1.8%	−0.1%	0.2%	1.3%	−0.4%
116	Spain	6.5%	0.9%	5.5%	−0.4%	0.6%	2.1%	7.8%
117	Sri Lanka	4.8%	2.2%	2.5%	−0.1%	0.3%	1.6%	4.3%
118	Sudan (former)	8.7%	8.8%	−0.2%	0.0%	−0.1%	−2.0%	−2.3%
119	Swaziland	9.2%	5.4%	3.6%	−0.3%	0.3%	0.5%	4.1%

(*Continued*)

Table A3.46 (Continued)

	Country/year	*Average growth rate in percentage from 1995–2000*						
		Growth IW	*Growth population*	*Growth IW per capita (unadjusted)*	*Growth of carbon damages*	*Growth of oil capital gains*	*Growth of TFP*	*Growth IW per capita (adjusted)*
120	Sweden	3.5%	0.9%	2.6%	−0.4%	0.4%	2.1%	4.7%
121	Switzerland	8.4%	1.7%	6.5%	−0.4%	0.3%	0.5%	6.9%
122	Syrian Arab Republic	6.0%	7.1%	−0.9%	−0.1%	1.1%	1.1%	1.2%
123	Tajikistan	5.4%	4.0%	1.4%	0.0%	0.2%	2.3%	3.9%
124	Thailand	6.9%	2.6%	4.2%	−0.1%	0.8%	−2.8%	2.1%
125	Togo	6.9%	6.5%	0.3%	0.0%	0.0%	3.0%	3.4%
126	Trinidad and Tobago	−0.9%	0.9%	−1.9%	−0.1%	−0.6%	7.2%	4.6%
127	Tunisia	6.4%	4.0%	2.3%	−0.1%	0.3%	2.7%	5.1%
128	Turkey	6.7%	4.0%	2.5%	−0.3%	0.6%	−0.3%	2.6%
129	Uganda	8.1%	8.1%	0.0%	0.0%	0.0%	2.4%	2.3%
130	Ukraine	−1.8%	−1.3%	−0.5%	0.0%	0.0%	0.0%	−0.4%
131	United Arab Emirates	6.4%	13.9%	−6.6%	−0.1%	−4.0%	3.9%	−6.8%
132	United Kingdom	4.8%	0.7%	4.1%	−0.5%	0.3%	0.3%	4.2%
133	United Republic of Tanzania	7.0%	7.5%	−0.5%	0.0%	0.0%	1.3%	0.9%
134	United States of America	5.5%	3.1%	2.4%	−0.1%	0.6%	0.6%	3.4%
135	Uruguay	2.9%	1.7%	1.2%	−0.1%	0.3%	−0.8%	0.6%
136	Venezuela (Bolivarian Republic of)	−0.1%	5.4%	−5.2%	0.0%	−6.0%	0.0%	−11.2%
137	Viet Nam	4.9%	4.1%	0.8%	−0.1%	−0.3%	−4.2%	−3.8%
138	Yemen	9.5%	10.4%	−0.9%	0.0%	−0.1%	4.0%	3.0%
139	Zambia	6.3%	6.8%	−0.5%	0.0%	0.0%	3.6%	3.1%
140	Zimbabwe	0.5%	4.5%	−3.8%	0.0%	0.0%	−0.5%	−4.3%

Table A3.47 IWI adjusted (Average growth rate in percentage from 2000–2005)

	Country/year	*Average growth rate in percentage from 2000–2005*						
		Growth IW	*Growth population*	*Growth IW per capita (unadjusted)*	*Growth of carbon damages*	*Growth of oil capital gains*	*Growth of TFP*	*Growth IW per capita (adjusted)*
1	Afghanistan	18.8%	19.2%	−0.4%	−0.1%	0.0%	15.3%	14.8%
2	Albania	1.4%	−2.2%	3.6%	−0.1%	0.1%	1.3%	5.0%
3	Algeria	4.4%	6.4%	−2.0%	−0.1%	−1.6%	3.3%	−0.4%
4	Argentina	4.2%	4.6%	−0.3%	−0.2%	0.4%	1.5%	1.4%
5	Armenia	−2.1%	−4.0%	1.9%	−0.1%	0.5%	9.8%	12.3%
6	Australia	5.2%	4.6%	0.6%	0.0%	0.2%	−0.3%	0.5%
7	Austria	7.1%	1.7%	5.3%	−0.4%	0.3%	0.3%	5.5%
8	Bahrain	13.1%	15.0%	−1.6%	−0.4%	0.1%	0.1%	−1.7%
9	Bangladesh	7.7%	7.8%	−0.1%	0.0%	0.0%	−0.9%	−0.9%
10	Barbados	3.9%	1.3%	2.6%	−0.3%	0.8%	−0.6%	2.4%
11	Belgium	7.4%	1.3%	6.0%	−0.4%	0.7%	−0.5%	5.7%
12	Belize	1.8%	10.9%	−8.2%	−0.1%	0.7%	3.1%	−4.5%
13	Benin	13.2%	13.1%	0.1%	0.0%	0.0%	1.7%	1.8%
14	Bolivia (Plurinational State of)	0.7%	7.4%	−6.2%	0.0%	0.1%	0.9%	−5.2%
15	Botswana	6.7%	7.8%	−1.1%	0.0%	0.0%	−2.2%	−3.3%
16	Brazil	1.9%	5.8%	−3.7%	−0.1%	0.1%	1.5%	−2.2%
17	Bulgaria	−3.4%	−2.9%	−0.5%	0.0%	0.1%	0.9%	0.5%
18	Burundi	9.6%	9.0%	0.5%	0.0%	0.0%	−0.1%	0.4%
19	Cambodia	0.5%	10.3%	−8.9%	0.0%	0.1%	0.7%	−8.1%
20	Cameroon	9.3%	10.7%	−1.3%	0.0%	0.0%	1.1%	−0.2%
21	Canada	3.7%	3.8%	−0.1%	0.0%	−2.0%	−0.3%	−2.4%
22	Central African Republic	6.0%	8.4%	−2.2%	0.0%	0.0%	−0.5%	−2.7%

(*Continued*)

Table A3.47 (Continued)

	Country/year	*Average growth rate in percentage from 2000–2005*						
		Growth IW	*Growth population*	*Growth IW per capita (unadjusted)*	*Growth of carbon damages*	*Growth of oil capital gains*	*Growth of TFP*	*Growth IW per capita (adjusted)*
23	Chile	7.4%	5.2%	2.1%	−0.2%	0.6%	−0.3%	2.1%
24	China	7.6%	3.5%	3.9%	0.0%	0.1%	0.1%	4.2%
25	Colombia	3.8%	6.0%	−2.1%	−0.1%	−0.1%	2.0%	−0.3%
26	Congo	8.2%	10.1%	−1.7%	0.0%	−0.3%	2.5%	0.5%
27	Costa Rica	7.1%	8.2%	−1.0%	−0.2%	0.7%	0.0%	−0.6%
28	Côte d'Ivoire	9.3%	10.5%	−1.0%	0.0%	0.0%	2.7%	1.6%
29	Croatia	3.3%	−1.8%	5.2%	−0.1%	0.4%	0.4%	5.9%
30	Cuba	2.8%	1.6%	1.2%	−0.1%	0.8%	5.6%	7.5%
31	Cyprus	11.8%	7.7%	3.7%	−0.4%	1.2%	1.0%	5.6%
32	Czech Republic	4.4%	−0.3%	4.7%	−0.1%	0.3%	1.6%	6.5%
33	Democratic Republic of the Congo	−0.6%	12.5%	−11.7%	0.0%	0.0%	5.0%	−6.7%
34	Denmark	6.3%	1.3%	4.9%	−0.4%	0.1%	−1.4%	3.2%
35	Dominican Republic	11.3%	6.5%	4.5%	−0.2%	0.9%	−1.0%	4.2%
36	Ecuador	1.9%	7.7%	−5.3%	−0.1%	−2.2%	2.8%	−4.8%
37	Egypt	8.0%	7.4%	0.6%	0.0%	0.0%	0.3%	0.8%
38	El Salvador	7.3%	3.2%	4.0%	−0.1%	0.5%	−0.7%	3.6%
39	Estonia	2.1%	−3.6%	5.9%	0.0%	0.3%	1.7%	7.8%
40	Fiji	4.1%	3.1%	1.0%	−0.2%	0.9%	0.0%	1.8%
41	Finland	5.0%	1.3%	3.7%	−0.3%	0.3%	0.3%	4.0%
42	France	7.5%	1.9%	5.5%	−0.5%	0.4%	0.0%	5.4%
43	Gabon	−0.1%	9.7%	−8.9%	0.0%	−0.3%	−2.6%	−11.8%
44	Gambia	9.1%	12.0%	−2.5%	−0.1%	0.3%	−5.1%	−7.4%
45	Germany	4.7%	0.9%	3.7%	−0.3%	0.3%	−0.8%	2.8%

46	Ghana	8.0%	10.0%	−1.8%	0.0%	0.1%	2.5%	0.7%
47	Greece	5.8%	1.9%	3.9%	−0.3%	0.5%	1.0%	5.1%
48	Guatemala	8.2%	9.5%	−1.2%	0.0%	0.1%	0.3%	−0.9%
49	Guyana	0.1%	0.8%	−0.7%	0.0%	0.1%	0.2%	−0.4%
50	Haiti	8.4%	6.9%	1.5%	0.0%	0.0%	−4.3%	−2.8%
51	Honduras	−0.6%	8.8%	−8.7%	−0.1%	0.5%	2.0%	−6.3%
52	Hungary	3.9%	−0.7%	4.7%	−0.1%	0.3%	1.4%	6.3%
53	Iceland	2.6%	3.9%	−1.2%	−0.2%	0.2%	1.6%	0.4%
54	India	6.2%	7.1%	−0.8%	0.0%	0.0%	1.7%	0.9%
55	Indonesia	4.8%	5.7%	−0.9%	−0.1%	0.2%	1.0%	0.2%
56	Iran (Islamic Republic of)	1.4%	5.7%	−4.0%	0.0%	−3.7%	2.4%	−5.4%
57	Iraq	2.6%	11.5%	−8.0%	0.0%	−7.4%	1.2%	−14.3%
58	Ireland	13.1%	4.3%	8.4%	−0.6%	0.6%	1.5%	9.9%
59	Israel	14.7%	10.4%	3.9%	0.1%	1.0%	−0.6%	4.3%
60	Italy	6.5%	0.5%	5.9%	−0.4%	0.4%	−0.4%	5.5%
61	Jamaica	5.3%	2.6%	2.6%	−0.1%	1.2%	−0.4%	3.3%
62	Japan	6.8%	0.9%	5.9%	−0.1%	0.4%	0.2%	6.4%
63	Jordan	16.4%	12.3%	3.7%	−0.2%	2.0%	3.5%	9.0%
64	Kazakhstan	0.8%	−1.9%	2.7%	0.0%	−2.0%	10.1%	10.8%
65	Kenya	10.7%	10.8%	−0.1%	0.0%	0.0%	1.0%	0.9%
66	Kuwait	−0.6%	2.4%	−2.9%	0.0%	−6.8%	4.6%	−5.2%
67	Kyrgyzstan	6.1%	4.1%	1.9%	0.0%	0.1%	3.6%	5.6%
68	Lao People's Democratic Republic	3.9%	7.8%	−3.6%	0.0%	0.0%	−1.2%	−4.8%
69	Latvia	1.4%	−4.2%	5.9%	0.0%	0.3%	2.9%	9.1%
70	Lesotho	−0.4%	4.8%	−5.0%	0.0%	0.0%	1.6%	−3.3%
71	Liberia	9.7%	11.7%	−1.7%	0.0%	0.0%	6.4%	4.7%
72	Lithuania	1.8%	−2.6%	4.6%	0.0%	0.4%	5.0%	9.9%

(*Continued*)

Table A3.47 (Continued)

	Country/year	*Average growth rate in percentage from 2000–2005*						
		Growth IW	*Growth population*	*Growth IW per capita (unadjusted)*	*Growth of carbon damages*	*Growth of oil capital gains*	*Growth of TFP*	*Growth IW per capita (adjusted)*
73	Luxembourg	13.2%	5.1%	7.7%	−0.7%	1.0%	−0.4%	7.7%
74	Malawi	7.4%	7.9%	−0.4%	0.0%	0.0%	2.9%	2.5%
75	Malaysia	7.1%	9.1%	−1.9%	−0.2%	−0.1%	1.5%	−0.7%
76	Maldives	11.9%	10.2%	1.6%	−0.2%	1.0%	−1.6%	0.8%
77	Mali	11.0%	11.0%	0.0%	0.0%	0.0%	3.7%	3.7%
78	Malta	12.7%	3.3%	9.0%	−0.5%	1.5%	−2.8%	7.3%
79	Mauritania	10.3%	11.7%	−1.3%	0.0%	0.0%	0.4%	−0.9%
80	Mauritius	10.6%	3.8%	6.5%	−0.2%	1.2%	−1.3%	6.2%
81	Mexico	8.7%	6.4%	2.2%	−0.2%	0.6%	−1.3%	1.3%
82	Mongolia	1.1%	3.7%	−2.5%	0.0%	0.1%	4.4%	1.9%
83	Morocco	6.3%	5.1%	1.1%	0.0%	0.1%	0.7%	2.0%
84	Mozambique	11.7%	12.1%	−0.4%	0.0%	0.0%	2.1%	1.8%
85	Myanmar	5.4%	4.4%	0.9%	0.0%	0.0%	1.9%	2.8%
86	Namibia	7.7%	9.4%	−1.6%	−0.1%	0.2%	0.4%	−1.0%
87	Nepal	8.2%	8.0%	0.2%	0.0%	0.0%	0.3%	0.5%
88	Netherlands	7.5%	2.2%	5.2%	−0.4%	0.6%	−0.9%	4.3%
89	New Zealand	1.3%	5.6%	−4.0%	0.0%	0.1%	1.4%	−2.5%
90	Nicaragua	6.7%	6.7%	−0.1%	−0.1%	0.2%	1.6%	1.7%
91	Niger	13.7%	14.3%	−0.5%	0.0%	0.0%	3.5%	3.0%
92	Nigeria	9.8%	9.9%	−0.1%	0.0%	−0.2%	10.9%	10.6%
93	Norway	1.5%	2.2%	−0.7%	−0.3%	−1.0%	0.4%	−1.6%
94	Pakistan	2.2%	9.3%	−6.5%	−0.1%	0.2%	2.9%	−3.4%

95	Panama	6.6%	7.7%	−1.0%	−0.2%	1.5%	1.7%	2.0%
96	Papua New Guinea	9.8%	10.0%	−0.2%	0.0%	0.0%	−1.4%	−1.6%
97	Paraguay	3.1%	8.3%	−4.8%	−0.1%	0.3%	4.7%	0.1%
98	Peru	1.2%	6.1%	−4.6%	−0.1%	0.1%	3.0%	−1.6%
99	Philippines	11.0%	8.6%	2.2%	−0.1%	0.4%	1.7%	4.2%
100	Poland	3.7%	0.0%	3.7%	−0.1%	0.3%	−0.1%	3.8%
101	Portugal	10.4%	1.3%	9.0%	−0.5%	0.8%	−1.1%	8.2%
102	Qatar	1.2%	15.1%	−12.1%	−0.1%	−7.2%	0.3%	−19.1%
103	Republic of Korea	19.4%	2.9%	16.0%	−0.5%	1.5%	2.5%	19.5%
104	Republic of Moldova	0.5%	−0.7%	1.2%	0.0%	0.2%	9.2%	10.6%
105	Romania	0.9%	−2.1%	3.1%	0.0%	0.2%	3.7%	7.0%
106	Russian Federation	1.1%	−0.8%	1.9%	0.0%	−0.4%	6.6%	8.1%
107	Rwanda	9.1%	5.5%	3.4%	0.0%	0.0%	4.1%	7.5%
108	Saudi Arabia	2.3%	10.9%	−7.7%	−0.1%	−6.0%	0.0%	−13.8%
109	Senegal	9.9%	10.7%	−0.7%	0.0%	0.0%	1.4%	0.7%
110	Serbia	0.2%	−0.5%	0.7%	0.0%	0.0%	3.9%	4.6%
111	Sierra Leone	3.6%	6.6%	−2.8%	0.0%	0.0%	13.1%	10.2%
112	Singapore	22.1%	8.8%	12.3%	0.1%	5.4%	5.1%	22.9%
113	Slovakia	4.3%	0.3%	4.0%	−0.1%	0.3%	2.9%	7.1%
114	Slovenia	6.5%	0.0%	6.4%	−0.1%	0.5%	0.1%	6.9%
115	South Africa	5.3%	7.6%	−2.1%	−0.1%	0.2%	1.8%	−0.3%
116	Spain	11.3%	3.0%	8.1%	−0.5%	0.6%	0.4%	8.6%
117	Sri Lanka	6.0%	3.2%	2.7%	−0.1%	0.3%	0.6%	3.5%
118	Sudan (former)	12.4%	12.4%	−0.1%	0.0%	−0.1%	−5.4%	−5.6%
119	Swaziland	11.2%	6.4%	4.5%	−0.3%	0.2%	1.6%	6.1%
120	Sweden	5.8%	1.3%	4.4%	−0.4%	0.3%	0.5%	4.8%

(*Continued*)

Table A3.47 (Continued)

	Country/year	*Average growth rate in percentage from 2000–2005*						
		Growth IW	*Growth population*	*Growth IW per capita (unadjusted)*	*Growth of carbon damages*	*Growth of oil capital gains*	*Growth of TFP*	*Growth IW per capita (adjusted)*
121	Switzerland	9.8%	2.6%	7.1%	−0.4%	0.2%	0.5%	7.4%
122	Syrian Arab Republic	9.0%	9.9%	−0.8%	−0.1%	1.0%	1.0%	1.2%
123	Tajikistan	8.0%	6.5%	1.4%	0.0%	0.3%	11.8%	13.5%
124	Thailand	9.1%	3.9%	5.1%	−0.1%	0.7%	3.4%	9.0%
125	Togo	10.5%	10.2%	0.3%	0.0%	0.1%	1.1%	1.4%
126	Trinidad and Tobago	−1.0%	1.5%	−2.5%	−0.1%	−0.7%	6.4%	3.2%
127	Tunisia	9.5%	5.3%	4.0%	−0.1%	0.3%	1.4%	5.4%
128	Turkey	9.6%	5.9%	3.5%	−0.3%	0.5%	1.1%	4.9%
129	Uganda	13.8%	12.7%	1.0%	0.0%	0.0%	2.4%	3.4%
130	Ukraine	−3.0%	−2.4%	−0.6%	0.0%	0.0%	8.7%	8.0%
131	United Arab Emirates	10.5%	25.4%	−11.9%	−0.1%	−5.0%	2.4%	−14.6%
132	United Kingdom	7.6%	1.3%	6.1%	−0.5%	0.2%	−0.1%	5.7%
133	United Republic of Tanzania	11.2%	11.3%	−0.1%	0.0%	0.0%	1.9%	1.8%
134	United States of America	8.7%	4.3%	4.2%	−0.1%	0.5%	−1.1%	3.5%
135	Uruguay	3.5%	1.7%	1.7%	−0.1%	0.3%	−0.5%	1.5%
136	Venezuela (Bolivarian Republic of)	−0.1%	7.7%	−7.3%	0.0%	−7.6%	2.8%	−12.1%
137	Viet Nam	7.3%	5.7%	1.6%	−0.1%	−0.3%	−2.6%	−1.4%
138	Yemen	13.7%	14.4%	−0.6%	0.0%	−0.1%	2.1%	1.4%
139	Zambia	10.5%	10.3%	0.2%	0.0%	0.0%	3.2%	3.4%
140	Zimbabwe	−0.2%	5.5%	−5.4%	0.0%	0.0%	−5.1%	−10.4%

Table A3.48 IWI adjusted (Average growth rate in percentage from 2005–2010)

	Country/year	*Average growth rate in percentage from 2005–2010*						
		Growth IW	*Growth population*	*Growth IW per capita (unadjusted)*	*Growth of carbon damages*	*Growth of oil capital gains*	*Growth of TFP*	*Growth IW per capita (adjusted)*
1	Afghanistan	24.3%	23.4%	0.7%	−0.2%	0.1%	3.6%	4.2%
2	Albania	3.3%	−3.0%	6.4%	−0.3%	0.0%	2.1%	8.2%
3	Algeria	6.8%	8.6%	−1.7%	−0.3%	−1.8%	1.3%	−2.5%
4	Argentina	6.5%	5.9%	0.6%	−0.5%	0.3%	2.2%	2.6%
5	Armenia	−0.1%	−4.4%	4.5%	−0.2%	0.5%	2.4%	7.1%
6	Australia	7.8%	6.6%	1.2%	0.1%	0.1%	0.3%	1.8%
7	Austria	8.9%	2.2%	6.6%	−1.2%	0.2%	0.7%	6.4%
8	Bahrain	25.1%	26.3%	−0.9%	−1.3%	0.3%	0.7%	−1.3%
9	Bangladesh	9.7%	9.4%	0.3%	0.0%	0.0%	−0.4%	−0.1%
10	Barbados	5.1%	1.8%	3.3%	−1.0%	0.5%	0.1%	3.0%
11	Belgium	10.2%	2.3%	7.8%	−1.3%	0.5%	−0.3%	6.7%
12	Belize	2.4%	14.4%	−10.5%	−0.2%	0.4%	2.7%	−7.6%
13	Benin	17.8%	17.4%	0.3%	0.0%	0.0%	2.7%	3.0%
14	Bolivia (Plurinational State of)	1.0%	9.7%	−7.9%	−0.1%	0.1%	0.4%	−7.5%
15	Botswana	10.9%	10.4%	0.5%	−0.2%	0.0%	−1.5%	−1.1%
16	Brazil	2.9%	7.2%	−4.0%	−0.4%	0.0%	1.1%	−3.3%
17	Bulgaria	−3.6%	−4.0%	0.5%	0.0%	0.1%	−1.1%	−0.6%
18	Burundi	14.5%	13.9%	0.5%	0.0%	0.0%	−0.4%	0.0%
19	Cambodia	1.2%	12.4%	−10.0%	−0.1%	0.1%	1.8%	−8.1%
20	Cameroon	13.2%	14.3%	−0.9%	−0.1%	0.0%	0.9%	−0.1%
21	Canada	5.4%	5.2%	0.2%	0.1%	−2.7%	0.2%	−2.2%
22	Central African Republic	8.7%	10.9%	−2.0%	0.0%	0.0%	0.7%	−1.3%

(*Continued*)

Table A3.48 (Continued)

	Country/year	*Average growth rate in percentage from 2005–2010*						
		Growth IW	*Growth population*	*Growth IW per capita (unadjusted)*	*Growth of carbon damages*	*Growth of oil capital gains*	*Growth of TFP*	*Growth IW per capita (adjusted)*
23	Chile	10.7%	6.7%	3.8%	−0.6%	0.5%	0.0%	3.7%
24	China	11.4%	4.2%	6.9%	0.0%	0.1%	1.4%	8.4%
25	Colombia	5.7%	7.6%	−1.7%	−0.3%	−0.2%	0.8%	−1.5%
26	Congo	13.5%	14.2%	−0.7%	−0.1%	−0.3%	0.2%	−0.9%
27	Costa Rica	10.8%	10.1%	0.6%	−0.7%	0.5%	1.0%	1.5%
28	Côte d'Ivoire	12.4%	13.4%	−0.9%	−0.1%	0.0%	2.0%	1.1%
29	Croatia	5.7%	−2.0%	7.8%	−0.2%	0.3%	−1.5%	6.5%
30	Cuba	3.7%	1.7%	2.0%	−0.4%	0.4%	2.3%	4.3%
31	Cyprus	16.1%	9.5%	6.0%	−1.2%	1.0%	1.4%	7.1%
32	Czech Republic	7.0%	0.3%	6.6%	−0.2%	0.3%	0.0%	6.7%
33	Democratic Republic of the Congo	−0.6%	17.2%	−15.2%	−0.1%	0.0%	−3.8%	−19.0%
34	Denmark	8.7%	1.9%	6.6%	−1.3%	0.0%	−0.2%	5.1%
35	Dominican Republic	15.6%	8.3%	6.7%	−0.6%	0.7%	0.3%	7.1%
36	Ecuador	3.2%	10.0%	−6.1%	−0.3%	−2.7%	1.3%	−7.8%
37	Egypt	11.6%	9.8%	1.6%	−0.1%	−0.1%	0.9%	2.3%
38	El Salvador	9.2%	3.5%	5.4%	−0.4%	0.4%	0.6%	6.0%
39	Estonia	4.5%	−4.0%	8.9%	−0.1%	0.3%	0.0%	8.9%
40	Fiji	5.9%	4.2%	1.6%	−0.5%	0.8%	0.0%	2.0%
41	Finland	7.9%	1.8%	5.9%	−1.0%	0.2%	0.7%	5.9%
42	France	10.1%	2.7%	7.3%	−1.4%	0.3%	0.5%	6.6%
43	Gabon	−0.1%	12.8%	−11.4%	0.0%	−0.3%	−2.6%	−14.4%
44	Gambia	13.8%	16.6%	−2.4%	−0.4%	0.3%	−3.5%	−6.0%

45	Germany	5.7%	0.7%	5.0%	−1.0%	0.2%	−0.2%	4.0%
46	Ghana	11.4%	13.5%	−1.9%	−0.1%	0.0%	2.6%	0.7%
47	Greece	8.2%	2.2%	5.9%	−1.0%	0.4%	0.9%	6.2%
48	Guatemala	11.1%	12.6%	−1.3%	−0.1%	0.1%	1.1%	−0.2%
49	Guyana	0.2%	1.1%	−0.9%	0.0%	0.1%	2.8%	1.9%
50	Haiti	4.9%	8.9%	−3.7%	0.0%	0.0%	−3.0%	−6.8%
51	Honduras	0.2%	11.2%	−9.9%	−0.4%	0.4%	0.8%	−9.0%
52	Hungary	5.4%	−0.9%	6.3%	−0.2%	0.2%	−0.1%	6.2%
53	Iceland	4.2%	5.7%	−1.4%	−0.6%	0.1%	1.1%	−0.7%
54	India	8.3%	9.0%	−0.7%	0.0%	0.0%	1.3%	0.6%
55	Indonesia	6.7%	7.4%	−0.7%	−0.3%	0.1%	−1.3%	−2.2%
56	Iran (Islamic Republic of)	2.4%	7.2%	−4.5%	−0.1%	−4.7%	2.0%	−7.3%
57	Iraq	3.9%	15.3%	−9.8%	−0.1%	−9.5%	8.6%	−10.8%
58	Ireland	18.8%	6.7%	11.3%	−1.7%	0.4%	3.4%	13.4%
59	Israel	19.4%	13.1%	5.6%	0.2%	0.7%	0.7%	7.2%
60	Italy	8.6%	1.1%	7.4%	−1.3%	0.2%	0.3%	6.6%
61	Jamaica	6.2%	3.0%	3.1%	−0.4%	0.9%	−0.5%	3.0%
62	Japan	7.8%	0.9%	6.8%	−0.2%	0.2%	−0.4%	6.5%
63	Jordan	23.8%	18.0%	4.9%	−0.7%	1.4%	2.1%	7.7%
64	Kazakhstan	2.1%	0.0%	2.1%	−0.1%	−2.5%	1.6%	1.1%
65	Kenya	16.1%	14.5%	1.4%	−0.1%	0.0%	0.2%	1.5%
66	Kuwait	0.7%	10.4%	−8.8%	−0.1%	−8.4%	6.1%	−11.3%
67	Kyrgyzstan	8.6%	5.5%	2.9%	−0.1%	0.2%	−1.1%	1.9%
68	Lao People's Democratic Republic	5.5%	10.2%	−4.2%	−0.1%	0.0%	−2.1%	−6.4%
69	Latvia	3.5%	−5.8%	9.9%	−0.1%	0.3%	−1.5%	8.6%
70	Lesotho	1.1%	5.9%	−4.5%	0.0%	0.0%	−0.7%	−5.3%
71	Liberia	16.4%	17.1%	−0.6%	0.0%	0.0%	8.1%	7.5%
72	Lithuania	2.9%	−4.3%	7.5%	−0.1%	0.3%	−0.1%	7.6%

(*Continued*)

Table A3.48 (Continued)

	Country/year	*Average growth rate in percentage from 2005–2010*						
		Growth IW	*Growth population*	*Growth IW per capita (unadjusted)*	*Growth of carbon damages*	*Growth of oil capital gains*	*Growth of TFP*	*Growth IW per capita (adjusted)*
73	Luxembourg	18.1%	7.3%	10.0%	−2.1%	0.8%	0.9%	9.6%
74	Malawi	13.4%	11.9%	1.4%	0.0%	0.0%	2.9%	4.3%
75	Malaysia	9.3%	11.5%	−2.0%	−0.7%	−0.3%	0.7%	−2.3%
76	Maldives	17.0%	13.9%	2.7%	−0.7%	0.8%	−0.3%	2.5%
77	Mali	15.5%	15.6%	−0.1%	0.0%	0.0%	2.2%	2.1%
78	Malta	16.6%	4.0%	12.1%	−1.5%	1.5%	−0.9%	11.3%
79	Mauritania	13.7%	15.4%	−1.4%	0.0%	0.0%	3.1%	1.6%
80	Mauritius	14.1%	4.2%	9.5%	−0.7%	0.9%	−0.9%	8.7%
81	Mexico	12.1%	8.5%	3.4%	−0.7%	0.4%	−0.2%	2.8%
82	Mongolia	1.7%	5.6%	−3.6%	0.0%	0.1%	0.3%	−3.4%
83	Morocco	8.3%	6.5%	1.7%	−0.1%	0.1%	0.0%	1.6%
84	Mozambique	15.4%	16.1%	−0.6%	0.0%	0.0%	3.0%	2.3%
85	Myanmar	6.7%	5.3%	1.3%	0.0%	0.0%	2.1%	3.4%
86	Namibia	11.4%	11.6%	−0.1%	−0.2%	0.2%	1.8%	1.6%
87	Nepal	9.9%	9.4%	0.4%	0.0%	0.0%	1.3%	1.7%
88	Netherlands	9.8%	2.7%	6.9%	−1.4%	0.4%	0.5%	6.5%
89	New Zealand	6.3%	6.9%	−0.6%	0.0%	0.1%	1.1%	0.6%
90	Nicaragua	8.4%	8.5%	−0.1%	−0.2%	0.2%	2.2%	2.1%
91	Niger	19.4%	19.8%	−0.3%	0.0%	0.0%	3.4%	3.1%
92	Nigeria	13.7%	13.6%	0.1%	−0.1%	−0.3%	5.4%	5.1%
93	Norway	3.3%	3.6%	−0.3%	−1.0%	−0.9%	1.6%	−0.6%
94	Pakistan	3.5%	12.1%	−7.7%	−0.2%	0.1%	1.3%	−6.5%

95	Panama	10.8%	10.0%	0.7%	−0.6%	1.1%	1.3%	2.4%
96	Papua New Guinea	12.6%	13.3%	−0.6%	0.0%	0.0%	1.0%	0.4%
97	Paraguay	4.3%	10.2%	−5.4%	−0.2%	0.2%	0.8%	−4.5%
98	Peru	2.2%	7.7%	−5.1%	−0.2%	0.0%	2.5%	−2.8%
99	Philippines	14.2%	10.7%	3.1%	−0.3%	0.2%	0.4%	3.4%
100	Poland	5.8%	0.0%	5.8%	−0.2%	0.3%	0.4%	6.3%
101	Portugal	12.8%	1.4%	11.2%	−1.4%	0.5%	0.1%	10.3%
102	Qatar	7.6%	38.7%	−22.4%	−0.4%	−8.5%	3.3%	−28.1%
103	Republic of Korea	24.6%	3.6%	20.2%	−1.6%	1.1%	0.8%	20.5%
104	Republic of Moldova	0.9%	−0.9%	1.8%	0.0%	0.2%	−1.8%	0.1%
105	Romania	2.5%	−3.3%	6.1%	−0.1%	0.1%	0.5%	6.5%
106	Russian Federation	1.2%	−0.9%	2.2%	0.0%	−0.5%	0.3%	2.0%
107	Rwanda	14.1%	9.1%	4.6%	0.0%	0.0%	2.5%	7.1%
108	Saudi Arabia	3.3%	14.5%	−9.8%	−0.2%	−7.4%	−0.2%	−17.5%
109	Senegal	13.9%	14.6%	−0.6%	0.0%	0.0%	0.7%	0.1%
110	Serbia	1.2%	−1.0%	2.2%	0.0%	0.1%	−2.3%	−0.1%
111	Sierra Leone	7.1%	10.1%	−2.7%	0.0%	0.0%	−0.3%	−3.0%
112	Singapore	30.4%	13.6%	14.7%	0.4%	4.8%	5.4%	25.3%
113	Slovakia	6.3%	0.4%	5.9%	−0.2%	0.3%	0.9%	6.8%
114	Slovenia	9.7%	0.6%	9.0%	−0.3%	0.4%	0.0%	9.1%
115	South Africa	8.0%	9.6%	−1.4%	−0.2%	0.2%	1.1%	−0.4%
116	Spain	15.6%	4.6%	10.5%	−1.4%	0.4%	0.7%	10.2%
117	Sri Lanka	7.2%	4.2%	2.9%	−0.3%	0.3%	1.6%	4.4%
118	Sudan (former)	13.6%	15.9%	−2.0%	0.0%	−0.1%	−1.7%	−3.8%
119	Swaziland	13.3%	8.4%	4.5%	−1.0%	0.2%	0.3%	4.0%
120	Sweden	8.5%	2.3%	6.0%	−1.1%	0.2%	0.7%	5.8%
121	Switzerland	12.4%	3.9%	8.1%	−1.2%	0.2%	−1.2%	5.9%
122	Syrian Arab Republic	13.0%	13.6%	−0.5%	−0.2%	0.8%	2.3%	2.4%

(*Continued*)

Table A3.48 (Continued)

	Country/year	*Average growth rate in percentage from 2005–2010*						
		Growth IW	*Growth population*	*Growth IW per capita (unadjusted)*	*Growth of carbon damages*	*Growth of oil capital gains*	*Growth of TFP*	*Growth IW per capita (adjusted)*
123	Tajikistan	11.1%	9.4%	1.6%	−0.1%	0.2%	−0.7%	1.0%
124	Thailand	11.3%	4.2%	6.8%	−0.4%	0.6%	−0.2%	6.8%
125	Togo	14.8%	14.0%	0.7%	−0.1%	0.1%	1.9%	2.6%
126	Trinidad and Tobago	−2.3%	2.1%	−4.3%	−0.4%	−0.7%	5.7%	0.2%
127	Tunisia	13.4%	6.6%	6.3%	−0.5%	0.1%	1.8%	7.7%
128	Turkey	13.2%	7.6%	5.3%	−0.8%	0.4%	−0.1%	4.7%
129	Uganda	19.2%	17.5%	1.5%	0.0%	0.0%	3.0%	4.4%
130	Ukraine	−3.2%	−3.0%	−0.2%	0.0%	0.0%	−1.5%	−1.7%
131	United Arab Emirates	16.2%	46.4%	−20.7%	−0.3%	−6.2%	2.9%	−24.2%
132	United Kingdom	10.1%	2.3%	7.6%	−1.7%	0.1%	−0.1%	5.9%
133	United Republic of Tanzania	16.0%	15.7%	0.3%	0.0%	0.0%	0.2%	0.5%
134	United States of America	11.2%	5.5%	5.4%	−0.2%	0.3%	−0.3%	5.2%
135	Uruguay	4.7%	2.1%	2.6%	−0.3%	0.2%	0.1%	2.6%
136	Venezuela (Bolivarian Republic of)	0.2%	9.9%	−8.8%	−0.1%	−9.6%	1.7%	−16.8%
137	Viet Nam	10.4%	7.1%	3.1%	−0.3%	−0.3%	−2.7%	−0.2%
138	Yemen	18.4%	18.5%	−0.1%	0.0%	−0.2%	3.1%	2.8%
139	Zambia	16.0%	14.3%	1.4%	0.0%	0.0%	2.6%	4.1%
140	Zimbabwe	1.9%	7.4%	−5.2%	0.0%	0.0%	−1.8%	−7.0%

Table A3.49 IWI adjusted (Average growth rate in percentage from 2010–2014)

	Country/year	*Average growth rate in percentage from 2010–2014*						
		Growth IW	*Growth population*	*Growth IW per capita (unadjusted)*	*Growth of carbon damages*	*Growth of oil capital gains*	*Growth of TFP*	*Growth IW per capita (adjusted)*
1	Afghanistan	40.7%	37.9%	2.1%	−0.1%	0.1%	5.0%	7.1%
2	Albania	6.1%	−4.2%	10.7%	−0.2%	−0.3%	−0.6%	9.7%
3	Algeria	12.5%	14.5%	−1.7%	−0.1%	−2.1%	−1.4%	−5.3%
4	Argentina	11.5%	9.5%	1.8%	−0.2%	0.1%	−0.7%	1.0%
5	Armenia	1.1%	−5.3%	6.9%	−0.1%	0.0%	2.2%	9.0%
6	Australia	13.7%	11.2%	2.2%	0.0%	0.0%	−0.8%	1.4%
7	Austria	14.1%	3.6%	10.1%	−0.5%	0.1%	−0.5%	9.1%
8	Bahrain	39.7%	40.0%	−0.3%	−0.6%	−0.3%	0.9%	−0.2%
9	Bangladesh	15.1%	14.5%	0.5%	0.0%	0.0%	0.3%	0.8%
10	Barbados	8.3%	2.9%	5.3%	−0.4%	0.2%	0.1%	5.1%
11	Belgium	16.6%	4.1%	12.0%	−0.6%	0.1%	−1.2%	10.4%
12	Belize	3.8%	23.3%	−15.8%	−0.1%	0.1%	0.8%	−15.0%
13	Benin	29.3%	28.4%	0.6%	0.0%	0.0%	2.2%	2.9%
14	Bolivia (Plurinational State of)	1.8%	15.5%	−11.8%	0.0%	0.0%	0.3%	−11.5%
15	Botswana	18.4%	17.2%	1.1%	−0.1%	0.0%	−0.7%	0.3%
16	Brazil	5.7%	11.1%	−4.9%	−0.2%	−0.2%	−1.9%	−7.1%
17	Bulgaria	−5.4%	−6.1%	0.8%	0.0%	0.0%	−1.9%	−1.2%
18	Burundi	25.5%	24.4%	0.9%	0.0%	0.0%	3.3%	4.2%
19	Cambodia	2.6%	19.4%	−14.1%	0.0%	0.0%	−0.8%	−14.9%
20	Cameroon	20.8%	23.6%	−2.2%	0.0%	0.0%	3.2%	0.9%
21	Canada	6.5%	8.5%	−1.9%	0.0%	−3.9%	−0.1%	−5.9%

(*Continued*)

Table A3.49 (Continued)

	Country/year	*Average growth rate in percentage from 2010–2014*						
		Growth IW	*Growth population*	*Growth IW per capita (unadjusted)*	*Growth of carbon damages*	*Growth of oil capital gains*	*Growth of TFP*	*Growth IW per capita (adjusted)*
22	Central African Republic	14.5%	17.8%	−2.8%	0.0%	0.0%	−7.5%	−10.3%
23	Chile	19.1%	10.6%	7.7%	−0.3%	0.2%	−1.5%	6.1%
24	China	20.8%	6.3%	13.6%	0.0%	0.0%	−0.7%	12.9%
25	Colombia	1.5%	11.7%	−9.2%	−0.1%	−0.3%	0.7%	−8.9%
26	Congo	22.1%	23.6%	−1.2%	0.0%	−0.4%	−4.1%	−5.8%
27	Costa Rica	21.9%	15.4%	5.7%	−0.3%	0.2%	−1.3%	4.3%
28	Côte d'Ivoire	20.0%	22.1%	−1.7%	0.0%	0.0%	9.3%	7.6%
29	Croatia	8.3%	−3.9%	12.7%	−0.1%	0.0%	−2.3%	10.4%
30	Cuba	6.0%	2.5%	3.5%	−0.2%	0.1%	1.3%	4.7%
31	Cyprus	23.8%	14.6%	8.0%	−0.5%	0.3%	−3.1%	4.7%
32	Czech Republic	11.2%	0.6%	10.5%	−0.1%	0.1%	−1.3%	9.2%
33	Democratic Republic of the Congo	−0.7%	28.9%	−22.9%	0.0%	0.0%	3.8%	−19.2%
34	Denmark	13.5%	3.2%	10.0%	−0.6%	−0.1%	−1.0%	8.2%
35	Dominican Republic	25.3%	13.1%	10.8%	−0.3%	0.2%	0.9%	11.6%
36	Ecuador	7.3%	15.9%	−7.4%	−0.1%	−3.8%	0.2%	−11.1%
37	Egypt	20.3%	16.7%	3.1%	−0.1%	−0.2%	−0.7%	2.1%
38	El Salvador	14.4%	5.2%	8.8%	−0.2%	0.1%	0.0%	8.8%
39	Estonia	7.9%	−5.7%	14.5%	−0.1%	0.1%	1.5%	16.0%
40	Fiji	10.9%	6.8%	3.9%	−0.2%	0.2%	1.3%	5.1%
41	Finland	11.9%	3.1%	8.5%	−0.4%	0.1%	−1.4%	6.8%
42	France	16.1%	4.4%	11.2%	−0.6%	0.1%	−0.9%	9.7%

43	Gabon	0.1%	21.0%	−17.3%	0.0%	−0.4%	3.1%	−14.7%
44	Gambia	23.8%	28.1%	−3.3%	−0.2%	0.1%	−1.6%	−5.0%
45	Germany	8.9%	0.6%	8.2%	−0.5%	0.1%	0.2%	7.9%
46	Ghana	19.8%	22.3%	−2.1%	0.0%	0.0%	0.2%	−1.8%
47	Greece	10.3%	2.2%	7.9%	−0.4%	0.1%	−4.0%	3.6%
48	Guatemala	18.3%	20.5%	−1.8%	−0.1%	0.0%	1.4%	−0.5%
49	Guyana	5.2%	2.0%	3.1%	0.0%	0.0%	2.6%	5.7%
50	Haiti	15.9%	14.2%	1.5%	0.0%	0.0%	1.7%	3.1%
51	Honduras	0.7%	17.5%	−14.3%	−0.2%	0.1%	0.5%	−13.9%
52	Hungary	8.2%	−1.7%	10.1%	−0.1%	0.1%	0.2%	10.3%
53	Iceland	5.9%	8.7%	−2.5%	−0.3%	0.0%	1.9%	−0.9%
54	India	13.3%	14.2%	−0.8%	0.0%	0.0%	0.4%	−0.4%
55	Indonesia	11.4%	11.9%	−0.5%	−0.1%	−0.1%	0.2%	−0.5%
56	Iran (Islamic Republic of)	3.6%	11.6%	−7.2%	−0.1%	−6.6%	−2.7%	−16.5%
57	Iraq	7.4%	26.4%	−15.0%	0.0%	−13.1%	−2.4%	−30.6%
58	Ireland	28.7%	9.5%	17.5%	−0.8%	0.1%	0.3%	17.1%
59	Israel	32.3%	20.8%	9.5%	0.1%	0.2%	−0.4%	9.5%
60	Italy	12.7%	2.3%	10.1%	−0.6%	0.0%	−1.7%	7.9%
61	Jamaica	9.1%	4.4%	4.5%	−0.2%	0.2%	0.0%	4.5%
62	Japan	11.2%	1.0%	10.1%	−0.1%	0.1%	0.2%	10.3%
63	Jordan	40.7%	30.2%	8.0%	−0.3%	0.6%	−0.7%	7.6%
64	Kazakhstan	4.2%	1.9%	2.3%	−0.1%	−3.3%	1.6%	0.6%
65	Kenya	27.1%	24.1%	2.3%	0.0%	0.0%	−0.5%	1.8%
66	Kuwait	2.3%	22.2%	−16.2%	−0.1%	−11.4%	−2.1%	−29.7%
67	Kyrgyzstan	14.8%	9.9%	4.4%	0.0%	0.1%	0.8%	5.3%
68	Lao People's Democratic Republic	10.8%	16.3%	−4.8%	0.0%	0.0%	−1.5%	−6.2%
69	Latvia	5.4%	−9.2%	16.1%	−0.1%	0.1%	1.8%	17.9%

(*Continued*)

Table A3.49 (Continued)

	Country/year	*Average growth rate in percentage from 2010–2014*						
		Growth IW	*Growth population*	*Growth IW per capita (unadjusted)*	*Growth of carbon damages*	*Growth of oil capital gains*	*Growth of TFP*	*Growth IW per capita (adjusted)*
70	Lesotho	2.2%	9.7%	−6.9%	0.0%	0.0%	0.6%	−6.3%
71	Liberia	26.0%	27.9%	−1.5%	0.0%	0.0%	2.4%	0.9%
72	Lithuania	4.4%	−7.4%	12.8%	−0.1%	0.1%	2.4%	15.2%
73	Luxembourg	30.5%	13.4%	15.2%	−0.9%	0.2%	−1.1%	13.4%
74	Malawi	24.9%	21.1%	3.2%	0.0%	0.0%	2.7%	5.9%
75	Malaysia	16.7%	18.0%	−1.0%	−0.3%	−0.8%	0.8%	−1.4%
76	Maldives	28.6%	22.5%	5.0%	−0.3%	0.3%	2.2%	7.1%
77	Mali	26.1%	26.3%	−0.1%	0.0%	0.0%	3.1%	3.0%
78	Malta	26.4%	6.5%	18.7%	−0.7%	0.8%	0.1%	18.9%
79	Mauritania	22.6%	25.2%	−2.0%	0.0%	0.0%	−3.4%	−5.5%
80	Mauritius	22.4%	6.0%	15.5%	−0.3%	0.3%	0.1%	15.5%
81	Mexico	20.2%	13.6%	5.9%	−0.3%	0.0%	−0.1%	5.4%
82	Mongolia	4.4%	10.0%	−5.1%	0.0%	0.0%	4.2%	−0.9%
83	Morocco	13.5%	10.8%	2.4%	0.0%	0.0%	−0.3%	2.2%
84	Mozambique	25.5%	26.7%	−1.0%	0.0%	0.0%	−6.2%	−7.1%
85	Myanmar	10.7%	8.4%	2.1%	0.0%	0.0%	−5.0%	−2.8%
86	Namibia	19.4%	19.3%	0.1%	−0.1%	0.1%	−2.8%	−2.7%
87	Nepal	15.8%	14.6%	1.1%	0.0%	0.0%	1.1%	2.3%
88	Netherlands	14.8%	4.1%	10.3%	−0.6%	0.1%	−1.1%	8.8%
89	New Zealand	7.0%	10.6%	−3.3%	0.0%	0.0%	−0.7%	−4.0%
90	Nicaragua	13.7%	13.2%	0.5%	−0.1%	0.1%	1.3%	1.7%

91	Niger	33.1%	34.2%	−0.8%	0.0%	0.0%	1.5%	0.7%
92	Nigeria	23.0%	22.9%	0.1%	0.0%	−0.3%	2.0%	1.7%
93	Norway	6.6%	6.6%	0.0%	−0.4%	−0.8%	−0.7%	−2.0%
94	Pakistan	6.4%	19.8%	−11.2%	−0.1%	0.0%	2.2%	−9.1%
95	Panama	23.7%	16.1%	6.5%	−0.3%	0.6%	−0.6%	6.2%
96	Papua New Guinea	20.6%	21.5%	−0.8%	0.0%	0.0%	−1.5%	−2.2%
97	Paraguay	6.4%	15.9%	−8.1%	−0.1%	0.1%	1.8%	−6.4%
98	Peru	6.2%	12.4%	−5.5%	−0.1%	0.0%	−1.8%	−7.4%
99	Philippines	22.9%	17.0%	5.1%	−0.2%	0.1%	1.6%	6.6%
100	Poland	10.2%	−0.1%	10.3%	−0.1%	0.1%	−0.6%	9.7%
101	Portugal	17.6%	1.4%	16.0%	−0.7%	0.1%	−1.6%	13.9%
102	Qatar	17.5%	65.8%	−29.1%	−0.2%	−10.8%	−0.3%	−40.4%
103	Republic of Korea	38.8%	5.6%	31.5%	−0.7%	0.4%	1.9%	33.0%
104	Republic of Moldova	−1.0%	−1.3%	0.3%	0.0%	0.1%	16.7%	17.0%
105	Romania	4.6%	−5.0%	10.0%	0.0%	0.0%	0.1%	10.0%
106	Russian Federation	2.0%	−1.0%	3.0%	0.0%	−0.7%	0.3%	2.6%
107	Rwanda	24.1%	16.0%	7.0%	0.0%	0.0%	−1.3%	5.7%
108	Saudi Arabia	6.5%	23.6%	−13.9%	−0.1%	−9.8%	−2.4%	−26.2%
109	Senegal	23.3%	25.0%	−1.4%	0.0%	0.0%	−0.9%	−2.3%
110	Serbia	1.5%	−2.0%	3.6%	0.0%	0.0%	−2.4%	1.3%
111	Sierra Leone	12.5%	17.1%	−4.0%	0.0%	0.0%	3.1%	−0.8%
112	Singapore	51.5%	21.5%	24.7%	0.2%	2.0%	−1.6%	25.2%
113	Slovakia	10.3%	0.7%	9.5%	−0.1%	0.1%	0.2%	9.8%
114	Slovenia	14.0%	1.1%	12.9%	−0.1%	0.1%	−1.0%	11.9%
115	South Africa	13.7%	15.4%	−1.4%	−0.1%	0.1%	−1.5%	−3.0%
116	Spain	22.9%	6.2%	15.7%	−0.7%	0.1%	−2.1%	13.1%
117	Sri Lanka	15.5%	6.7%	8.2%	−0.2%	0.1%	0.2%	8.4%
118	Sudan (former)	21.0%	25.3%	−3.4%	0.0%	−0.1%	−3.2%	−6.7%

(*Continued*)

Table A3.49 (Continued)

	Country/year	*Average growth rate in percentage from 2010–2014*						
		Growth IW	*Growth population*	*Growth IW per capita (unadjusted)*	*Growth of carbon damages*	*Growth of oil capital gains*	*Growth of TFP*	*Growth IW per capita (adjusted)*
119	Swaziland	20.6%	13.7%	6.1%	−0.4%	0.1%	2.5%	8.2%
120	Sweden	13.7%	4.2%	9.0%	−0.5%	0.1%	−0.6%	7.9%
121	Switzerland	19.2%	6.8%	11.6%	−0.6%	0.0%	0.0%	11.0%
122	Syrian Arab Republic	13.1%	14.7%	−1.3%	−0.1%	0.0%	−18.0%	−19.5%
123	Tajikistan	18.8%	16.1%	2.3%	0.0%	0.0%	6.6%	8.8%
124	Thailand	18.0%	6.2%	11.2%	−0.2%	0.2%	0.3%	11.5%
125	Togo	25.6%	23.4%	1.8%	0.0%	0.0%	0.8%	2.5%
126	Trinidad and Tobago	−5.8%	3.5%	−9.0%	−0.2%	−0.9%	3.0%	−7.1%
127	Tunisia	22.1%	10.5%	10.6%	−0.2%	−0.3%	−0.1%	10.0%
128	Turkey	23.2%	12.8%	9.2%	−0.4%	0.1%	0.0%	8.9%
129	Uganda	32.8%	29.5%	2.5%	0.0%	−0.1%	−0.7%	1.7%
130	Ukraine	−4.6%	−4.4%	−0.3%	0.0%	0.0%	0.7%	0.4%
131	United Arab Emirates	26.2%	71.2%	−26.3%	−0.1%	−8.4%	−0.4%	−35.2%
132	United Kingdom	16.1%	4.1%	11.5%	−0.8%	0.0%	0.2%	11.0%
133	United Republic of Tanzania	27.8%	26.7%	0.8%	0.0%	0.0%	−1.9%	−1.0%
134	United States of America	17.4%	8.5%	8.2%	−0.1%	0.0%	0.0%	8.0%
135	Uruguay	8.3%	3.2%	5.0%	−0.1%	0.1%	−0.3%	4.6%
136	Venezuela (Bolivarian Republic of)	0.9%	15.6%	−12.7%	0.0%	−13.3%	−1.3%	−27.4%
137	Viet Nam	17.6%	11.2%	5.8%	−0.1%	−0.7%	−1.4%	3.6%
138	Yemen	30.3%	29.8%	0.3%	0.0%	−0.3%	−5.8%	−5.8%
139	Zambia	27.3%	24.5%	2.2%	0.0%	0.0%	−0.6%	1.6%
140	Zimbabwe	9.9%	13.3%	−2.9%	0.0%	0.0%	6.0%	3.1%

Table A3.50 GDP (GDP billion of constant 2005 US$)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	5.7	4.5	3.5	6.6	10.4	13.6
2	Albania	5.3	4.7	6.1	8.1	10.4	11.2
3	Algeria	66.8	67.6	80.1	103.2	117.0	132.8
4	Argentina	133.5	177.8	201.9	222.9	294.4	332.5
5	Armenia	4.0	2.1	2.7	4.9	5.9	7.1
6	Australia	453.9	532.8	642.9	762.1	870.4	975.0
7	Austria	223.1	249.0	288.9	314.6	335.5	349.9
8	Bahrain	7.8	9.9	12.4	16.0	20.9	24.4
9	Bangladesh	27.9	34.3	44.2	57.6	77.3	98.6
10	Barbados	3.3	3.2	3.7	3.9	4.1	4.1
11	Belgium	283.7	307.0	354.1	387.4	415.0	428.9
12	Belize	0.5	0.6	0.9	1.1	1.3	1.4
13	Benin	2.4	3.1	4.0	4.8	5.8	7.1
14	Bolivia (Plurinational State of)	5.7	6.9	8.2	9.5	12.0	14.9
15	Botswana	5.2	6.5	8.3	9.9	12.4	15.8
16	Brazil	606.1	704.4	778.1	892.1	1,108.5	1,206.1
17	Bulgaria	28.0	24.6	22.5	29.8	34.7	36.3
18	Burundi	1.2	1.1	1.0	1.1	2.1	3.0
19	Cambodia	2.1	2.9	4.0	6.3	8.7	11.5
20	Cameroon	11.7	11.0	13.8	16.6	19.1	23.3
21	Canada	774.6	842.8	1,026.9	1,164.2	1,240.1	1,359.8
22	Central African Republic	1.2	1.3	1.4	1.4	1.7	1.1
23	Chile	53.1	80.5	98.7	123.1	147.9	175.3
24	China	533.7	953.5	1,438.7	2,291.4	3,903.8	5,320.2
25	Colombia	94.5	117.2	122.7	146.6	183.0	222.6
26	Congo	4.3	4.4	5.0	6.1	7.9	9.3
27	Costa Rica	9.8	12.8	16.3	20.0	25.0	29.4
28	Côte d'Ivoire	13.4	14.5	17.1	17.1	19.6	24.6
29	Croatia	42.5	30.8	36.5	45.4	46.5	44.7
30	Cuba	38.5	26.7	33.4	42.6	55.4	61.1
31	Cyprus	10.1	13.0	15.8	18.8	21.3	19.1
32	Czech Republic	106.8	102.7	112.2	136.0	153.3	157.2
33	Democratic Republic of the Congo	17.7	12.1	9.9	12.0	15.7	21.3
34	Denmark	190.0	213.3	247.4	264.6	265.1	270.7
35	Dominican Republic	16.7	21.5	30.0	35.7	48.3	57.3
36	Ecuador	25.9	30.6	32.8	41.5	49.0	60.6
37	Egypt	48.6	61.0	78.7	94.5	127.5	138.5
38	El Salvador	9.7	13.1	15.2	17.1	18.3	19.8
39	Estonia	10.6	7.4	9.9	14.0	13.8	16.3
40	Fiji	2.2	2.5	2.8	3.1	3.2	3.7
41	Finland	143.6	140.4	179.9	204.4	212.9	212.0

(*Continued*)

Table A3.50 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
42	France	1,650.0	1,758.9	2,030.0	2,203.6	2,289.8	2,361.3
43	Gabon	7.9	9.2	9.1	9.6	10.1	12.7
44	Gambia	0.4	0.4	0.5	0.6	0.8	0.8
45	Germany	2,286.9	2,529.4	2,781.3	2,861.3	3,042.4	3,226.7
46	Ghana	8.7	10.7	13.3	17.2	23.2	32.2
47	Greece	160.9	171.2	205.3	247.8	243.7	200.0
48	Guatemala	15.7	19.3	23.4	27.2	32.6	37.7
49	Guyana	0.8	1.1	1.3	1.3	1.6	1.9
50	Haiti	4.3	3.8	4.3	4.2	4.3	5.0
51	Honduras	5.6	6.7	7.8	9.8	11.6	13.3
52	Hungary	88.6	78.6	91.2	112.5	111.4	117.7
53	Iceland	10.5	10.7	13.6	16.7	17.8	19.5
54	India	344.2	442.4	586.3	821.0	1,223.9	1,573.0
55	Indonesia	159.8	233.0	241.6	304.4	402.4	502.2
56	Iran (Islamic Republic of)	122.6	141.6	168.2	219.8	279.1	276.7
57	Iraq	24.5	12.1	35.4	36.3	48.2	60.7
58	Ireland	81.0	101.2	163.5	211.4	219.8	241.0
59	Israel	71.2	98.7	128.4	142.8	176.6	202.1
60	Italy	1,501.7	1,602.2	1,768.8	1,853.5	1,825.0	1,745.0
61	Jamaica	9.0	10.4	10.4	11.2	11.0	11.2
62	Japan	3,851.3	4,132.2	4,308.1	4,571.9	4,651.1	4,780.9
63	Jordan	5.8	7.9	9.2	12.6	17.0	19.0
64	Kazakhstan	50.2	30.8	34.9	57.1	77.3	96.2
65	Kenya	14.9	16.1	17.9	21.5	27.4	33.9
66	Kuwait	30.6	48.6	54.7	80.8	85.6	99.6
67	Kyrgyzstan	3.1	1.6	2.0	2.5	3.1	3.7
68	Lao People's Democratic Republic	1.1	1.5	2.0	2.7	4.0	5.4
69	Latvia	17.9	8.9	11.4	16.9	16.5	19.2
70	Lesotho	0.8	1.0	1.2	1.4	1.8	2.1
71	Liberia	0.4	0.1	0.5	0.6	1.1	1.5
72	Lithuania	24.9	14.4	18.1	26.1	27.7	32.6
73	Luxembourg	19.6	23.7	32.0	37.0	41.8	46.1
74	Malawi	2.5	2.6	3.1	3.7	5.2	5.9
75	Malaysia	57.3	90.1	113.9	143.5	178.7	220.5
76	Maldives	0.4	0.6	0.9	1.1	1.7	2.3
77	Mali	2.7	3.4	4.0	5.5	7.0	7.8
78	Malta	3.4	4.5	5.8	6.4	7.1	7.9
79	Mauritania	1.3	1.5	1.7	2.2	2.8	3.5
80	Mauritius	3.3	4.2	5.5	6.5	8.2	9.4
81	Mexico	560.2	604.4	788.2	864.8	952.0	1,067.0
82	Mongolia	2.1	1.9	2.1	2.9	4.0	6.3
83	Morocco	38.8	40.7	49.1	62.5	79.4	92.3
84	Mozambique	2.5	2.9	5.0	7.7	11.1	14.6

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
85	Myanmar	3.3	4.4	6.5	11.9	20.3	27.1
86	Namibia	3.9	5.0	5.9	7.3	9.0	10.9
87	Nepal	4.3	5.5	7.0	8.3	10.3	12.2
88	Netherlands	458.5	513.5	634.9	678.5	722.8	730.8
89	New Zealand	69.8	81.7	94.1	114.7	120.8	133.6
90	Nicaragua	3.9	4.2	5.4	6.3	7.2	8.7
91	Niger	2.1	2.3	2.7	3.4	4.3	5.5
92	Nigeria	87.8	94.2	109.8	180.5	249.7	306.0
93	Norway	193.0	231.8	276.9	308.7	323.3	346.2
94	Pakistan	62.7	78.6	92.3	117.7	139.2	163.0
95	Panama	7.6	10.0	12.5	15.5	22.0	30.3
96	Papua New Guinea	2.8	4.2	4.4	4.9	6.5	8.8
97	Paraguay	5.7	6.8	6.7	8.7	11.1	13.7
98	Peru	42.1	54.3	61.7	76.1	106.2	129.7
99	Philippines	62.1	69.1	82.4	103.1	131.1	165.1
100	Poland	181.6	202.2	261.3	304.4	383.3	427.7
101	Portugal	142.2	154.7	189.0	197.3	203.4	191.2
102	Qatar	15.8	17.7	30.1	44.5	101.9	137.9
103	Republic of Korea	364.3	545.7	712.8	898.1	1,098.7	1,238.7
104	Republic of Moldova	6.1	2.4	2.1	3.0	3.5	4.2
105	Romania	85.0	76.3	75.4	99.7	115.1	124.6
106	Russian Federation	844.2	524.1	567.4	764.0	909.3	999.6
107	Rwanda	1.6	1.1	1.7	2.6	3.8	5.1
108	Saudi Arabia	209.1	248.6	269.8	328.5	374.9	462.0
109	Senegal	5.1	5.5	6.9	8.7	10.4	11.9
110	Serbia	38.1	18.2	19.4	26.3	29.9	30.3
111	Sierra Leone	2.0	1.5	0.9	1.7	2.1	3.3
112	Singapore	50.4	76.3	100.4	127.4	176.5	208.3
113	Slovakia	35.2	32.2	38.3	48.8	61.6	66.9
114	Slovenia	25.5	24.7	30.5	36.3	39.6	39.5
115	South Africa	178.3	186.2	213.6	257.8	300.3	328.7
116	Spain	744.0	801.8	979.5	1,157.2	1,219.9	1,172.1
117	Sri Lanka	12.0	15.7	20.0	24.4	33.3	44.1
118	Sudan (former)	14.2	17.9	25.3	35.2	35.9	37.3
119	Swaziland	2.0	2.4	2.8	3.2	3.6	4.1
120	Sweden	276.7	286.7	341.7	389.0	420.9	446.4
121	Switzerland	335.8	338.0	378.4	407.5	454.9	485.6
122	Syrian Arab Republic	12.6	18.6	22.2	28.4	36.1	19.8
123	Tajikistan	3.8	1.5	1.5	2.3	3.2	4.0
124	Thailand	93.0	139.8	145.0	189.3	227.4	255.2
125	Togo	1.8	1.8	2.0	2.1	2.5	3.0
126	Trinidad and Tobago	7.0	7.5	10.8	16.0	18.7	19.7
127	Tunisia	16.4	19.9	26.0	32.3	40.2	42.9
128	Turkey	269.7	315.9	386.6	483.0	565.1	673.1

(*Continued*)

Table A3.50 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
129	Uganda	3.9	5.6	7.6	11.0	16.3	19.6
130	Ukraine	142.8	68.2	61.7	89.2	93.8	92.4
131	United Arab Emirates	81.9	101.6	139.2	180.6	203.4	249.6
132	United Kingdom	1,656.0	1,797.8	2,105.5	2,418.9	2,466.8	2,676.5
133	United Republic of Tanzania	8.6	10.5	12.9	18.1	24.3	31.6
134	United States of America	8,228.6	9,359.5	11,553.3	13,093.7	13,599.3	14,682.7
135	Uruguay	12.7	15.5	17.2	17.4	23.2	27.4
136	Venezuela (Bolivarian Republic of)	104.3	123.6	128.3	145.5	174.6	186.9
137	Viet Nam	19.5	29.0	40.6	57.6	78.3	97.8
138	Yemen	7.5	9.8	14.7	19.0	23.6	21.6
139	Zambia	5.3	5.2	6.2	8.3	12.6	16.2
140	Zimbabwe	7.4	7.8	7.7	6.2	9.6	12.8

Table A3.51 GDP per capita (GDP per capita in thousands of constant 2005 US$)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	0.5	0.3	0.2	0.3	0.4	0.4
2	Albania	1.6	1.5	2.0	2.7	3.6	3.9
3	Algeria	2.6	2.3	2.6	3.1	3.2	3.4
4	Argentina	4.1	5.1	5.4	5.7	7.1	7.7
5	Armenia	1.1	0.7	0.9	1.6	2.0	2.4
6	Australia	26.6	29.5	33.6	37.4	39.5	41.6
7	Austria	29.1	31.3	36.1	38.2	40.1	41.0
8	Bahrain	15.7	17.5	18.6	18.4	16.6	17.9
9	Bangladesh	0.3	0.3	0.3	0.4	0.5	0.6
10	Barbados	12.8	12.0	13.7	14.2	14.5	14.5
11	Belgium	28.5	30.3	34.5	37.0	38.1	38.2
12	Belize	2.8	3.1	3.5	3.9	3.9	4.0
13	Benin	0.5	0.5	0.6	0.6	0.6	0.7
14	Bolivia (Plurinational State of)	0.8	0.9	1.0	1.0	1.2	1.4
15	Botswana	3.7	4.1	4.8	5.3	6.1	7.1
16	Brazil	4.0	4.3	4.4	4.7	5.6	5.9
17	Bulgaria	3.2	2.9	2.8	3.9	4.7	5.0
18	Burundi	0.2	0.2	0.2	0.1	0.2	0.3
19	Cambodia	0.2	0.3	0.3	0.5	0.6	0.7
20	Cameroon	1.0	0.8	0.9	0.9	0.9	1.0
21	Canada	27.9	28.7	33.4	36.0	36.5	38.3

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
22	Central African Republic	0.4	0.4	0.4	0.3	0.4	0.2
23	Chile	4.0	5.7	6.5	7.6	8.7	9.9
24	China	0.5	0.8	1.1	1.8	2.9	3.9
25	Colombia	2.8	3.1	3.0	3.4	4.0	4.7
26	Congo	1.8	1.6	1.6	1.7	1.9	2.1
27	Costa Rica	3.2	3.7	4.2	4.7	5.5	6.2
28	Côte d'Ivoire	1.1	1.0	1.0	0.9	1.0	1.1
29	Croatia	8.9	6.6	8.2	10.2	10.5	10.5
30	Cuba	3.6	2.5	3.0	3.8	4.9	5.4
31	Cyprus	13.2	15.2	16.7	18.3	19.3	16.6
32	Czech Republic	10.3	9.9	10.9	13.3	14.6	14.9
33	Democratic Republic of the Congo	0.5	0.3	0.2	0.2	0.2	0.3
34	Denmark	37.0	40.8	46.3	48.8	47.8	48.0
35	Dominican Republic	2.3	2.7	3.5	3.9	4.9	5.5
36	Ecuador	2.5	2.7	2.6	3.0	3.3	3.8
37	Egypt	0.9	1.0	1.2	1.3	1.6	1.5
38	El Salvador	1.8	2.3	2.6	2.9	3.0	3.2
39	Estonia	6.7	5.1	7.1	10.3	10.3	12.4
40	Fiji	3.1	3.2	3.4	3.8	3.8	4.1
41	Finland	28.8	27.5	34.8	39.0	39.7	38.8
42	France	28.2	29.5	33.3	34.9	35.2	35.5
43	Gabon	8.3	8.4	7.4	7.0	6.6	7.5
44	Gambia	0.4	0.4	0.4	0.4	0.5	0.4
45	Germany	28.8	31.0	33.8	34.7	37.2	39.8
46	Ghana	0.6	0.6	0.7	0.8	1.0	1.2
47	Greece	15.8	16.2	19.0	22.6	21.9	18.4
48	Guatemala	1.7	1.9	2.0	2.1	2.2	2.4
49	Guyana	1.1	1.5	1.7	1.8	2.1	2.5
50	Haiti	0.6	0.5	0.5	0.4	0.4	0.5
51	Honduras	1.1	1.2	1.2	1.4	1.6	1.7
52	Hungary	8.5	7.6	8.9	11.2	11.1	11.9
53	Iceland	41.4	39.9	48.5	56.4	56.0	59.4
54	India	0.4	0.5	0.6	0.7	1.0	1.2
55	Indonesia	0.9	1.2	1.1	1.3	1.7	2.0
56	Iran (Islamic Republic of)	2.2	2.3	2.6	3.1	3.8	3.5
57	Iraq	1.4	0.6	1.5	1.3	1.6	1.7
58	Ireland	23.0	28.1	43.0	50.8	48.2	52.2
59	Israel	15.3	17.8	20.4	20.6	23.2	24.6
60	Italy	26.5	28.2	31.1	32.0	30.8	28.7
61	Jamaica	3.8	4.2	4.0	4.3	4.1	4.1
62	Japan	31.2	33.0	34.0	35.8	36.3	37.6

(*Continued*)

Table A3.51 (Continued)

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
63	Jordan	1.7	1.8	1.9	2.4	2.6	2.6
64	Kazakhstan	3.1	1.9	2.3	3.8	4.7	5.6
65	Kenya	0.6	0.6	0.6	0.6	0.7	0.8
66	Kuwait	14.9	29.7	28.4	35.7	28.0	26.5
67	Kyrgyzstan	0.7	0.3	0.4	0.5	0.6	0.6
68	Lao People's Democratic Republic	0.3	0.3	0.4	0.5	0.6	0.8
69	Latvia	6.7	3.6	4.8	7.5	7.9	9.7
70	Lesotho	0.5	0.6	0.6	0.7	0.9	1.0
71	Liberia	0.2	0.1	0.2	0.2	0.3	0.3
72	Lithuania	6.7	4.0	5.2	7.9	8.9	11.1
73	Luxembourg	51.2	58.1	73.3	79.5	82.4	82.9
74	Malawi	0.3	0.3	0.3	0.3	0.4	0.4
75	Malaysia	3.1	4.3	4.9	5.6	6.4	7.4
76	Maldives	1.9	2.3	3.0	3.5	4.6	5.8
77	Mali	0.3	0.3	0.4	0.4	0.5	0.5
78	Malta	9.7	12.1	15.1	15.8	17.0	18.4
79	Mauritania	0.6	0.6	0.6	0.7	0.8	0.9
80	Mauritius	3.1	3.7	4.6	5.3	6.5	7.4
81	Mexico	6.5	6.4	7.7	7.9	8.0	8.5
82	Mongolia	1.0	0.8	0.9	1.2	1.5	2.2
83	Morocco	1.6	1.5	1.7	2.1	2.5	2.7
84	Mozambique	0.2	0.2	0.3	0.4	0.5	0.5
85	Myanmar	0.1	0.1	0.1	0.2	0.4	0.5
86	Namibia	2.8	3.0	3.1	3.6	4.1	4.5
87	Nepal	0.2	0.3	0.3	0.3	0.4	0.4
88	Netherlands	30.7	33.2	39.9	41.6	43.5	43.3
89	New Zealand	21.0	22.2	24.4	27.8	27.8	29.6
90	Nicaragua	0.9	0.9	1.1	1.2	1.2	1.5
91	Niger	0.3	0.2	0.2	0.2	0.3	0.3
92	Nigeria	0.9	0.9	0.9	1.3	1.6	1.7
93	Norway	45.5	53.2	61.7	66.8	66.1	67.4
94	Pakistan	0.6	0.6	0.7	0.8	0.8	0.9
95	Panama	3.1	3.6	4.1	4.7	6.1	7.8
96	Papua New Guinea	0.7	0.9	0.8	0.8	0.9	1.2
97	Paraguay	1.4	1.4	1.3	1.5	1.8	2.1
98	Peru	1.9	2.3	2.4	2.8	3.6	4.2
99	Philippines	1.0	1.0	1.1	1.2	1.4	1.7
100	Poland	4.8	5.2	6.8	8.0	10.1	11.3
101	Portugal	14.2	15.4	18.4	18.8	19.2	18.4

	Country/year	*1990*	*1995*	*2000*	*2005*	*2010*	*2014*
102	Qatar	33.1	35.3	50.7	53.2	57.7	63.5
103	Republic of Korea	8.5	12.1	15.2	18.7	22.2	24.6
104	Republic of Moldova	1.7	0.7	0.6	0.8	1.0	1.2
105	Romania	3.7	3.4	3.4	4.7	5.7	6.3
106	Russian Federation	5.7	3.5	3.9	5.3	6.4	7.0
107	Rwanda	0.2	0.2	0.2	0.3	0.4	0.4
108	Saudi Arabia	12.8	13.2	12.6	13.3	13.3	15.0
109	Senegal	0.7	0.6	0.7	0.8	0.8	0.8
110	Serbia	5.0	2.4	2.6	3.5	4.1	4.2
111	Sierra Leone	0.5	0.4	0.2	0.3	0.4	0.5
112	Singapore	16.6	21.7	24.9	29.9	34.8	38.1
113	Slovakia	6.6	6.0	7.1	9.1	11.4	12.3
114	Slovenia	12.7	12.4	15.3	18.2	19.3	19.2
115	South Africa	5.1	4.8	4.9	5.5	5.9	6.1
116	Spain	19.2	20.4	24.3	26.5	26.2	25.2
117	Sri Lanka	0.7	0.9	1.1	1.3	1.7	2.1
118	Sudan (former)	0.7	0.7	0.9	1.1	1.0	0.9
119	Swaziland	2.4	2.5	2.6	2.9	3.0	3.2
120	Sweden	32.3	32.5	38.5	43.1	44.9	46.0
121	Switzerland	50.0	48.0	52.7	54.8	58.1	59.3
122	Syrian Arab Republic	1.0	1.3	1.4	1.6	1.7	1.1
123	Tajikistan	0.7	0.3	0.2	0.3	0.4	0.5
124	Thailand	1.6	2.4	2.3	2.9	3.4	3.8
125	Togo	0.5	0.4	0.4	0.4	0.4	0.4
126	Trinidad and Tobago	5.7	6.0	8.5	12.3	14.1	14.5
127	Tunisia	2.0	2.2	2.7	3.2	3.8	3.9
128	Turkey	5.0	5.4	6.1	7.1	7.8	8.7
129	Uganda	0.2	0.3	0.3	0.4	0.5	0.5
130	Ukraine	2.8	1.3	1.3	1.9	2.0	2.0
131	United Arab Emirates	45.2	43.2	45.6	40.3	24.4	27.5
132	United Kingdom	28.9	31.0	35.8	40.0	39.3	41.4
133	United Republic of Tanzania	0.3	0.4	0.4	0.5	0.5	0.6
134	United States of America	33.0	35.1	40.9	44.3	44.0	46.0
135	Uruguay	4.1	4.8	5.2	5.2	6.9	8.0
136	Venezuela (Bolivarian Republic of)	5.3	5.6	5.2	5.4	6.0	6.1
137	Viet Nam	0.3	0.4	0.5	0.7	0.9	1.1
138	Yemen	0.6	0.6	0.8	0.9	1.0	0.8
139	Zambia	0.7	0.6	0.6	0.7	0.9	1.0
140	Zimbabwe	0.7	0.7	0.6	0.5	0.7	0.8

Table A3.52 GDP growth (GDP change (%) with respect to base year 1990)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	−4.6%	−11.6%	3.7%	16.1%	33.5%
2	Albania	−2.1%	3.6%	11.3%	18.5%	28.6%
3	Algeria	0.3%	4.7%	11.5%	15.0%	25.8%
4	Argentina	5.9%	10.9%	13.7%	21.9%	35.5%
5	Armenia	−12.0%	−9.3%	5.2%	10.3%	21.2%
6	Australia	3.3%	9.1%	13.8%	17.7%	29.0%
7	Austria	2.2%	6.7%	9.0%	10.7%	16.2%
8	Bahrain	4.9%	12.4%	19.7%	28.0%	46.3%
9	Bangladesh	4.2%	12.2%	19.9%	29.1%	52.4%
10	Barbados	−0.9%	2.7%	4.0%	5.1%	7.2%
11	Belgium	1.6%	5.7%	8.1%	10.0%	14.8%
12	Belize	4.3%	13.4%	21.1%	24.9%	39.5%
13	Benin	5.0%	13.0%	18.6%	24.3%	43.1%
14	Bolivia (Plurinational State of)	4.1%	9.7%	13.9%	20.5%	38.0%
15	Botswana	4.6%	12.7%	17.8%	24.5%	45.1%
16	Brazil	3.1%	6.4%	10.1%	16.3%	25.8%
17	Bulgaria	−2.6%	−5.4%	1.6%	5.5%	9.0%
18	Burundi	−2.1%	−4.1%	−2.0%	15.0%	34.9%
19	Cambodia	6.5%	17.9%	31.8%	42.9%	76.6%
20	Cameroon	−1.3%	4.3%	9.1%	13.1%	25.8%
21	Canada	1.7%	7.3%	10.7%	12.5%	20.6%
22	Central African Republic	1.9%	5.1%	4.5%	8.9%	−1.6%
23	Chile	8.7%	16.8%	23.4%	29.2%	48.9%
24	China	12.3%	28.1%	43.9%	64.5%	115.2%
25	Colombia	4.4%	6.8%	11.6%	18.0%	33.1%
26	Congo	0.4%	3.6%	8.9%	16.1%	29.2%
27	Costa Rica	5.5%	13.5%	19.3%	26.3%	44.1%
28	Côte d'Ivoire	1.6%	6.2%	6.2%	10.0%	22.4%
29	Croatia	−6.2%	−3.8%	1.6%	2.2%	1.7%
30	Cuba	−7.1%	−3.5%	2.6%	9.5%	16.6%
31	Cyprus	5.2%	11.8%	16.9%	20.5%	23.7%
32	Czech Republic	−0.8%	1.2%	6.2%	9.5%	13.8%
33	Democratic Republic of the Congo	−7.3%	−13.4%	−9.3%	−2.9%	6.4%
34	Denmark	2.3%	6.8%	8.6%	8.7%	12.5%
35	Dominican Republic	5.2%	15.8%	20.9%	30.5%	50.9%
36	Ecuador	3.4%	6.1%	12.5%	17.3%	32.8%
37	Egypt	4.7%	12.8%	18.1%	27.3%	41.8%
38	El Salvador	6.2%	11.9%	15.2%	17.3%	26.9%
39	Estonia	−6.9%	−1.6%	7.2%	6.7%	15.4%
40	Fiji	2.1%	5.3%	8.5%	9.5%	17.8%
41	Finland	−0.4%	5.8%	9.2%	10.3%	13.9%
42	France	1.3%	5.3%	7.5%	8.5%	12.7%
43	Gabon	3.1%	3.8%	5.0%	6.5%	17.2%
44	Gambia	2.3%	8.4%	12.9%	19.5%	30.1%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
45	Germany	2.0%	5.0%	5.8%	7.4%	12.2%
46	Ghana	4.3%	11.2%	18.5%	27.7%	54.6%
47	Greece	1.2%	6.3%	11.4%	10.9%	7.5%
48	Guatemala	4.3%	10.6%	14.8%	20.1%	34.1%
49	Guyana	7.1%	12.7%	13.7%	19.4%	33.9%
50	Haiti	−2.5%	0.0%	−0.7%	0.2%	5.5%
51	Honduras	3.5%	8.4%	14.8%	20.0%	33.4%
52	Hungary	−2.4%	0.7%	6.2%	5.9%	9.9%
53	Iceland	0.3%	6.7%	12.3%	14.0%	22.7%
54	India	5.1%	14.2%	24.3%	37.3%	66.0%
55	Indonesia	7.8%	10.9%	17.5%	26.0%	46.5%
56	Iran (Islamic Republic of)	2.9%	8.2%	15.7%	22.8%	31.2%
57	Iraq	−13.2%	9.6%	10.3%	18.5%	35.4%
58	Ireland	4.6%	19.2%	27.1%	28.4%	43.8%
59	Israel	6.8%	15.9%	19.0%	25.5%	41.6%
60	Italy	1.3%	4.2%	5.4%	5.0%	5.1%
61	Jamaica	3.0%	3.6%	5.7%	5.0%	7.6%
62	Japan	1.4%	2.8%	4.4%	4.8%	7.5%
63	Jordan	6.2%	12.2%	21.2%	30.7%	48.3%
64	Kazakhstan	−9.3%	−8.7%	3.3%	11.4%	24.2%
65	Kenya	1.6%	4.6%	9.6%	16.4%	31.4%
66	Kuwait	9.7%	15.6%	27.5%	29.3%	48.2%
67	Kyrgyzstan	−12.7%	−9.7%	−5.4%	−0.1%	6.5%
68	Lao People's Democratic Republic	6.2%	16.2%	25.4%	38.1%	70.1%
69	Latvia	−13.1%	−10.6%	−1.4%	−2.0%	2.5%
70	Lesotho	4.1%	10.3%	14.3%	21.8%	37.5%
71	Liberia	−22.5%	6.7%	9.8%	27.4%	51.5%
72	Lithuania	−10.3%	−7.6%	1.3%	2.7%	9.4%
73	Luxembourg	4.0%	13.1%	17.3%	20.9%	33.1%
74	Malawi	1.2%	6.2%	10.3%	20.6%	33.5%
75	Malaysia	9.5%	18.7%	25.8%	32.9%	56.7%
76	Maldives	6.8%	19.9%	28.2%	42.4%	77.8%
77	Mali	4.5%	10.5%	19.4%	26.8%	42.6%
78	Malta	5.5%	13.8%	16.7%	19.7%	31.7%
79	Mauritania	3.2%	7.9%	14.1%	21.4%	39.3%
80	Mauritius	4.8%	13.4%	18.3%	25.2%	41.3%
81	Mexico	1.5%	8.9%	11.5%	14.2%	24.0%
82	Mongolia	−2.8%	−0.1%	8.1%	16.9%	43.5%
83	Morocco	0.9%	6.0%	12.7%	19.6%	33.5%
84	Mozambique	3.3%	19.3%	32.7%	45.1%	80.2%
85	Myanmar	5.8%	18.6%	38.0%	57.5%	101.9%
86	Namibia	5.0%	10.9%	16.7%	23.1%	40.7%
87	Nepal	5.2%	13.0%	17.9%	24.6%	42.1%
88	Netherlands	2.3%	8.5%	10.3%	12.1%	16.8%
89	New Zealand	3.2%	7.8%	13.2%	14.7%	24.1%

(*Continued*)

Table A3.52 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
90	Nicaragua	1.8%	8.7%	13.0%	16.5%	31.1%
91	Niger	1.5%	6.0%	12.0%	19.3%	37.3%
92	Nigeria	1.4%	5.8%	19.7%	29.9%	51.6%
93	Norway	3.7%	9.4%	12.5%	13.8%	21.5%
94	Pakistan	4.6%	10.1%	17.1%	22.1%	37.5%
95	Panama	5.5%	13.1%	19.3%	30.2%	58.3%
96	Papua New Guinea	8.6%	11.9%	14.9%	23.5%	46.9%
97	Paraguay	3.4%	4.0%	11.1%	18.1%	33.6%
98	Peru	5.2%	10.1%	16.0%	26.0%	45.5%
99	Philippines	2.2%	7.3%	13.5%	20.5%	38.5%
100	Poland	2.2%	9.5%	13.8%	20.5%	33.1%
101	Portugal	1.7%	7.4%	8.5%	9.4%	10.4%
102	Qatar	2.3%	17.5%	29.6%	59.4%	106.0%
103	Republic of Korea	8.4%	18.3%	25.3%	31.8%	50.4%
104	Republic of Moldova	−17.0%	−23.2%	−16.3%	−13.0%	−11.4%
105	Romania	−2.1%	−3.0%	4.1%	7.9%	13.6%
106	Russian Federation	−9.1%	−9.5%	−2.5%	1.9%	5.8%
107	Rwanda	−8.5%	1.5%	11.9%	23.6%	45.3%
108	Saudi Arabia	3.5%	6.6%	11.9%	15.7%	30.2%
109	Senegal	1.4%	7.8%	14.2%	19.2%	32.4%
110	Serbia	−13.7%	−15.5%	−8.9%	−5.8%	−7.4%
111	Sierra Leone	−5.0%	−17.9%	−4.7%	1.6%	18.7%
112	Singapore	8.6%	18.8%	26.1%	36.8%	60.4%
113	Slovakia	−1.8%	2.1%	8.5%	15.0%	23.8%
114	Slovenia	−0.6%	4.6%	9.3%	11.7%	15.8%
115	South Africa	0.9%	4.6%	9.6%	13.9%	22.6%
116	Spain	1.5%	7.1%	11.7%	13.2%	16.4%
117	Sri Lanka	5.5%	13.6%	19.4%	29.0%	54.2%
118	Sudan (former)	4.8%	15.5%	25.5%	26.1%	38.0%
119	Swaziland	3.4%	8.5%	12.0%	15.6%	25.9%
120	Sweden	0.7%	5.4%	8.9%	11.1%	17.3%
121	Switzerland	0.1%	3.0%	5.0%	7.9%	13.1%
122	Syrian Arab Republic	8.1%	15.3%	22.6%	30.2%	16.4%
123	Tajikistan	−17.6%	−21.4%	−11.8%	−4.6%	1.5%
124	Thailand	8.5%	11.8%	19.5%	25.1%	40.0%
125	Togo	−0.3%	2.3%	3.8%	7.9%	18.9%
126	Trinidad and Tobago	1.4%	11.4%	22.8%	27.8%	40.9%
127	Tunisia	3.9%	12.2%	18.4%	25.1%	37.7%
128	Turkey	3.2%	9.4%	15.7%	20.3%	35.6%
129	Uganda	7.5%	18.3%	29.6%	43.1%	71.2%
130	Ukraine	−13.7%	−18.9%	−11.1%	−10.0%	−13.5%
131	United Arab Emirates	4.4%	14.2%	21.9%	25.5%	45.0%
132	United Kingdom	1.7%	6.2%	9.9%	10.5%	17.4%
133	United Republic of Tanzania	4.0%	10.6%	20.4%	29.6%	54.3%
134	United States of America	2.6%	8.9%	12.3%	13.4%	21.3%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
135	Uruguay	4.1%	8.0%	8.2%	16.4%	29.4%
136	Venezuela (Bolivarian Republic of)	3.4%	5.3%	8.7%	13.7%	21.4%
137	Viet Nam	8.2%	20.0%	31.0%	41.5%	71.1%
138	Yemen	5.5%	18.2%	26.1%	33.0%	42.1%
139	Zambia	−0.7%	3.7%	11.8%	24.1%	44.7%
140	Zimbabwe	1.2%	1.3%	−4.1%	6.7%	20.1%

Table A3.53 GDP per capita growth (GDP per capita change (%) with respect to base year 1990)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
1	Afghanistan	−10.6%	−21.8%	−13.0%	−5.9%	−3.2%
2	Albania	−1.5%	5.2%	13.7%	22.1%	34.2%
3	Algeria	−1.9%	−0.1%	4.7%	5.9%	9.8%
4	Argentina	4.5%	7.5%	8.7%	15.0%	23.8%
5	Armenia	−10.3%	−6.0%	9.6%	15.4%	28.0%
6	Australia	2.1%	6.0%	8.9%	10.4%	16.0%
7	Austria	1.5%	5.6%	7.1%	8.4%	12.1%
8	Bahrain	2.2%	4.4%	4.1%	1.4%	4.5%
9	Bangladesh	2.0%	6.4%	11.3%	18.0%	33.1%
10	Barbados	−1.2%	1.7%	2.7%	3.2%	4.3%
11	Belgium	1.3%	5.0%	6.8%	7.6%	10.3%
12	Belize	2.3%	5.9%	9.3%	9.2%	13.1%
13	Benin	1.3%	4.1%	4.8%	5.8%	11.4%
14	Bolivia (Plurinational State of)	2.1%	4.4%	6.1%	9.9%	19.5%
15	Botswana	1.8%	6.4%	9.3%	12.8%	23.8%
16	Brazil	1.4%	2.4%	4.1%	8.5%	13.2%
17	Bulgaria	−1.9%	−3.8%	4.6%	9.9%	16.1%
18	Burundi	−4.2%	−8.5%	−10.1%	1.0%	8.4%
19	Cambodia	2.9%	9.3%	19.5%	27.2%	47.9%
20	Cameroon	−4.0%	−2.7%	−1.4%	−1.0%	1.8%
21	Canada	0.6%	4.6%	6.6%	7.0%	11.1%
22	Central African Republic	−0.6%	−1.0%	−3.6%	−1.8%	−16.4%
23	Chile	7.0%	12.7%	17.3%	21.1%	34.7%
24	China	11.0%	24.8%	39.0%	57.8%	102.4%
25	Colombia	2.6%	2.5%	5.3%	9.7%	19.1%
26	Congo	−2.2%	−3.0%	−1.1%	1.7%	4.5%
27	Costa Rica	2.8%	7.0%	10.3%	14.7%	24.8%
28	Côte d'Ivoire	−1.8%	−1.6%	−3.8%	−3.0%	0.2%
29	Croatia	−5.8%	−1.9%	3.5%	4.3%	5.8%
30	Cuba	−7.6%	−4.7%	1.0%	7.7%	13.8%
31	Cyprus	2.9%	6.1%	8.5%	10.0%	7.9%
32	Czech Republic	−0.8%	1.4%	6.6%	9.1%	13.1%

(*Continued*)

Table A3.53 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
33	Democratic Republic of the Congo	−10.7%	−20.0%	−19.4%	−17.2%	−17.4%
34	Denmark	2.0%	5.8%	7.2%	6.6%	9.1%
35	Dominican Republic	3.2%	10.8%	13.6%	20.4%	33.4%
36	Ecuador	1.1%	0.6%	4.5%	6.7%	14.6%
37	Egypt	2.6%	7.5%	10.0%	15.9%	21.5%
38	El Salvador	4.9%	9.1%	11.7%	13.2%	20.7%
39	Estonia	−5.3%	1.3%	11.2%	11.2%	22.4%
40	Fiji	0.8%	2.5%	5.3%	5.1%	10.3%
41	Finland	−0.9%	4.8%	7.9%	8.4%	10.5%
42	France	0.9%	4.3%	5.5%	5.7%	8.0%
43	Gabon	0.4%	−2.7%	−4.2%	−5.6%	−3.2%
44	Gambia	−0.7%	0.7%	0.8%	2.5%	1.5%
45	Germany	1.5%	4.1%	4.8%	6.6%	11.4%
46	Ghana	1.5%	4.4%	7.8%	12.4%	26.4%
47	Greece	0.5%	4.8%	9.3%	8.6%	5.2%
48	Guatemala	1.7%	4.1%	4.8%	6.6%	11.3%
49	Guyana	6.9%	11.8%	12.8%	18.1%	31.3%
50	Haiti	−4.3%	−4.5%	−7.1%	−8.0%	−7.6%
51	Honduras	0.9%	2.1%	5.4%	7.9%	13.5%
52	Hungary	−2.3%	1.1%	6.9%	6.9%	11.8%
53	Iceland	−0.7%	4.1%	8.1%	7.9%	12.8%
54	India	3.1%	8.9%	16.1%	25.9%	45.4%
55	Indonesia	6.1%	6.7%	11.2%	17.3%	30.8%
56	Iran (Islamic Republic of)	1.5%	4.0%	9.5%	14.6%	17.5%
57	Iraq	−15.7%	1.7%	−1.0%	2.8%	7.1%
58	Ireland	4.0%	16.9%	21.9%	20.3%	31.3%
59	Israel	3.1%	7.5%	7.8%	11.0%	17.2%
60	Italy	1.3%	4.1%	4.8%	3.8%	2.7%
61	Jamaica	2.2%	1.6%	3.0%	2.0%	3.0%
62	Japan	1.1%	2.2%	3.5%	3.9%	6.4%
63	Jordan	1.0%	2.8%	8.0%	10.8%	13.9%
64	Kazakhstan	−8.7%	−6.5%	5.3%	11.4%	21.9%
65	Kenya	−1.5%	−2.5%	−1.1%	1.7%	5.9%
66	Kuwait	14.8%	17.5%	24.5%	17.1%	21.3%
67	Kyrgyzstan	−13.4%	−12.1%	−9.1%	−5.3%	−3.1%
68	Lao People's Democratic Republic	3.4%	9.7%	16.3%	25.3%	46.2%
69	Latvia	−11.9%	−8.0%	3.0%	4.1%	12.9%
70	Lesotho	2.2%	6.3%	9.1%	15.0%	25.3%
71	Liberia	−22.3%	−1.5%	−1.6%	8.7%	18.5%
72	Lithuania	−10.0%	−6.3%	4.0%	7.4%	18.2%
73	Luxembourg	2.6%	9.4%	11.6%	12.6%	17.4%
74	Malawi	0.3%	1.6%	2.2%	7.8%	10.3%
75	Malaysia	6.7%	11.5%	15.3%	19.2%	32.8%
76	Maldives	3.5%	12.1%	16.4%	25.0%	45.1%
77	Mali	1.9%	3.4%	7.6%	9.7%	12.9%

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
78	Malta	4.5%	11.7%	13.0%	15.1%	23.7%
79	Mauritania	0.3%	0.2%	2.1%	5.2%	11.3%
80	Mauritius	3.6%	10.3%	14.0%	20.1%	33.3%
81	Mexico	−0.4%	4.0%	4.8%	5.2%	9.1%
82	Mongolia	−3.8%	−2.4%	4.2%	10.7%	30.5%
83	Morocco	−0.8%	2.2%	7.2%	12.3%	20.5%
84	Mozambique	−0.3%	10.3%	18.3%	24.9%	42.2%
85	Myanmar	4.5%	14.9%	32.1%	49.5%	86.3%
86	Namibia	1.7%	3.1%	6.6%	10.3%	18.0%
87	Nepal	2.4%	6.5%	9.2%	13.9%	24.0%
88	Netherlands	1.6%	6.8%	7.9%	9.1%	12.2%
89	New Zealand	1.2%	3.9%	7.3%	7.3%	12.2%
90	Nicaragua	−0.4%	3.6%	5.9%	7.4%	15.8%
91	Niger	−1.9%	−2.9%	−2.0%	−0.5%	2.3%
92	Nigeria	−1.1%	−0.7%	8.9%	14.3%	23.4%
93	Norway	3.2%	7.9%	10.1%	9.8%	14.0%
94	Pakistan	1.9%	3.4%	7.1%	8.9%	14.8%
95	Panama	3.4%	7.5%	10.8%	18.3%	36.4%
96	Papua New Guinea	5.9%	4.9%	4.5%	9.0%	20.9%
97	Paraguay	0.9%	−1.8%	2.6%	7.2%	15.4%
98	Peru	3.2%	5.4%	9.3%	17.0%	29.5%
99	Philippines	−0.3%	1.3%	4.5%	8.9%	18.4%
100	Poland	1.9%	9.4%	13.7%	20.6%	33.2%
101	Portugal	1.6%	6.6%	7.2%	7.8%	8.9%
102	Qatar	1.3%	11.2%	12.6%	14.9%	24.2%
103	Republic of Korea	7.3%	15.6%	21.7%	27.2%	42.5%
104	Republic of Moldova	−16.9%	−22.9%	−15.8%	−12.2%	−10.3%
105	Romania	−1.7%	−2.2%	6.3%	11.6%	19.5%
106	Russian Federation	−9.1%	−9.2%	−1.7%	2.8%	6.9%
107	Rwanda	−4.7%	−1.0%	6.0%	13.3%	25.2%
108	Saudi Arabia	0.6%	−0.3%	0.9%	1.1%	5.4%
109	Senegal	−1.5%	0.8%	3.2%	4.0%	5.9%
110	Serbia	−13.8%	−15.3%	−8.5%	−4.9%	−5.5%
111	Sierra Leone	−4.5%	−18.6%	−10.5%	−7.7%	1.3%
112	Singapore	5.5%	10.8%	15.9%	20.4%	32.0%
113	Slovakia	−2.0%	1.7%	8.1%	14.5%	22.9%
114	Slovenia	−0.5%	4.7%	9.3%	11.0%	14.6%
115	South Africa	−1.2%	−1.1%	1.9%	3.9%	6.3%
116	Spain	1.2%	6.2%	8.5%	8.1%	9.6%
117	Sri Lanka	4.3%	11.2%	15.7%	23.8%	44.5%
118	Sudan (former)	0.5%	6.1%	11.6%	8.8%	10.2%
119	Swaziland	1.2%	2.9%	5.3%	6.6%	10.7%
120	Sweden	0.1%	4.5%	7.4%	8.5%	12.5%
121	Switzerland	−0.8%	1.3%	2.3%	3.8%	5.9%

(*Continued*)

Table A3.53 (Continued)

	Country/year	*1995*	*2000*	*2005*	*2010*	*2014*
122	Syrian Arab Republic	5.1%	7.7%	11.6%	14.6%	1.5%
123	Tajikistan	−19.0%	−24.4%	−17.2%	−12.8%	−12.6%
124	Thailand	7.5%	8.9%	15.0%	20.0%	31.9%
125	Togo	−2.7%	−3.9%	−5.7%	−5.3%	−3.7%
126	Trinidad and Tobago	0.9%	10.4%	21.0%	25.1%	36.2%
127	Tunisia	1.9%	7.9%	12.4%	17.3%	24.7%
128	Turkey	1.6%	5.2%	9.3%	11.8%	20.2%
129	Uganda	4.1%	9.4%	15.0%	21.7%	32.2%
130	Ukraine	−13.6%	−17.8%	−8.9%	−7.1%	−9.6%
131	United Arab Emirates	−0.9%	0.2%	−2.8%	−14.3%	−15.3%
132	United Kingdom	1.4%	5.4%	8.5%	8.0%	12.7%
133	United Republic of Tanzania	0.7%	2.9%	8.2%	12.0%	21.7%
134	United States of America	1.3%	5.6%	7.7%	7.5%	11.8%
135	Uruguay	3.3%	6.2%	6.4%	14.0%	25.4%
136	Venezuela (Bolivarian Republic of)	1.2%	−0.1%	0.9%	3.5%	5.0%
137	Viet Nam	6.3%	15.3%	24.0%	32.1%	53.9%
138	Yemen	0.4%	7.0%	10.2%	12.2%	9.4%
139	Zambia	−3.2%	−2.9%	1.4%	8.5%	16.2%
140	Zimbabwe	−1.0%	−3.1%	−9.1%	−0.6%	6.0%

Table A3.54 Country classification by region

Africa	*Asia*	*Europe*
Eastern Africa	**Eastern Asia**	**Eastern Europe**
Burundi	China	Bulgaria
Kenya	Japan	Czech Republic
Malawi	Mongolia	Hungary
Mauritius	Republic of Korea	Poland
Mozambique	**South–Central Asia**	Republic of Moldova
Rwanda	Afghanistan	Romania
Uganda	Bangladesh	Russian Federation
United Republic of Tanzania	India	Slovakia
Zambia	Iran (Islamic Republic of)	Ukraine
Zimbabwe	Kazakhstan	**Northern Europe**
Middle Africa	Kyrgyzstan	Denmark
Cameroon	Maldives	Estonia
Central African Republic	Nepal	Finland
Congo	Pakistan	Iceland
Democratic Republic of the Congo	Sri Lanka	Ireland
Gabon	Tajikistan	Latvia

Africa	*Asia*	*Europe*
Northern Africa	**South-Eastern Asia**	Lithuania
Algeria	Cambodia	Norway
Egypt	Indonesia	Sweden
Morocco	Lao People's Democratic Republic	United Kingdom
Sudan (former)	Malaysia	**Southern Europe**
Tunisia	Myanmar	Albania
Southern Africa	Philippines	Croatia
Botswana	Singapore	Greece
Lesotho	Thailand	Italy
Namibia	Vietnam	Malta
South Africa	**Western Asia**	Portugal
Swaziland	Armenia	Serbia
Western Africa	Bahrain	Slovenia
Benin	Cyprus	Spain
Côte d'Ivoire	Iraq	**Western Europe**
Gambia	Israel	Austria
Ghana	Jordan	Belgium
Liberia	Kuwait	France
Mali	Qatar	Germany
Mauritania	Saudi Arabia	Luxembourg
Niger	Syrian Arab Republic	Netherlands
Nigeria	Turkey	Switzerland
Senegal	United Arab Emirates	
Sierra Leone	Yemen	
Latin America and Caribbean	**Northern America**	**Oceania**
Caribbean	**Northern America**	**Australia/New Zealand**
Barbados	Canada	Australia
Cuba	United States of America	New Zealand
Dominican Republic		**Melanesia**
Haiti		Fiji
Jamaica		Papua New Guinea
Trinidad and Tobago		
Central America		
Belize		
Costa Rica		
El Salvador		
Guatemala		
Honduras		
Mexico		
Nicaragua		
Panama		
South America		
Argentina		
Bolivia (Plurinational State of)		

(*Continued*)

Table A3.54 (Continued)

Africa	*Asia*	*Europe*
Northern Africa	**South-Eastern Asia**	Lithuania
Algeria	Cambodia	Norway
Egypt	Indonesia	Sweden
Morocco	Lao People's Democratic Republic	United Kingdom
Sudan (former)	Malaysia	**Southern Europe**
Tunisia	Myanmar	Albania
Southern Africa	Philippines	Croatia
Botswana	Singapore	Greece
Lesotho	Thailand	Italy
Namibia	Vietnam	Malta
South Africa	**Western Asia**	Portugal
Swaziland	Armenia	Serbia
Western Africa	Bahrain	Slovenia
Benin	Cyprus	Spain
Côte d'Ivoire	Iraq	**Western Europe**
Gambia	Israel	Austria
Ghana	Jordan	Belgium
Liberia	Kuwait	France
Mali	Qatar	Germany
Mauritania	Saudi Arabia	Luxembourg
Niger	Syrian Arab Republic	Netherlands
Nigeria	Turkey	Switzerland
Senegal	United Arab Emirates	
Sierra Leone	Yemen	
Brazil		
Chile		
Colombia		
Ecuador		
Guyana		
Paraguay		
Peru		
Uruguay		
Venezuela (Bolivarian Republic of)		

Table A3.55 Country classification by income

	Country	*Income group*
1	Afghanistan	Low Income
2	Albania	Lower Middle Income
3	Algeria	Upper Middle Income
4	Argentina	Upper Middle Income

Table A3.55 (Continued)

	Country	*Income group*
5	Armenia	Lower Middle Income
6	Australia	High Income
7	Austria	High Income
8	Bahrain	High Income
9	Bangladesh	Low Income
10	Barbados	High Income
11	Belgium	High Income
12	Belize	Lower Middle Income
13	Benin	Low Income
14	Bolivia (Plurinational State of)	Lower Middle Income
15	Botswana	Upper Middle Income
16	Brazil	Upper Middle Income
17	Bulgaria	Upper Middle Income
18	Burundi	Low Income
19	Cambodia	Low Income
20	Cameroon	Lower Middle Income
21	Canada	High Income
22	Central African Republic	Low Income
23	Chile	Upper Middle Income
24	China	Upper Middle Income
25	Colombia	Upper Middle Income
26	Congo	Lower Middle Income
27	Costa Rica	Upper Middle Income
28	Côte d'Ivoire	Lower Middle Income
29	Croatia	High Income
30	Cuba	Upper Middle Income
31	Cyprus	High Income
32	Czech Republic	High Income
33	Democratic Republic of the Congo	Low Income
34	Denmark	High Income
35	Dominican Republic	Upper Middle Income
36	Ecuador	Upper Middle Income
37	Egypt	Lower Middle Income
38	El Salvador	Lower Middle Income
39	Estonia	High Income
40	Fiji	Lower Middle Income
41	Finland	High Income
42	France	High Income
43	Gabon	Upper Middle Income
44	Gambia	Low Income
45	Germany	High Income
46	Ghana	Lower Middle Income
47	Greece	High Income
48	Guatemala	Lower Middle Income

(*Continued*)

Table A3.55 (Continued)

	Country	*Income group*
49	Guyana	Lower Middle Income
50	Haiti	Low Income
51	Honduras	Lower Middle Income
52	Hungary	High Income
53	Iceland	High Income
54	India	Lower Middle Income
55	Indonesia	Lower Middle Income
56	Iran (Islamic Republic of)	Upper Middle Income
57	Iraq	Lower Middle Income
58	Ireland	High Income
59	Israel	High Income
60	Italy	High Income
61	Jamaica	Upper Middle Income
62	Japan	High Income
63	Jordan	Upper Middle Income
64	Kazakhstan	Upper Middle Income
65	Kenya	Low Income
66	Kuwait	High Income
67	Kyrgyzstan	Low Income
68	Lao People's Democratic Republic	Lower Middle Income
69	Latvia	Upper Middle Income
70	Lesotho	Lower Middle Income
71	Liberia	Low Income
72	Lithuania	Upper Middle Income
73	Luxembourg	High Income
74	Malawi	Low Income
75	Malaysia	Upper Middle Income
76	Maldives	Upper Middle Income
77	Mali	Low Income
78	Malta	High Income
79	Mauritania	Low Income
80	Mauritius	Upper Middle Income
81	Mexico	Upper Middle Income
82	Mongolia	Lower Middle Income
83	Morocco	Lower Middle Income
84	Mozambique	Low Income
85	Myanmar	Low Income
86	Namibia	Upper Middle Income
87	Nepal	Low Income
88	Netherlands	High Income
89	New Zealand	High Income
90	Nicaragua	Lower Middle Income
91	Niger	Low Income
92	Nigeria	Lower Middle Income
93	Norway	High Income
94	Pakistan	Lower Middle Income

	Country	*Income group*
95	Panama	Upper Middle Income
96	Papua New Guinea	Lower Middle Income
97	Paraguay	Lower Middle Income
98	Peru	Upper Middle Income
99	Philippines	Lower Middle Income
100	Poland	High Income
101	Portugal	High Income
102	Qatar	High Income
103	Republic of Korea	High Income
104	Republic of Moldova	Lower Middle Income
105	Romania	Upper Middle Income
106	Russian Federation	Upper Middle Income
107	Rwanda	Low Income
108	Saudi Arabia	High Income
109	Senegal	Lower Middle Income
110	Serbia	Upper Middle Income
111	Sierra Leone	Low Income
112	Singapore	High Income
113	Slovakia	High Income
114	Slovenia	High Income
115	South Africa	Upper Middle Income
116	Spain	High Income
117	Sri Lanka	Lower Middle Income
118	Sudan (former)	Lower Middle Income
119	Swaziland	Lower Middle Income
120	Sweden	High Income
121	Switzerland	High Income
122	Syrian Arab Republic	Lower Middle Income
123	Tajikistan	Low Income
124	Thailand	Upper Middle Income
125	Togo	Low Income
126	Trinidad and Tobago	High Income
127	Tunisia	Upper Middle Income
128	Turkey	Upper Middle Income
129	Uganda	Low Income
130	Ukraine	Lower Middle Income
131	United Arab Emirates	High Income
132	United Kingdom	High Income
133	United Republic of Tanzania	Low Income
134	United States of America	High Income
135	Uruguay	Upper Middle Income
136	Venezuela (Bolivarian Republic of)	Upper Middle Income
137	Viet Nam	Lower Middle Income
138	Yemen	Lower Middle Income
139	Zambia	Lower Middle Income
140	Zimbabwe	Low Income

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