2020

THE EIB COVID-19 ECONOMIC VULNERABILITY INDEX

European Investment Bank
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AN ANALYSIS OF COUNTRIES OUTSIDE THE EUROPEAN UNION

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The EIB COVID-19 Economic Vulnerability Index – An analysis of countries outside the European Union

Thematic Study

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CONTENTS

INTRODUCTION

There is a lot that we do not yet know about the health effects of COVID-19. We do not know how the virus is spreading, or why it is causing a high death toll in some countries and a lower one in others. We do not know when we will find a vaccine.

What we do know that is that the virus and lockdowns are having severe impacts on the global economy. From large manufacturers to small businesses, restaurants, bars and hair salons, even the informal economy – everyone has been hit. It is a crisis like no other.

We know that the crisis has crippled demand and supply. It is creating huge uncertainties and long-term shifts in consumer preferences and production practices. It is laying bare our vulnerabilities and creating many new challenges. It is one of the most severe blows to economic growth on record.

For a clearer understanding of these impacts, we have developed an index based on a small set of economic indicators to rate countries' vulnerability to the crisis. The index covers countries outside the European Union and helps give us an idea of the regions that need the most help. Low-income and developing countries are often very vulnerable when a crisis strikes.

The European Investment Bank is participating actively in the global effort to help people hit the hardest by the pandemic. We are strengthening economies and healthcare systems while fighting for a smart, green recovery.

Barbara Marchitto

Head, Country and Financial Sector Analysis,
Economics Department, European Investment Bank

THREE FACTORS CONTRIBUTING TO RESILIENCE

The EIB COVID-19 Vulnerability Index examines three main factors that influence the resilience of economies to the COVID-19 shock.

1. **Quality of healthcare and age of the population.** Older societies and poorly functioning healthcare systems often make countries vulnerable to the health impacts of the pandemic.

2. **Structure of the economy.** The variables include integration into global value chains, dependence on exports such as fuels, metals and ores, revenue from tourism, and remittances, or the money people send back to their countries of origin.

3. **Exposure and ability to respond to shocks.** The shocks considered include the reversal of capital flows. Economies with large current account deficits not financed by foreign direct investments have to fund their remaining external financing needs through volatile capital flows, such as portfolio investment. These flows have declined sharply, particularly in developing and emerging markets. Other variables include the ability of countries to implement countercyclical fiscal policies, the strength of the banking sector and its capacity to support the recovery from the crisis.

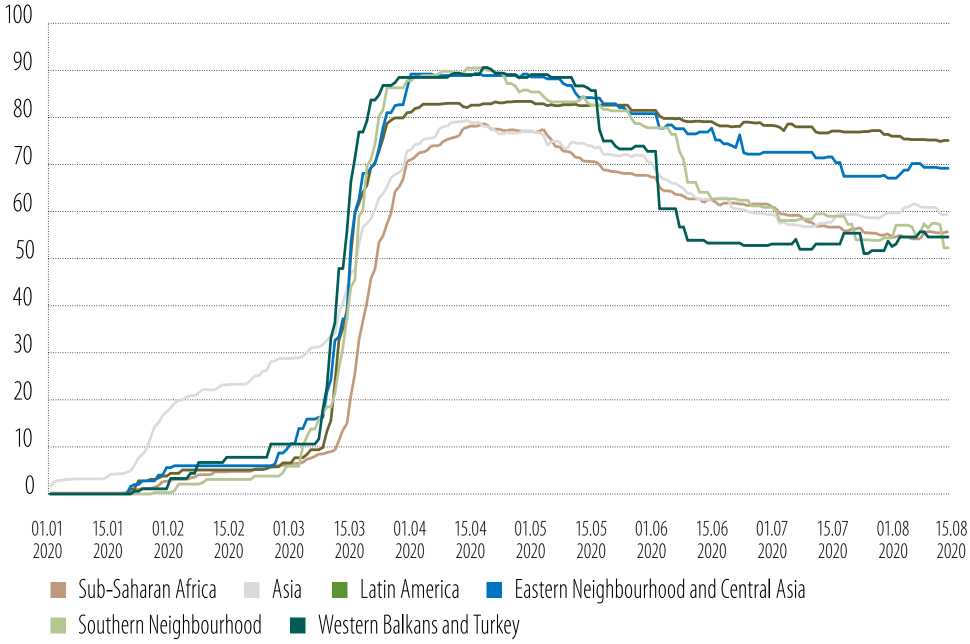
This report outlines three categories of vulnerability: lowest, intermediate and highest. The categories are relative, meaning that the countries with the lowest vulnerability to the crisis may still suffer from a significant shock if they are badly hit by the virus. The thresholds for this index were based on the EIB Economics Department's understanding of the underlying economic variables, and the approach is detailed in the Annex. The analysis focuses on emerging markets and developing countries outside the European Economic Area and the European Union. More details on the data used in this report and the construction of the index can be found in the Annex.

The vulnerability index does not reflect the evolving policy responses in each country or how the epidemic will unfold. Equally vulnerable countries may be impacted differently depending on the policy responses and the epidemic's development.

The pace at which containment measures were applied varied around the world, as outlined in Figure 1. Countries in Asia were the first to begin implementing restrictions. In mid-March 2020, countries around the world began stepping up restrictions to fight the epidemic. The regions in the European Union's neighbourhood had, on average, the most stringent measures. These regions are made up of the Southern Neighbourhood, Eastern Neighbourhood, and Central Asia, Turkey and the Western Balkans. Measures in sub-Saharan Africa and Asia were, on average, less stringent. Variation was high within each region. In early June, most countries started relaxing lockdown measures.

Figure 1

Stringency of government responses to COVID-19



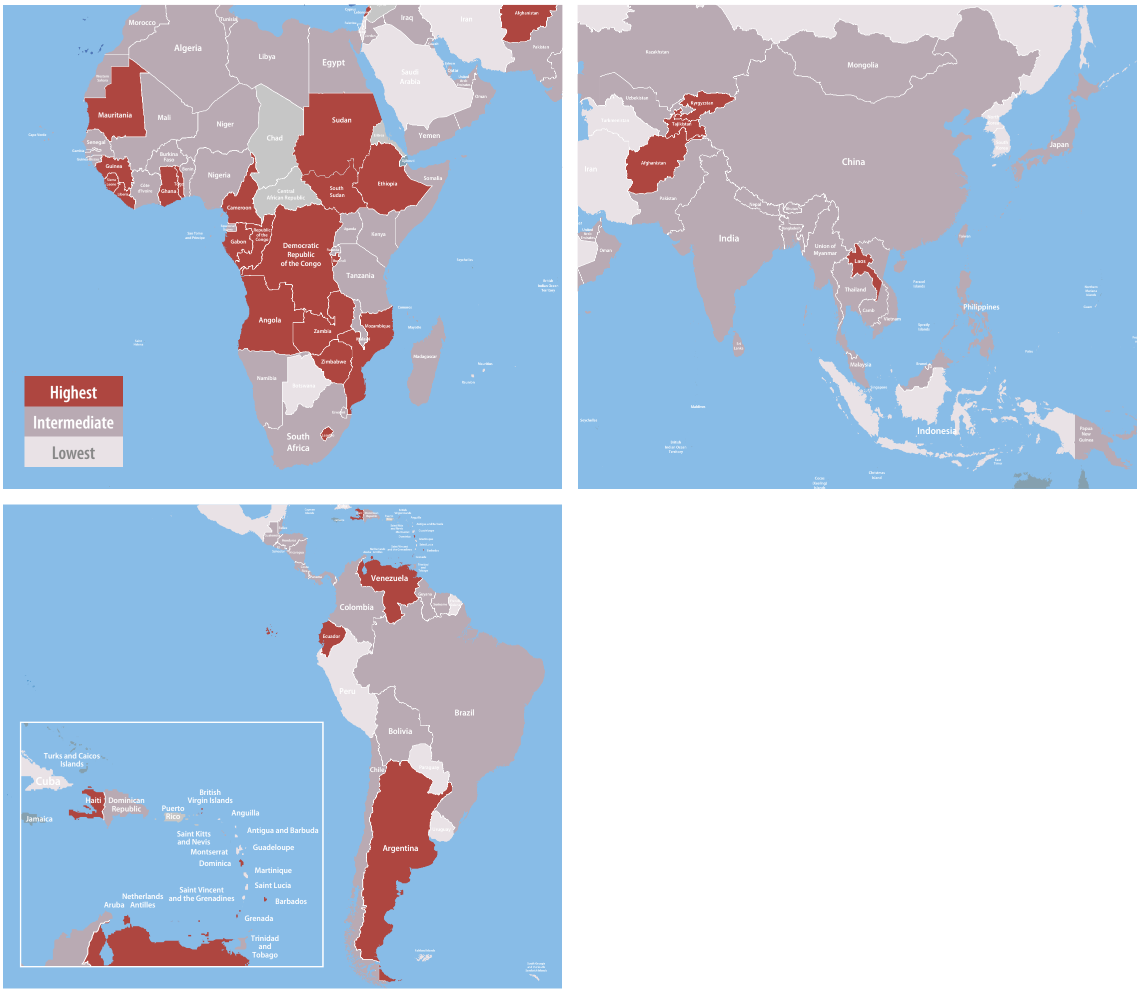
Source: *Blavatnik School of Government, Oxford University, EIB Economics Department calculations, 13 May 2020.*

GLOBAL SUMMARY

The index shows that the economies of low-income countries are highly vulnerable to the COVID-19 pandemic. Half of low-income countries and 25% of middle-income countries face the highest risk from COVID-19. Unsurprisingly, higher-income countries generally have better coping capacities, even when hit by an unprecedented global shock. Of the countries with the highest vulnerability to the crisis, only two – Antigua and Barbuda and the Bahamas – are high-income. Nonetheless, 56% of high-income countries face an intermediate level of risk, along with 63% of middle-income economies and half of the poorest countries.

Figure 2

COVID-19 vulnerability risks around the world



Source: EIB Economics Department. See Annex.

None of the countries in the Western Balkans or Turkey are among the most vulnerable, but Albania, Bosnia and Herzegovina and Serbia fall into the intermediate vulnerability category. In the Southern Neighbourhood, one country, Lebanon, is in the highest vulnerability group, but most of the others have intermediate vulnerability. Most of the countries in the European Union's Eastern Neighbourhood and Central Asia (ENCA) region are in the intermediate vulnerability group, with the poorest two, Kyrgyzstan and Tajikistan, falling into the highest vulnerability category.

Outside the European Union's immediate neighbourhood, sub-Saharan Africa, the Caribbean and the Pacific states are the most vulnerable regions. Around half of the countries in Africa, the Caribbean and the Pacific are among the most vulnerable, with almost all of the remainder falling into the intermediate vulnerability category. Latin America and Asia each have a small number of countries in the highest and lowest vulnerability groups, while most of the others exhibit intermediate vulnerability. This reflects the diversity of both regions, which are predominantly middle-income areas, but also contain both low- and high-income countries.

THE POWER OF A DIVERSE ECONOMY

Heavy dependence on particular types of revenue is a strong driver of COVID-19 vulnerability. Less-diversified economies are at high risk when they are hit by a crisis such as COVID-19. The most vulnerable group to COVID-19 includes a number of countries that are dependent on oil exports or highly reliant on tourism.

The prices of most non-agricultural commodities have plummeted, with gold being the main exception, and oil-exporting countries have been hurt particularly badly. The ENCA region has the greatest proportion of countries in the highest vulnerability group in terms of commodity dependence, as shown in Figure 3, but there are significant numbers of commodity-dependent countries in all regions. Note that the importance of this vulnerability factor may be understated for poorer countries. Data for a number of these countries are missing or incomplete, despite efforts to compensate for these problems, as detailed in the Annex. In addition, the weaker average capacity of economic systems in poorer countries can magnify how a drop in export revenues impacts economic stability. For example, commodity exports make up an estimated 14% of gross domestic product (GDP) in Nigeria, suggesting the country is at much lower risk than many high-income oil exporters, such as the United Arab Emirates. However, Nigeria has a very poorly functioning tax system, with tax revenues accounting for just 3-4% of GDP, and its ability to generate revenue from sources other than oil is very weak. As a result, oil accounts for at least half of Nigeria's fiscal revenues. The crash in oil prices has therefore forced Nigeria to lower its 2020 budget substantially and seek support from the International Monetary Fund for the first time since 2000.

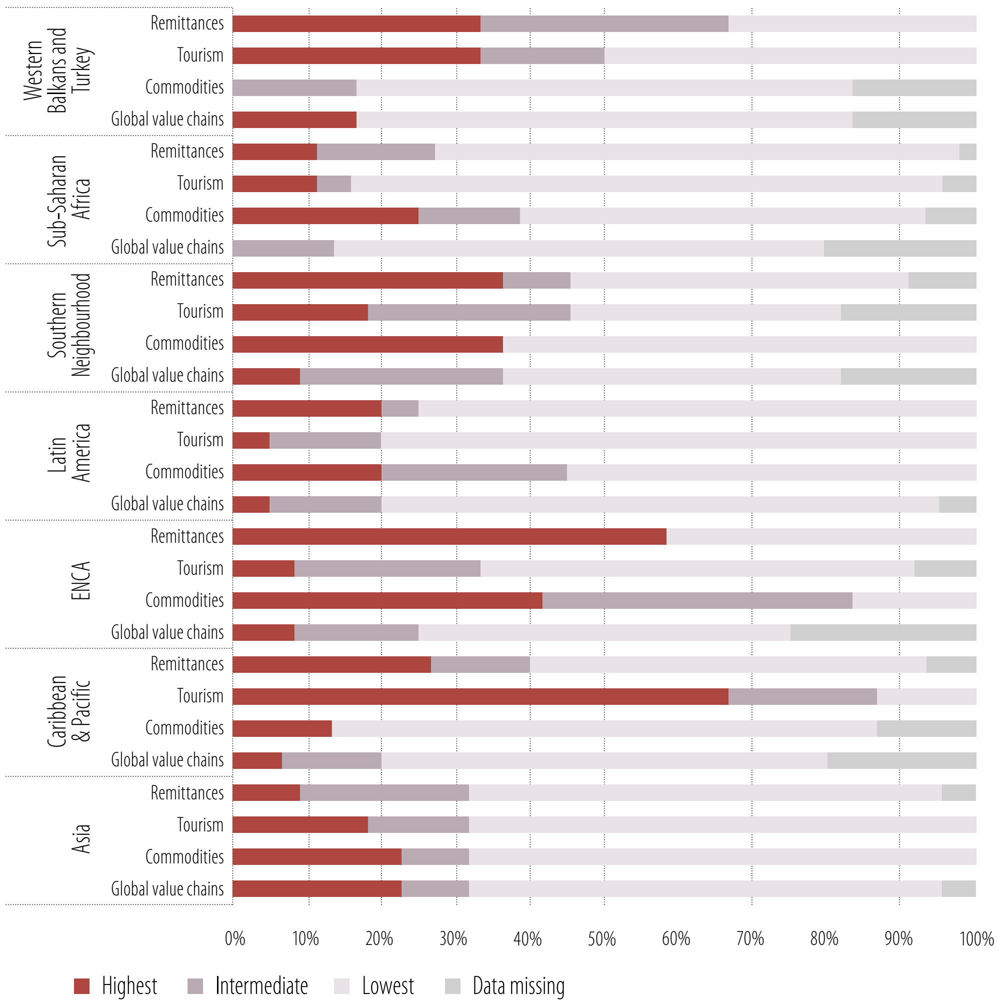
Countries whose economies rely heavily on tourism face elevated risks. The pandemic and restrictions on the movement of people have all but wiped out tourism in many countries, and a global recession is expected to diminish tourist revenues long after restrictions are removed. A number of the affected countries are very highly exposed, deriving up to 60% of their GDP from tourism. Dependence on tourism revenue is a key driver of vulnerability among the Caribbean and Pacific countries with over two-thirds ranking among the most vulnerable to drops in tourism, and only Trinidad and Tobago and Papua New Guinea in the lowest vulnerability group. At least five countries in the region generate more than one-third of their GDP from tourism. In the Western Balkans, Albania, Bosnia and Herzegovina and Montenegro fall into the highest vulnerability group for declines in tourism, remittance receipts or both. In the ENCA region, Jordan and Lebanon are in the highest vulnerability group for a contraction in tourism. Morocco, Tunisia and Egypt are judged to be at intermediate risk. Several countries across Asia, Latin America and sub-Saharan Africa are highly or moderately dependent on tourism. As with commodity revenues, underlying weaknesses in the economic system could magnify how poorer countries are impacted by a drop in foreign exchange revenues resulting from collapsing tourism receipts.

Countries whose manufacturing sectors rely on inputs produced abroad may be more vulnerable if there are lockdowns and curfews where these offshore production sites are located. Of the Western Balkan countries, only North Macedonia belongs to the group with the highest exposure to global value chains (Figure 3), and Turkey falls into the lowest vulnerability group based on the data available. Only 20% of countries in Latin America and 15% in sub-Saharan Africa are in the highest or intermediate vulnerability group for global value chains.

Remittances were a source of support during previous economic crises, but money sent back to countries of origin is expected to fall by more than $100 billion in 2020, according to the World Bank, heightening the economic vulnerability of countries that rely on this form of revenue. A number of Caribbean and Pacific countries will be badly affected, exacerbating the shock already sustained from the fall in tourism. Tonga, which derived 41% of its GDP from remittances in 2019, has the world's highest exposure. Several countries in the ENCA region are among the most vulnerable to drops in remittances (mainly from Russia). This includes Kyrgyzstan, where remittances account for at least a third of GDP. In the Southern Neighbourhood countries, almost 40% are in the highest vulnerability group. Remittance dependence appears less widespread in Asia, Latin America and sub-Saharan Africa, although it is an important source of revenue for many countries in these regions too. Note that informal remittances are generally not reported and several studies suggest a higher incidence in Latin America and sub-Saharan Africa than in other regions, meaning that their vulnerability to a drop in remittances is probably underestimated.

Figure 3

Economic structure and vulnerability (vulnerability level, percentage of countries)



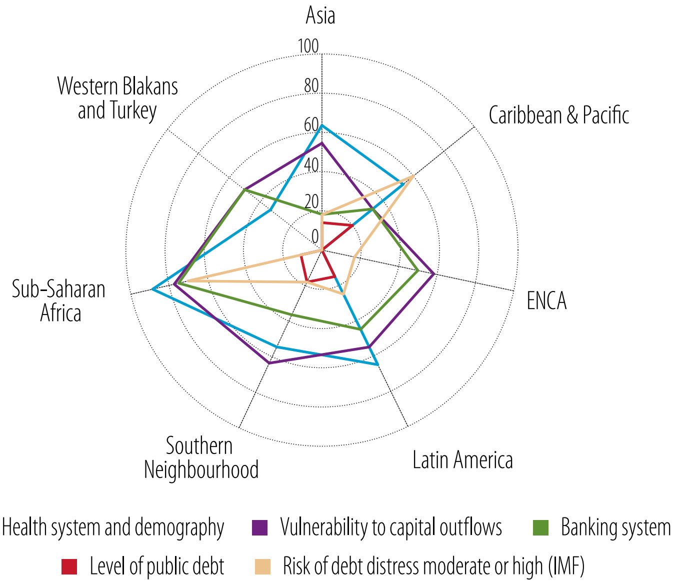
Source: EIB Economics Department. See Annex.

HEALTHCARE AND ECONOMIC SYSTEMS

The resilience of a country's economic system and the quality of its healthcare are key factors in its vulnerability to COVID-19, as shown in Figure 4.

Figure 4

Vulnerability of economic systems and healthcare sector (percentage of countries in the highest vulnerability group)



Source: *EIB Economics Department. See Annex.*
Note: *Debt distress is based on IMF debt sustainability analyses and is not available for high-income countries.*

Resilience in the European Union's neighbourhood varies widely. The Western Balkan countries face a challenging situation in the healthcare sector, with all falling into the highest or intermediate vulnerability category for this variable. Another factor is that their populations are beginning to age. Bosnia and Herzegovina is the only country in the most highly exposed group to capital outflows. The banking systems in the Western Balkan countries are more vulnerable to a protracted crisis, with the risk particularly high in Albania, Bosnia and Herzegovina and Montenegro. However, they are less likely to fall into the highest risk category for public debt. The vulnerability of ENCA and Southern Neighbourhood countries is largely driven by their banking systems and the risk of unmanageable capital outflows. However, healthcare in most ENCA countries is relatively well developed. Even low-income countries such as Kyrgyzstan and Tajikistan are in the lowest risk category for the healthcare sector. By contrast, more than half of the countries in the Southern Neighbourhood fall into the highest vulnerability category for this risk component.

The weak healthcare and economic systems in sub-Saharan Africa and the Caribbean and Pacific countries make it harder for them to fight problems such as the COVID-19 pandemic. The lowest-income countries have disproportionately young populations, which should lower their vulnerability to health impacts compared to higher-income countries. However, this youth factor does not offset the lower capacity of most of the healthcare systems in sub-Saharan Africa and Latin America to handle a large number of COVID-19 cases. Although a relatively small proportion of these regions' countries are above the public debt-to-GDP threshold that would put them into the highest vulnerability category, they in reality have far less capacity to cope with public debt than their peers in other regions. This is reflected in the relatively high proportion deemed at high risk of debt distress before the crisis, according to the IMF. Across the two regions, 24 states are at high risk of debt distress or currently in debt distress, with a further 16 classified as facing moderate risk. The COVID-19 crisis is already increasing the risk of debt distress. The need to address the healthcare and economic impacts of COVID-19 has driven up expenses, while a slowing economy and falling commodity prices have drastically cut revenues for many countries. At the same time, those that access international capital markets are facing increased yields and some have already lost access to market funding. A relatively small number of Caribbean and Pacific countries are in the most highly exposed group to the risk of capital outflows, but a large number of sub-Saharan African countries are in the highest or intermediate exposure group based on their basic balances.

Resilience in Latin America and Asia is mixed. A significant number of countries in Latin America and Asia are in the highest vulnerability group based on the capacity of their healthcare systems and their vulnerability to capital outflows. Banking systems, however, are more likely to be resilient in Asian countries – only 18% fall into the highest vulnerability group. Few countries in either region fall into the highest vulnerability category based on the ratio of public debt to GDP. However, the IMF lists Afghanistan, Argentina, Bhutan, Ecuador, Guyana, Laos, the Maldives, Nicaragua and Venezuela at a high or moderate risk of debt distress.

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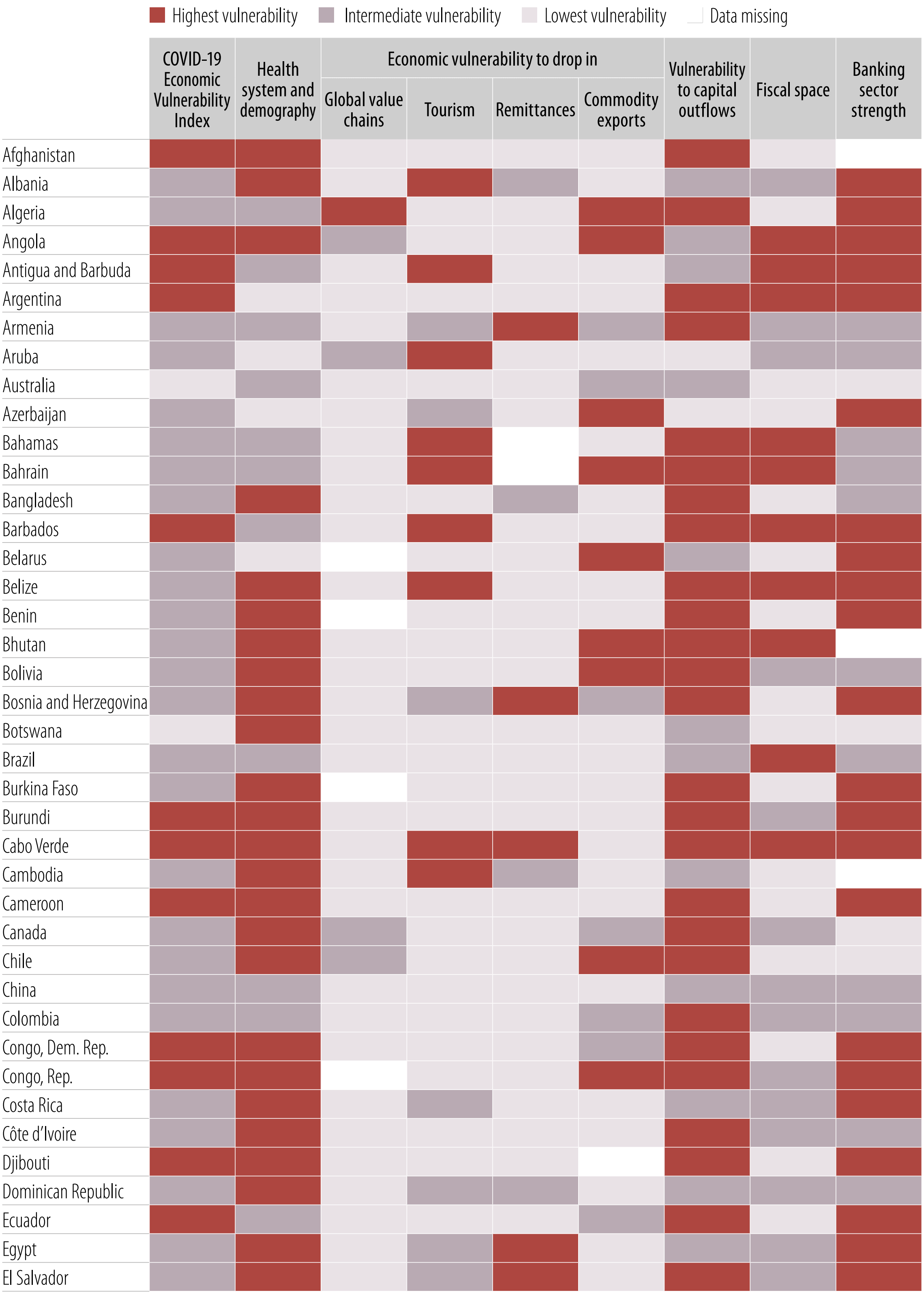

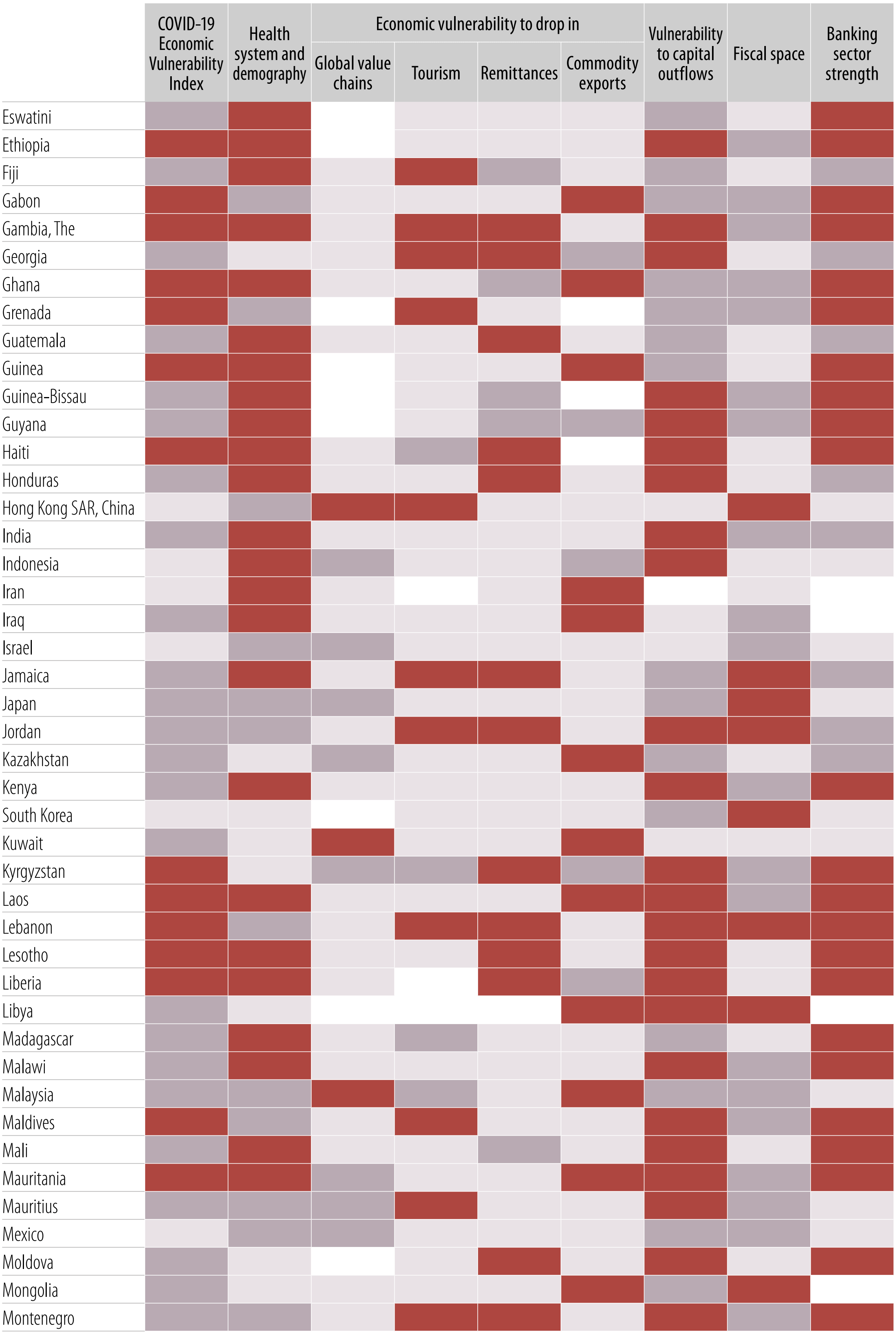
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Health system and demography
Economic vulnerability to drop in
Global value chains
Tourism
Remittances
Commodity exports
Vulnerability to capital outflows
Fiscal space
Banking sector strength
Eswatini
Ethiopia
Fiji
Gabon
Gambia, The
Georgia
Ghana
Grenada
Guatemala
Guinea
Guinea-Bissau
Guyana
Haiti
Honduras
Hong Kong SAR, China
India
Indonesia
Iran
Iraq
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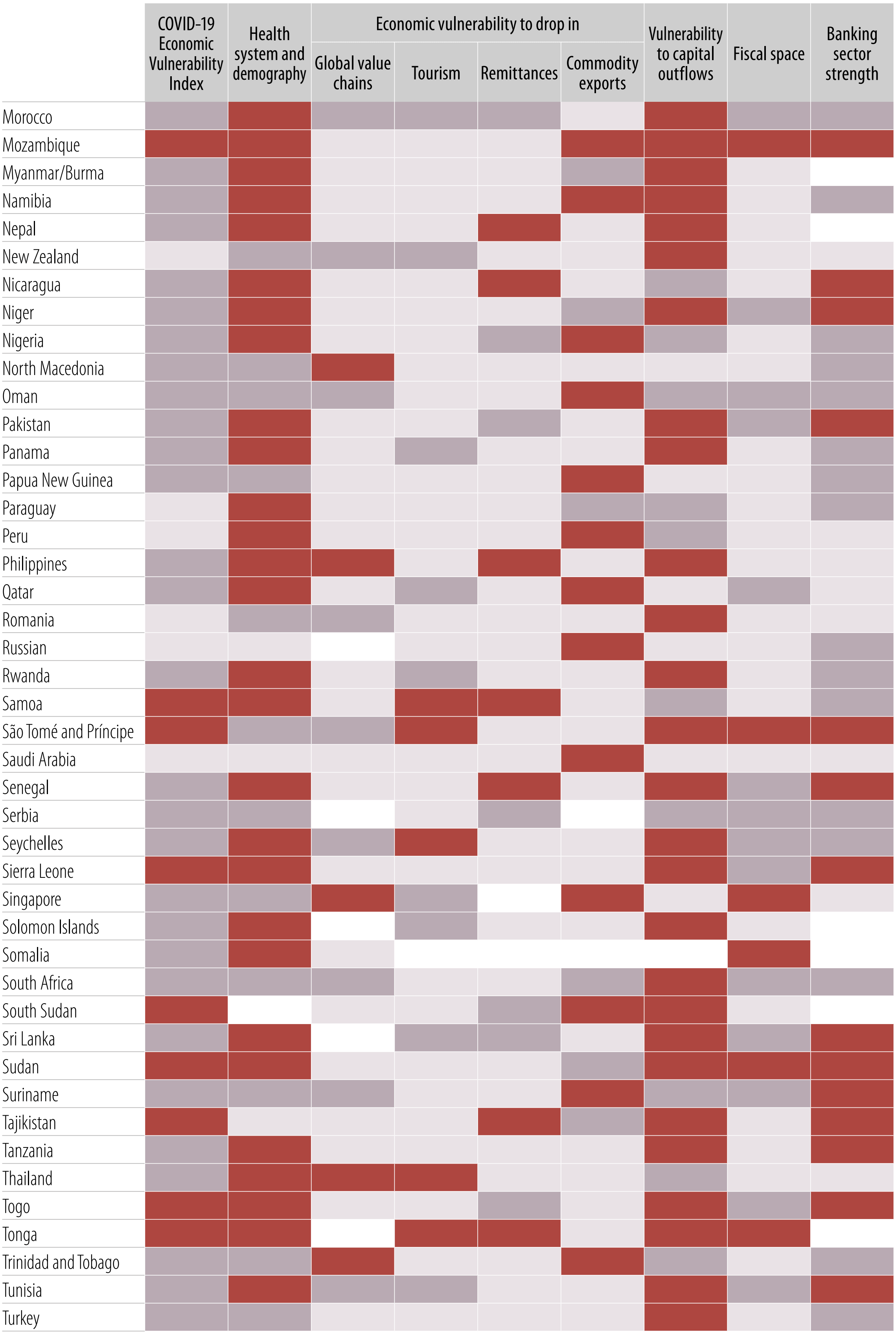
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Mozambique
Myanmar/Burma
Namibia
Nepal
New Zealand
Nicaragua
Niger
Nigeria
North Macedonia
Oman
Pakistan
Panama
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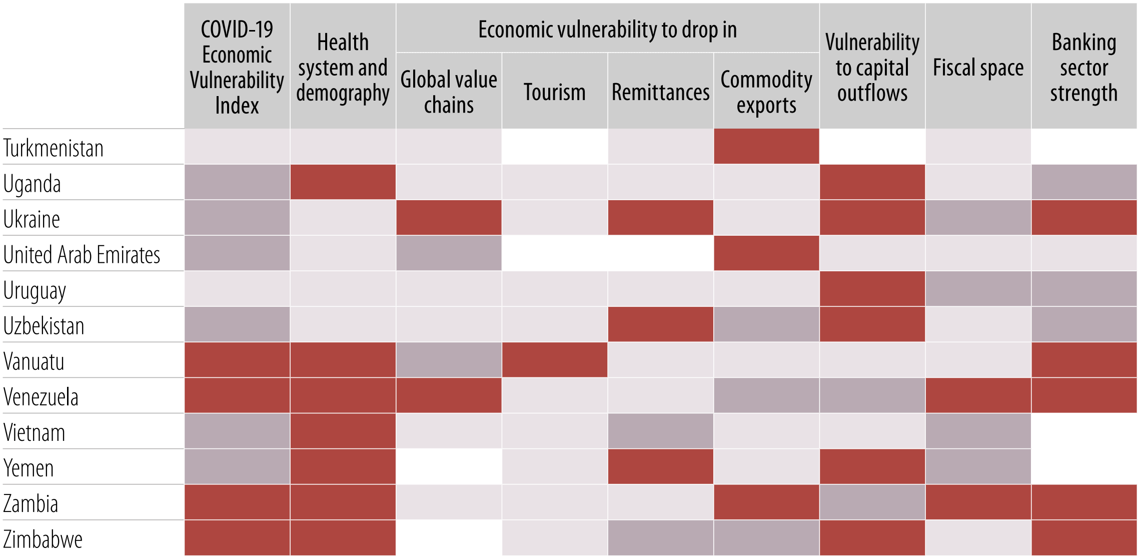

Source: EIB Economics Department. See Annex.

ANNEX: TECHNICAL DETAILS

Variables used in the vulnerability index:

I. **Quality of healthcare and age of population:** physicians (per 1 000 people), hospital beds (per 1 000 population) and population aged 65 and over (percentage of total population).

II. **Global value chains:** global value chain participation as a percentage of GDP.

III. **Tourism:** international tourism receipts as a percentage of GDP.

IV. **Money sent back to country of origin:** personal remittances received as a percentage of GDP.

V. **Exports:** of fuels, metals and ores as a percentage of GDP. For countries classified as commodity exporters based on the United Nations Conference for Trade and Development's (UNCTAD) State of Commodity Dependence, missing data were replaced with the cross-sectional median value for the relevant commodity exporter group (fuels or metals and ores). For other countries, missing data were not replaced.

VI. **Vulnerability to capital outflows:** basic balance as a percentage of GDP (current account balance plus net foreign direct investment as a percentage of GDP).

VII. **Government:** debt as a percentage of GDP and debt distress risk (for low-income countries, a dummy variable that takes the value of 1 for a low debt distress risk classification by the IMF, 2 for moderate risk and 3 for high risk and debt distressed economies).

VIII. **Banking risk:** Banking Industry Risk (BIR) score (1=least risky, 9=most risky).

Data on global value chain participation came from the UNCTAD EORA database. The IMF's classification of debt distress risk based on the most recent debt sustainability analyses was used, and to identify commodity exporters, the UNCTAD State of Commodity Dependence's classification was used. Other indicators came from the World Bank.

A score is calculated for each variable listed in the columns on the index. For variables where higher values indicate lower vulnerability (for example, the basic balance or number of doctors per head of population), we calculated the distance of the variable from the sample maximum and divided that distance by the difference between the sample maximum and minimum. For variables where lower values indicate lower vulnerability (for example, international tourism receipts or commodity exports as a percentage of GDP), we calculated the distance of the variable from the sample minimum and divided that distance by the difference between the sample maximum and minimum. The higher the score in each column of the index, the higher the vulnerability of the country to the COVID-19 pandemic.

The score for the quality of healthcare and age of population equals the average scores for physicians (per 1 000 people), hospital beds (per 1 000 population) and population aged 65 and over (percentage of total population). The score for government debt is equal to the maximum of the scores for public debt as a percentage of GDP and for the debt distress risk dummy. An aggregate indicator of the impact on GDP was constructed as the maximum of the scores for global value chains, tourism, remittances and commodity exports, to reflect the fact that a country can be severely impacted, even if only through just one of the columns in the index. The aggregate COVID-19 Vulnerability Index equals the average of the scores for the quality of healthcare and age of the population, the impact on GDP, government debt and banking risk. Higher indicator values mean there is higher vulnerability to COVID-19.

For easier reading, we constructed a heat map of the various countries per indicator. The values of the different factors are coloured as follows:

The factor values were classified based on the following thresholds:

Overall economic vulnerability to COVID-19: (lowest: 0-40, intermediate: 40-60 and highest: >60)

Quality of healthcare and age of the population: (lowest: 0-50, intermediate: 50-60 and highest: >60)

The remaining economic factors in the index are scored as follows:

- **Tourism, remittances, commodity exports**
  (lowest: tourism, remittances, commodity exports <5% of GDP, intermediate: 5-10% and highest: >10%)

- **BIR**
  (lowest: 1-4, intermediate: 5-6 and highest: 7-9)

- **Global value chain**
  (lowest: global value chain participation <10% of GDP, intermediate: 10-20% and highest: >20%)

- **Government debt**
  (lowest: public debt >50% of GDP, intermediate: 50-90% or moderate risk of debt distress and highest: >90% or high risk of debt distress)

- **Vulnerability to capital outflows**
  (lowest: basic balance >5% of GDP, intermediate: 0-5% and highest: <0%)

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