

# Global Economic Diversification Index 2024

Exploring the Impact of  
Digital Trade on Economic  
Diversification



Global  
**Economic  
Diversification  
Index**

**WORLD  
GOVERNMENTS  
SUMMIT 2024**

in partnership with

كلية محمد بن راشد  
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# Executive Summary

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The pursuit of economic diversification is a catalyst for equitable growth, sustainable development and a key driver for achieving global economic resilience. For countries dependent on commodities or a limited set of products or services, economic diversification is a gradual and transformative process.

Diversification for commodity producers leads to greater macroeconomic stability, more sustainable growth patterns, enables a gradual move to higher value-added economic activities (from over-dependence on primary commodities) and helps lower trade concentration (i.e., increase a country's ability to export a wider set of products to a larger set of trade partners).

**This requires active and productive private sector participation, and in parallel, governments need to rollout effective policy reforms (often structural) and undertake productive investments – while diversifying the government revenue base by raising non-commodity-related revenues.**

The Global Economic Diversification Index (EDI) continues to provide a universal quantitative measure of the state and evolution of the economic diversification of countries going back to the year 2000, based on publicly available indicators, data and information. The 2024 edition of the Global EDI expands the coverage to a total of 112 countries (7 additional countries compared to the previous EDI edition) owing to improved data availability.





The United States, China and Germany retain the top 3 ranks in this year's EDI, based on latest available global datasets for the years between 2000 and 2022. The scores of the top 10 countries are closely clustered with small margins between scores, indicating a strong level of economic diversification within these nations. Western European nations account for almost two-thirds of the top 20 highly-ranked nations; and while 26 of the top 30 nations are high income countries, three upper-middle income countries (China, Mexico, and Thailand) and one lower middle-income nation (India) appear in the top 30 diversified economies.

At the other end of the spectrum, however, the diversification process has been long and slow. Four nations—three from Sub-Saharan Africa, alongside Kuwait from the Middle East and North Africa region (MENA)— remain in the bottom 20 ranks of the EDI over the studied period. However, the share of MENA economies in the bottom 20 ranks fell to just 10% in 2022 from 25% in the year 2000. Meanwhile, the number of Sub-Saharan African nations among the lowest 20-ranked nations grew to 13 in the year 2022, from nine in 2000. Additionally, in the aftermath of COVID-19, it may be more challenging for nations with lower rankings to improve their positions, considering the prolonged economic damage and reduced output caused by the pandemic, compounded by their already constrained fiscal capacities and pre-existing debt burdens.

# Introducing the EDI+: Measuring the Influence of the Digital Economy on Economic Diversification

As the post-pandemic global economy slowly recovers, it is contending with a lasting structural change: The accelerated adoption of digital technologies across economic activities, which has resulted in societal gains such as higher labour force participation rates and productivity gains, among others. This is especially visible in nations where the basic digital infrastructure was already in place. Despite challenges in data availability in this realm even among advanced economies, this edition of the EDI includes indicators that aim to capture parts of the growing global influence of the digital economy on economic diversification. Specifically, this edition of the EDI includes three digital-trade specific indicators for the first time in the Trade sub-index.


Using this updated list of indicators and based on availability of data for most countries covered, a revised Trade+ (“Trade-plus”) sub-index is calculated for the years 2010–2022, for a subset of 106 countries. The revised Trade+ sub-index is also used to calculate a digital-trade augmented EDI+ (“EDI-plus”) score and ranking. Other than the Sub-Saharan Africa region, all regional groups improved their Trade+ sub-index scores in 2020–2022. **While the top four ranked countries remain the same in both the EDI’s Trade and Trade+ sub-indices, of the bottom 20-ranked nations in the original Trade sub-index, the scores of 13 economies are worse-off when digital-trade indicators are included in the calculation of the index.** This finding is in line with what other studies have suggested, where delayed adoption and existing digital divides can widen, leading to deteriorating outcomes and prospects, especially in the absence of an acceleration of reforms. In contrast, South Asian economies show a significant upwards jump in Trade+ scores over time, which is also reflected in the EDI+ scores, indicating larger influence of digital trade on the diversification of these economies.



A clear outcome across countries is that digital economy investments improve trade diversification, notably through the ability to export services. For commodity producers and exporters, the findings indicate that they can strongly improve their overall economic diversification, represented by the EDI and trade rankings, through the investment in (and adoption of) new digital technologies and services. Additionally, country geographical size does not appear to be an impediment to economic diversification and scoring high in the EDI. For example, some highly ranked nations such as Singapore, Ireland and Netherlands among others, which are relatively small economies, score high both in the EDI and EDI+.

Commodity producing nations are vulnerable to volatility in commodity prices. Prices can be more or less volatile depending on the type of commodity. For instance, price of oil has been more volatile than the price of copper, wheat or cotton and other commodities, as shown by historical data. In the EDI sample of countries, more than 50% of the commodity dependent nations are reliant on fuels. risk of being left with lower valued or stranded assets. The demand and supply shocks that occurred during the pandemic and those caused by ongoing wars, in addition to the planned energy transition to net-zero emissions, increase the urgency for fossil fuel exporters to diversify – else these nations run the risk of being left with lower valued or stranded assets.

Sub-Saharan Africa's commodity exporters posted the lowest EDI scores over time, with the 2020-2022 average score falling below the 2012-2015 period. This not only underscores the pandemic's negative impact on diversification but also the divergent paces of recovery.

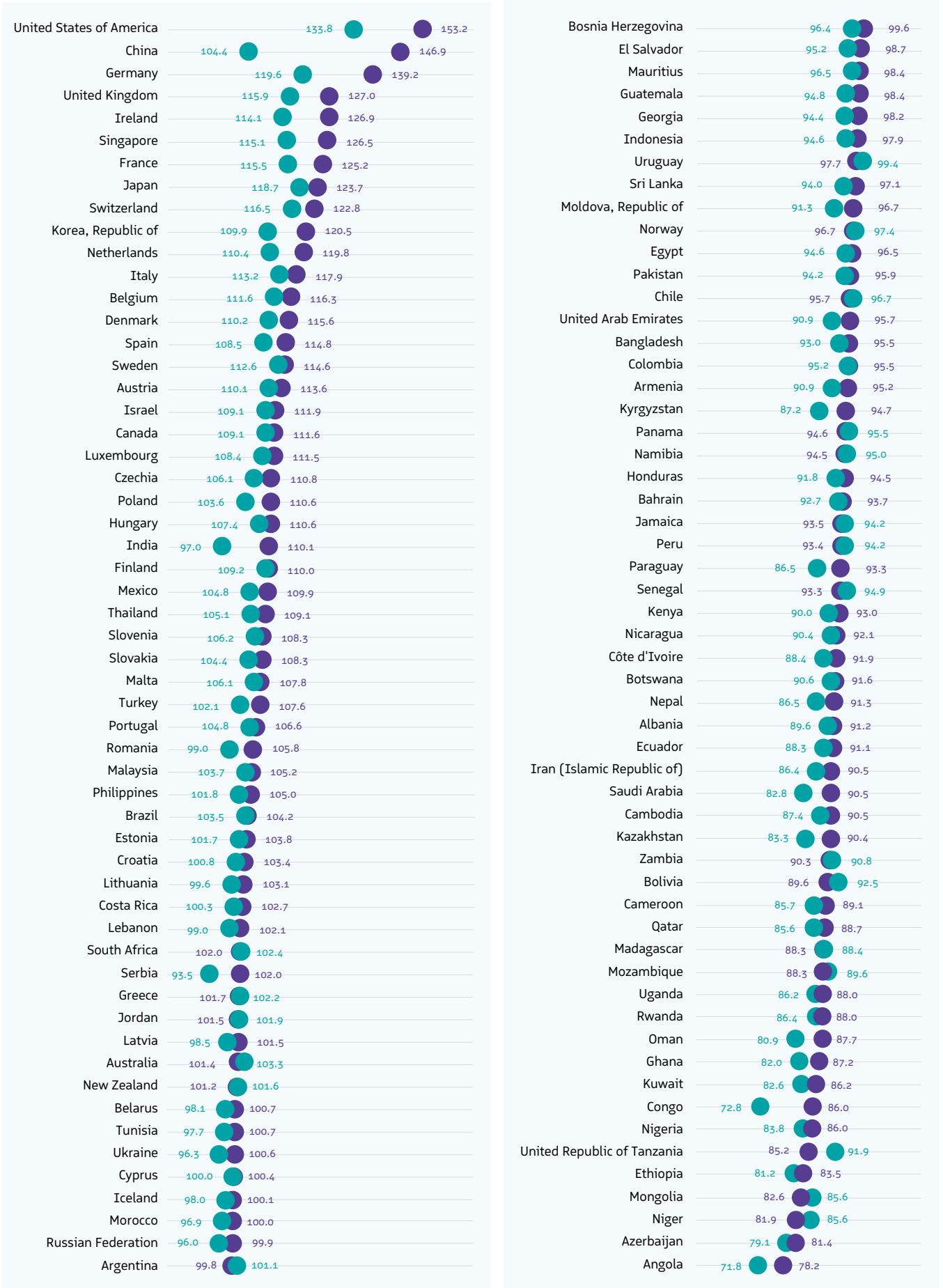


However, fuel exporters (i.e. not exporters of any other commodities) both in the MENA and Eastern Europe & Central Asia regions reported a slight improvement in the 2020-2022 period versus pre-pandemic scores. The report also finds that for most countries, lower share of resource rents as a percent of GDP coincide with higher EDI scores and vice versa, however, it is important to highlight that the relation is one of correlation and not causation. Among the Gulf Cooperation Council (GCC) countries, the UAE and Bahrain have achieved higher EDI scores compared to their peers, while Saudi Arabia and Oman have both gained over 10-points in 2020-2022, compared to their EDI score in the year 2000. **Improvements in GCC scores have resulted from the implementation of reforms at a much more aggressive pace after the pandemic. This includes incentives to invest in new technology sectors, plans to broaden tax bases, trade liberalisation through free trade agreements and improvements to regulatory and business environment and facilitating rights of establishment and labour mobility.** These steps have contributed to supporting diversification efforts and providing long-term economic resilience.

Lastly, the report highlights an increasingly important discussion related to climate change and the vulnerability of commodity-dependent nations. As countries adapt to and mitigate climate change risks, energy transition and “green economy” investments, such as renewable energy, can play a key role in transforming economies and output structures. Fossil fuels are likely to remain in the global energy mix for decades, but a potential sustained decline in demand necessitates the rollout of diversification policies at the earliest. With many oil-exporting nations in the Middle East for example, already diversifying energy sources, potential export of clean energy from these nations could widen their export base, both in terms of products and trade partners. Furthermore, regional integration would aid diversification efforts of commodity producers and provide a massive opportunity to link with domestic or regional value chains, adding to diversification efforts.

## EDI Scores 2000 vs 2022

● 2000 ● 2022





# Chapter 1

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## Economic Diversification Index 2024





# The Importance of the EDI, its Pillars, and Key Findings

Economic diversification has been a common strategy discussion thread across many commodity producing/ exporting nations. The high volatility of fossil fuel prices and their impact on macroeconomic stability, in addition to the energy transition, and greater Net-Zero-Emissions (NZE) commitments to address climate change objectives and targets (UN COP and related) all require urgent action. For a world still recovering from the pandemic, the Russia-Ukraine war in 2022 emerged as a major shock, especially given that both nations are major commodity producers and exporters<sup>1</sup>.

The sudden interruption of food and natural gas exports due to the war resulted in a massive increase in food and energy prices – raising strategic concerns about food security in general, and diversity in energy sources (and partners) for energy-importing nations.

Furthermore, as energy transition plans are rolled out to fight climate change, there is a higher risk that global demand for fossil fuels will gradually decline, thereby resulting in downside risks to the price of key commodities (such as oil).

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<sup>1</sup> Russia and Ukraine were, prior to the war, among the top five global exporters of barley, sunflowers, and maize, while also accounting for about a third of the world's wheat exports.

Diversification is key for a commodity producing country's economic development: it enables structural transformation i.e., a gradual move to higher value-added economic activities (from over-dependence on primary commodities) and helps lower trade concentration (i.e., increase its ability to export a wider set of products to a larger set of trade partners). While this requires active and productive private sector participation, the government has a key role to play via effective policy reforms (often structural) and productive investments – the latter to be financed by raising non-commodity-related revenues.

Despite policy interest in economic diversification, no single agreed upon measure or index existed to measure the state and evolution of the economic diversification of countries. Moreover, much of the literature and empirical evidence on economic diversification focused on trade diversification alone. To bridge this gap, the first edition of the Global Economic Diversification Index (EDI), published in 2022 covered 90 nations across the 2000–2019 period and included as its key pillars, metrics related to the diversification of trade, output, and government revenue. This was followed by a second edition in 2023, which expanded coverage to 105 countries, including the influence of the global pandemic. The results of the second report found that the top 10 ranked nations in the EDI remained the same as those in the first edition, suggesting that well diversified economies can weather shocks such as the Covid-19 pandemic better and remain more resilient. This report expands the coverage of countries further, to a total of 112 countries (7 additional countries compared to the previous EDI edition) owing to improved availability of data.<sup>2</sup>

This report examines a wide spectrum of commodity dependent nations, in addition to the subset of oil and gas resource-based economies. Commodity dependent nations have been identified using two common measurements: a country is resource dependent if over 60% of its total merchandise exports in value terms consist of natural resources<sup>3</sup> (UNCTAD; note that the IMF/World Bank refer to a minimum threshold of 25%) and the ratio of natural resources rents to GDP is above 10 percent<sup>4</sup>.

<sup>2</sup> The newly covered countries are Armenia, Belarus, Bosnia, Cyprus, Ethiopia, Mozambique, Nicaragua, and Tanzania.

<sup>3</sup> Share of agricultural products or fuels (by SITC) in total merchandise.

<sup>4</sup> The list of commodity dependent nations is specified in the Appendix.



Furthermore, these nations' tax revenues as a percentage of GDP fall mostly below 20 percent.

The EDI is designed to be 'reproducible research', solely based on publicly available indicators, data and information. The set of indicators and sub-indicators of economic diversification has been defined based on research, analysis and the existing literature on economic diversification (detailed in the first edition of the EDI)<sup>5</sup>. It should be noted that the EDI is based solely on quantitative indicators, with no qualitative survey or perception indicators, thereby providing a quantitative benchmark and ranking of the economic diversification of countries. The full list of indicators and its metadata is detailed in the Appendix.

The EDI score for a country is arrived at by first calculating the scores of the 3 key sub-indices:



The output  
sub-index



The trade  
sub-index



The revenue  
sub-index

Each of these sub-indices consists of multiple underlying indicators. By using the principal components analysis (PCA) method, a dimensionality reduction technique, a sub-index score is obtained for each of the three dimensions. This produces one value for each of the three sub-indices. The averaging of these three values –by taking their simple arithmetic mean– produces the final overall EDI score for the country. Taking the simple arithmetic mean of the three sub-indices to produce the final score implies that equal weightage – or importance – is given to each of the trade, government revenue and output pillars in their contribution to economic diversification.

This is the simplest and most transparent approach, as there is no a priori reason for believing that any one of the three sub-indices is relatively more important to the overall measurement of economic diversification than the others. The Appendix section expands further on the methodology.

<sup>5</sup> See <https://EconomicDiversification.com/methodology/>

There are no one-size fits all set of policies for diversification. The urgency of policy reform would depend on a country's level of potential depletion of the non-renewable commodities (or the risk of stranded assets for oil-production nations in the backdrop of COP commitments) while the pace of reform would be affected by factors such as the effectiveness of its institutions and governance, and the dynamism of its private sector among others. This is where an index like the EDI can provide policy support.

## The EDI provides a basis for countries to compare themselves:



with their regional and local peers

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with countries with similar resource endowments

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internationally with more diversified countries

The EDI allows oil-exporting and other commodity exporting countries to measure their existing state of economic diversification and provide insight on the factors that can foster or, alternatively, impede diversification. It also allows countries to visualize their global ranking on each measure of diversification (production, trade and government revenue), across regional and income groups and within their natural resource grouping (e.g., OPEC). The EDI also allows countries to measure and assess their diversification progress over time (over the period 2000 to 2022), given that diversification, like economic development, is a gradual, evolutionary, transformation.

## Main Findings

**Over two decades, the top ranks in the Economic Diversification Index (EDI) have been limited to a small sub-set of developed nations.** The United States, China and Germany have held on to their top 3 positions for a decade, which remains the case in 2022 (Table 1.1). The gap between the top-ranked US and second ranked China has narrowed post-COVID (from a 20.9-point difference in 2019 to a 6-point difference in 2022). As in the previous editions, nations ranked 4th to 10th have very small margins between their scores: A 6.6-point difference between them in 2022 highlights the strength of diversification among the highly ranked countries.

Table 1.1. Top 20 nations, EDI

	2000	2004	2008	2012	2016	2019	2022
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20							

- United States
- Germany
- Japan
- Switzerland
- Luxembourg
- United Kingdom
- France
- Singapore
- Italy
- Czechia
- Ireland
- Sweden
- Netherlands
- China
- Hungary
- South Korea
- Belgium
- Denmark
- Finland
- Austria
- Israel
- Canada
- Spain

Eight of the top 10 ranked nations remain consistently in that group over the years (in bold in Table 1.1), while three other nations vary from year to year: Italy and Sweden dropped off the list towards the late-2000s; more Asian nations have joined the list over time, including South Korea (a major tech exporting nation) and China (world's top exporting nation) which makes an appearance in the top 10 every year since 2007, boosted by its joining the WTO (China ranked 28 in 2000). Singapore and Switzerland have benefitted not only from the large-scale financial services sector operations (as part of a thriving services sector whose share stood at around 70% of GDP over the years) but also from the production and export of high value-added manufacturing products. Ireland's generous corporate tax regime has attracted large multi-national companies that support the economy via employment and taxes, thereby leading to output diversification and higher levels of growth<sup>6</sup>. Furthermore, the appearance of smaller nations in the highly diversified list also underscores the fact that size is not a limitation for greater diversification.

Widening the list to include the top 20 shows the dominance of Western European nations (almost two-third of the total) while East Asia & Pacific countries have increased their presence to four nations from three in 2000. Hungary from the Eastern Europe and Central Asia group appeared in the top 20 list until 2016 after which the Czech Republic was the only representative in 2019; in 2022, the Czech Republic and Hungary were ranked 21 and 23, respectively.

**In 2022, twenty-six of the top 30 nations were high-income, alongside three upper-middle nations (China, Mexico, and Thailand) as well as a sole lower-middle income representative (India, at 24th globally).**

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<sup>6</sup> Questions have been raised whether Ireland's national income data correctly accounts for such MNCs assets and profits, given that the incomes are often sent to the headquarters or shell companies abroad. For the EDI, Ireland's data are included as published by public sources, based on internally agreed common standards.

Table 1.2. Bottom 20 nations, EDI

	2000	2004	2008	2012	2016	2019	2022
1							
2							
3							
4							
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18							
19							
20							

- |            |              |            |               |          |
|------------|--------------|------------|---------------|----------|
| Ghana      | Saudi Arabia | Oman       | Zambia        | Congo    |
| Qatar      | Kuwait       | Angola     | Cote d'Ivoire | Rwanda   |
| Nigeria    | Ethiopia     | Iran       | Uganda        | Niger    |
| Kazakhstan | Azerbaijan   | Bolivia    | Madagascar    | Mongolia |
| Kyrgyzstan | Cambodia     | Albania    | Paraguay      | Cameroon |
| Zambia     | Nepal        | Mozambique | Tanzania      | Botswana |
| Rwanda     | Ecuador      |            |               |          |

At the other end of the spectrum, however, the diversification process has been long and slow. Four nations – three from Sub-Saharan Africa and Kuwait from the Middle East and North Africa – continue to remain in the bottom 20 ranks of the Economic Diversification Index over the period (see Table 1.2). Saudi Arabia and Qatar graduated out of the bottom 20 nations starting from 2015, though 2022 saw Qatar return to the bottom of the list, given lower rankings in both the trade (increase in fuel exports share among others) and revenues sub-index. Not only are all these bottom 20 countries commodity-exporters, but most countries (other than those of the GCC, Azerbaijan and Kazakhstan) are also lower-middle or low-income nations, begging the question whether income levels are a major deterrent to diversification. **In this context, it is also significant to note that there is a link between good governance (and low corruption), growth, and economic development, especially in resource-rich countries<sup>7</sup>.**

The share of MENA nations in the bottom 20 ranks fell to just 10% from one-fourth in 2000. At the same time, Sub-Saharan African nations have increased their presence to two-thirds of the total from around 45% in 2000. If the lowest 30-ranked nations are considered, just over 50% are from Sub-Saharan Africa and bulk of them are low-income or lower-middle income (at 7 and 14 respectively). High-income nations are also represented in the bottom 30 list in 2022: this included four GCC nations (Kuwait, Oman, Qatar and Saudi Arabia) and Kazakhstan.

Many of these low ranked nations are characterized by high levels of economic concentration and are often small or geographically remote and/ or landlocked. Separately, the emergence of other countries from the bottom quartiles to become more diversified underscores the potential of reforms. Saudi Arabia, for example, has made significant improvements in both trade and revenue diversification, but despite its policy reforms and significant investments, the country remained in the bottom 25th percentile last year, highlighting that sustained diversification takes time.

Table 1.3. Top 10 average & lowest 10 average EDI scores

	2000	2004	2008	2012	2016	2019	2020-22
Top 10 Average	117.5	119.7	123.9	125.8	127.3	130.5	129.6
Bottom 10 Average	80.0	81.6	80.8	82.1	85.7	88.3	84.0

While the average unweighted EDI scores increased overtime (Table 1.3), the COVID-affected 2020 resulted in a small brake in the progress. In the two years since, recovery has been underway: however, the divergent recovery paces have meant that the top performers have recovered at a much faster rate, inching closer to pre-pandemic scores than those ranked lowest. In 2022, the average EDI score was 101.3 versus the top and bottom performers scores of 153.2 and 78.2 respectively, showing wide variance across countries. This compares to an average score of 97.6 in 2000 alongside the highest and lowest scores of 133.8 and 71.8 respectively.

**The catch up for lower ranked nations post-COVID will be a tougher ask, given the long-term scarring effects and output loss in addition to their pre-existing their fiscal constraints and debt burdens.**

<sup>7</sup> Sobrinho, N. and Thakoor, V. (2019) find that the governance dividend for countries in Sub-Saharan Africa is two to three times larger than for the average country in the rest of the world—even in regions perceived to have equally weak governance. Improving the region's governance to be on par with the world average is estimated to raise GDP per capita by 1 to 2 percentage points per year.



Table 1.4. Top 10 average & lowest 10 average EDI scores, by region and over time

	2000	2004	2008	2012	2016	2019	2020-22
North America	121.5	122.3	127.4	130.3	132.2	135.0	132.8
Western Europe	109.2	110.6	112.6	112.0	113.4	114.4	114.8
East Asia Pacific	102.6	104.0	104.8	106.7	107.8	108.9	109.0
Eastern Europe & Central Asia	96.5	97.9	99.1	99.8	100.8	101.2	101.2
MENA	93.1	93.5	93.7	95.0	98.5	98.3	98.4
South Asia	92.9	94.8	95.3	96.0	97.1	97.6	97.5
Latin America & the Carribean	95.6	95.4	95.9	96.2	97.3	97.2	96.8
Sub-Saharan Africa	87.7	88.5	88.7	88.9	90.7	89.5	89.3

Least Improvement  Most Improvement

Table 1.4 shows a clear difference in diversification results over time and by region. The overall scores and rankings of the regions hold during the post-COVID recovery: North America tops the table, despite scores declining by 2.2 points in 2020-2022; South Asia, Latin America and Sub-Saharan Africa also post slight declines in their scores compared to 2019. While Sub-Saharan Africa has shown an improvement in scores, it continues to lag other regions through the years – its average score in 2020-2022 is 7.5 points behind Latin America; a massive 43.5 points behind North America. The MENA region, which had been a laggard in the early 2000s, improved its scores to rank

higher than both South Asia and Latin America in the post-COVID period. This is largely because of the accelerated pace of structural reforms and diversification efforts undertaken by the GCC countries.

A further breakdown by sub-indices, however, shows that MENA is outperformed by South Asia in the Trade sub-index and by Latin America in the Revenue sub-index.

# Output, Trade and Revenue Rankings

The EDI comprises three sub-components: Output, Trade, and Government Revenue. Table 1.5 lists the top 10 nations for the year 2022 – ranked for overall EDI, as well as by sub-index.

Table 1.5. Performance by sub-index – top 10 nations, by overall EDI and output, trade and revenue sub-indices (2022)

	Output Sub-index	Trade Sub-index	Revenue Sub-index	EDI (Avg of the 3 sub-indices)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

United States	Denmark	China	New Zealand
Ireland	France	Italy	South Africa
Switzerland	United Kingdom	South Korea	Luxembourg
Singapore	Netherlands	Finland	Croatia
Japan	Norway	Iceland	Hungary
Germany	Sweden	Belgium	

In 2022, in addition to the economies consistently appearing in the top 10 list in the output sub-index (G7 nations including US, Japan, Germany and the UK), services-centric Switzerland and Singapore appear within the top five ranks. These latter countries also have very high readings in the share of

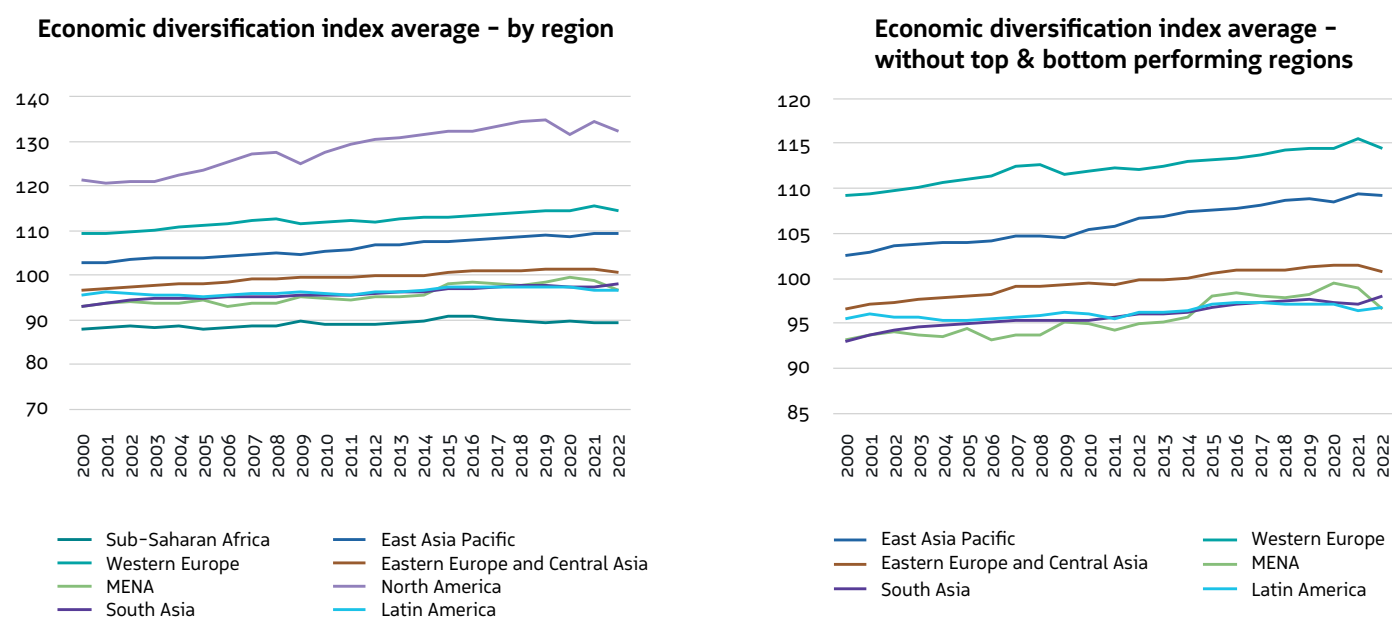
medium- and high-tech manufacturing value added in total manufacturing value added as well as manufacturing value added per capita, as does Ireland. The Output sub-index has a higher loading for services-sector indicators and hence the appearance of services-centric nations ahead of China. In the 2023 edition of

the EDI, China was not part of the top 10 in the output sub-index, given COVID closures and related implications. The Trade sub-index is unsurprisingly dominated by China, the US and Germany. The Netherlands joins the list thanks to the high merchandise trade as a percentage of GDP (188% in 2022<sup>8</sup>, largely exports to other EU nations, and close to Singapore's 212%). The Revenue sub-index rankings are dominated by the Nordic nations that are characterised by high levels of and diversity in forms of taxation and

complementary public spending towards health, education, and social security. The US ranked 56th (in 2022) in the revenue sub-index, with tax and total revenue as percentage of GDP at 19% and 30% respectively versus Denmark's readings of 46% and 54% respectively. To provide another comparison, China's tax revenues as percentage of GDP was less than 20% in 2022 (while in 2000 it was just 13%).

## Regional Performance Over Time

Chart 1.1. Performance of the Economic Diversification Index across regions, 2000-2022



The best and worst performing regions for the EDI and its sub-indices are the North America and Sub-Saharan Africa regions respectively, as seen from Chart 1.1. Overall scores for all regions have shown a reasonable improvement compared to the year 2000. The scores of South Asia, Latin America and the MENA regions have fluctuated around the same band: until the mid-2010s, the MENA region was the relatively lower scoring region, with Latin America slightly ahead of South Asia. But since then, the MENA region has been improving steadily; in the post-COVID years, it outperformed these two regions, except in 2022 when its overall score was dragged down by the output and trade indicators.

<sup>8</sup> This includes re-exports. In 2022, Netherlands' value of re-exports exceeded domestic exports for the first time, according to Statistics Netherlands (CBS). The data indicator merchandise trade as a percentage of GDP was retrieved from the WDI, which in turn sources the data from the World Trade Organization (WTO). The WTO clarifies in its definition that due to the use of the general trade system for recording merchandise trade statistics, re-exports and re-imports are included in total merchandise trade.

Chart 1.2. Performance of the output diversification sub-index across regions, 2000-2022

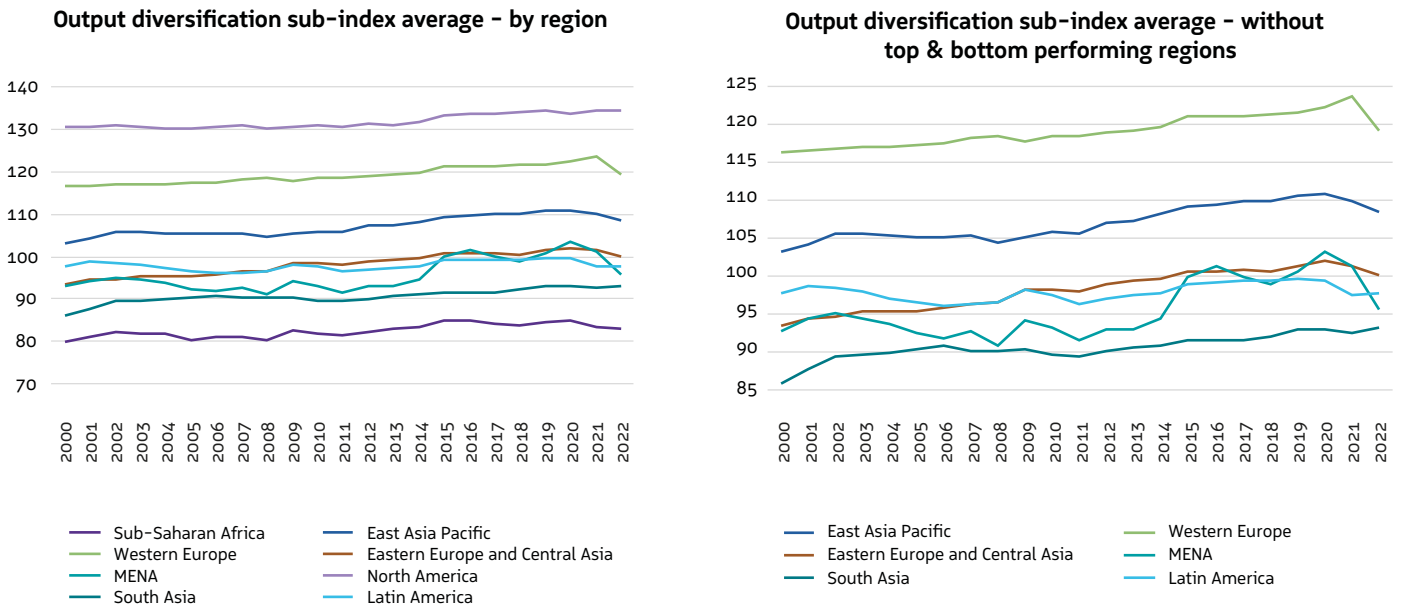
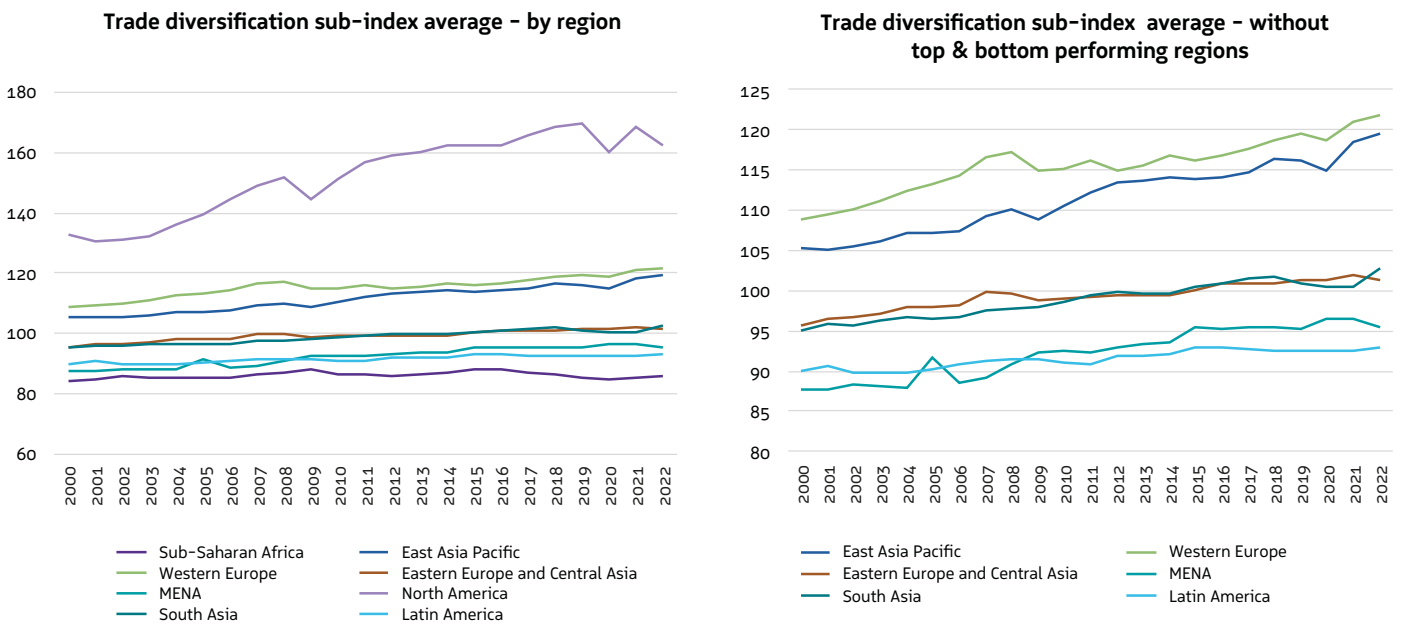


Chart 1.2 highlights the output sub-index, showing a clear decline in the output readings of Western Europe and the MENA region during the pandemic and later years – which can be partially traced to a fall in services as a percentage of GDP (which has a high loading in the principal components analysis). The MENA region’s performance has also fluctuated with oil prices: the region’s resource rents as a share of GDP remains the highest globally, even though it has inched down from around 19.8% in 2000 to 12.7% in 2021 (from 9.8% in 2020). Excluding the best and worst performing regions, South Asia’s progress has been the slowest despite its growth in services (as a percentage of GDP, services share stands at over 52% in 2020-2022).

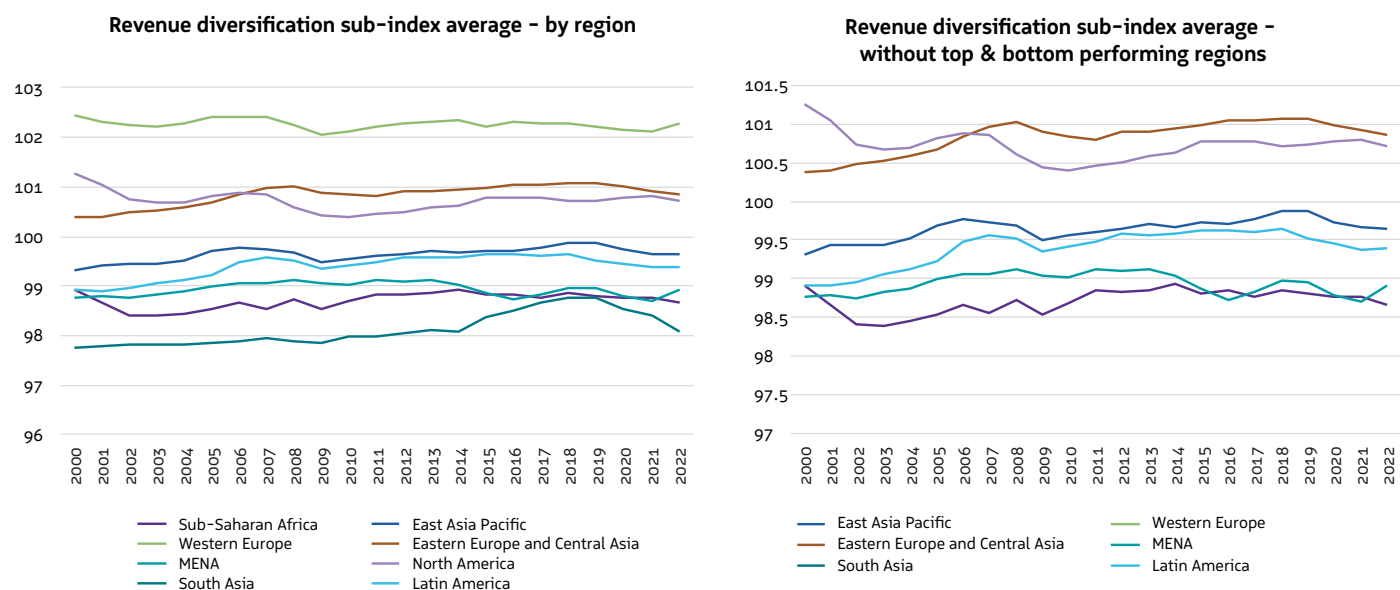
Chart 1.3. Trade diversification sub-index across regions, 2000-2022



The trade diversification sub-index has seen a sharp uptick in scores in recent years, after the dip during the pandemic-affected 2020 (Chart 1.3). South Asia, which had been on a steady decline since 2016, posted a rebound in 2021-2022, given a recovery in merchandise trade (as percentage of GDP) and overall services exports, which will be discussed in detail in the next chapter. On the other hand, the MENA region<sup>9</sup> saw a slight decline in recent years, partly owing to the slight drop in fuel, services and manufacturing exports during 2020. Several non-oil exporting nations in the Middle East have performed better than the GCC within the trade sub-index – notably Morocco, Tunisia and Jordan that have a more diversified export basket and a diverse set of trade partners. East Asia & Pacific’s Trade sub-component gains have been supported by its recovery in production of high-technology export products in 2021-2022

(after the pandemic dip) while Eastern Europe’s scores declined in 2022 – a result partly due to lower exports given the Russia-Ukraine war. Revenue diversification has followed a relatively steady performance path over time (Chart 1.4), with the Western Europe region topping the list and South Asia posting the lowest scores. South Asia did witness a few years of increased scores in the latter half of the last decade, however it still fell short in comparison to its peers. North America has seen a decline in revenue diversification scores over the period while the MENA region has seen an improvement, given the introduction of VAT and excise taxes in the GCC economies. With the rollout of corporate tax in the UAE and income tax being explored in Oman, there remains much room for improvement.

Chart 1.4. Revenue diversification sub-index across regions, 2000-2022

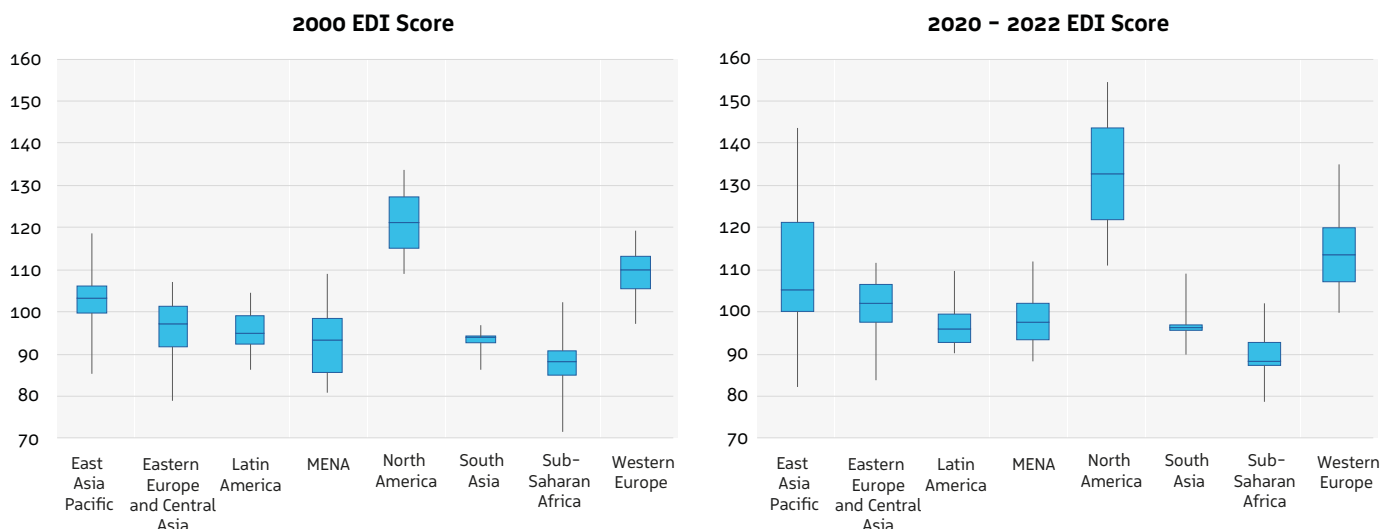


9 MENA region recorded a steady increase in the trade sub-index over time, prior to the recent drop, driven by multiple factors: (a) drop in its fuel exports as a share of merchandise exports (36.6% in 2020-22 from 44% in 2000-03); (b) medium and high technology manufactured exports as a percentage of manufactured exports (25% in 2000-03 to 37% in 2020-22); and (c) an increase in manufactured exports as a percentage of total merchandise exports (to 43% in 2020-22 from 37.6% in 2000-03).

From Chart 1.5, it is evident that the median score is the lowest in the Sub-Saharan Africa region in both 2000 and 2020-2022. When comparing these years, all regions except Sub-Saharan Africa posted an increase in their median scores. In 2000, the gap between the maximum and minimum score was the highest in East Asia: Japan's highest score was 33.2 points ahead of the lowest scorer in the region Mongolia.

In 2020-2022, while East Asia's gap widened much further - China is the highest ranked in 2020-2021 and its gap with low ranked Mongolia widened to 61.7 points- the gap has narrowed in Sub-Saharan Africa and the MENA region.

Chart 1.5. Regional disparities in EDI scores (2000 vs 2020-2022)



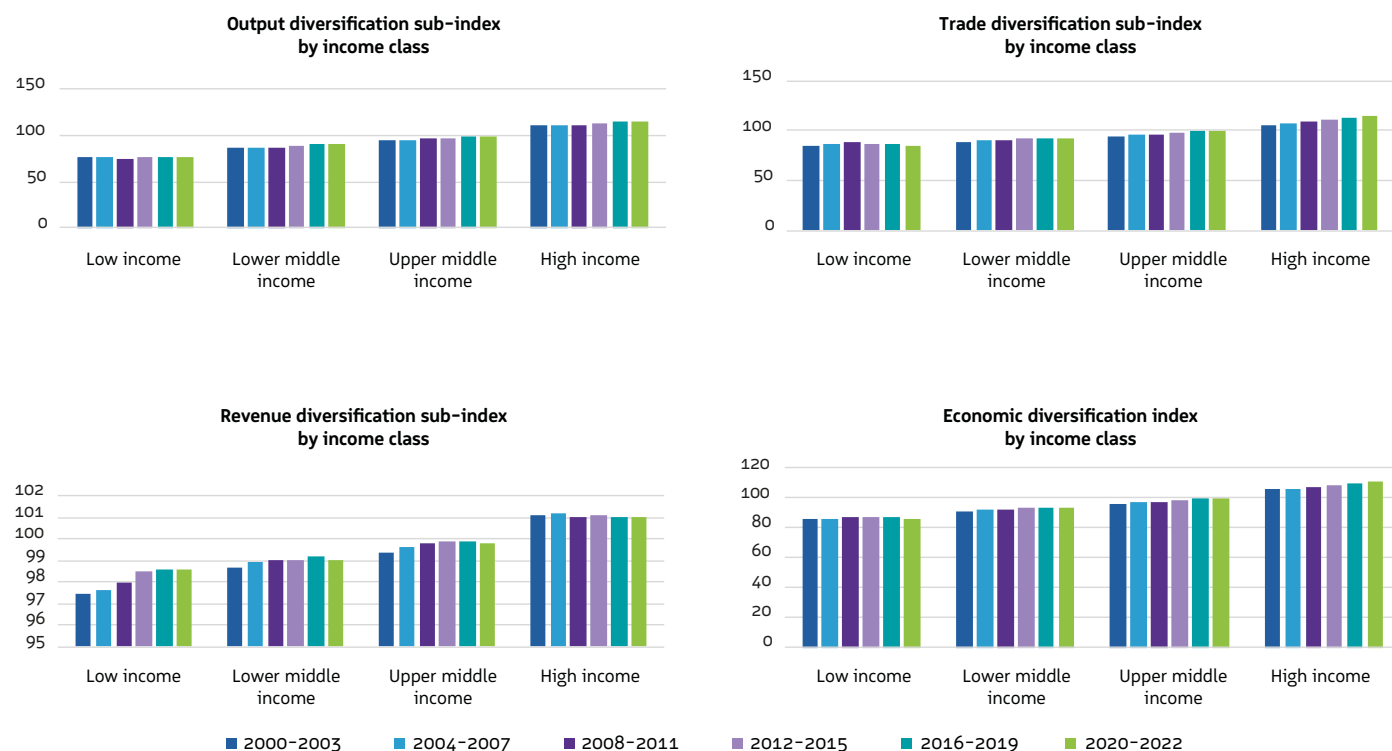
By comparing the inter-quartile range (height of the blue box), least variability is seen in South Asia in 2000, and the most in the MENA region.

The variation in scores reduced in 5 of the 8 regions: MENA the most, by four points, and the other four by less than one point. The variation widened the most in East Asia (evident from the chart), followed closely by North America and Western Europe regions. It is interesting to note that the distribution for East Asia is skewed to the right in 2020-2022 (i.e. higher EDI scores are more spread out).

Furthermore, the lower-income and commodity producing nations in the regional group score lower than the median value:

Mongolia has the lowest score with 82 and the highest score is 143.7 in China. In Western Europe, there are five nations that score higher than 120 in 2020-2022 - the top performer being Germany, while the commodity producing nations (Norway, Iceland) are among the lowest scorers.

Chart 1.6. EDI performance by income class & by sub-index, over time

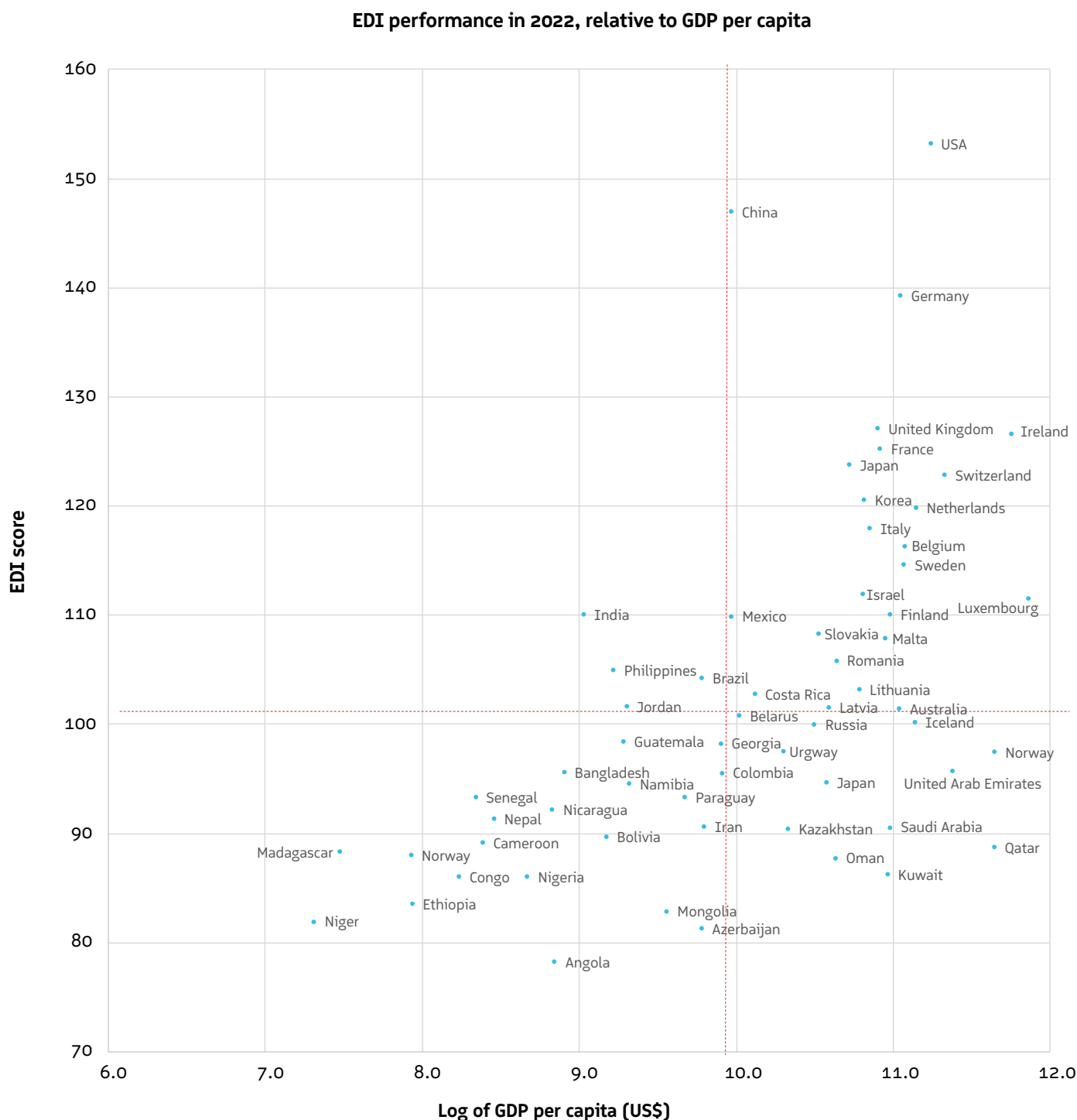


Similar to previous editions of the EDI, the overall score of high-income nations is comparatively much higher than the rest across the whole period analysed (Chart 1.6). The top twenty-five highly diversified nations are high-income economies, except for China (ranked 2nd in 2021) and India (ranked 24th) which fall respectively in the upper middle-income and lower middle-income groups. Both high and upper-middle income nations have improved their post-COVID EDI scores, supported by increased trade diversification. A few high-income and upper middle-income nations feature in the bottom 25% of the index, many of them being commodity-producers.

The performance of the low-income and lower-middle income nations have declined in 2020-2022 period across all sub-indices compared to the prior period. Interestingly, not only has the dispersion of revenue diversification scores been the lowest among the sub-indices, but the gap between the high and low-income groups has also declined as the latter undertake more tax reforms alongside fiscal consolidation measures. The revenue diversification sub-index is also the only one where scores have declined across all income groupings in the 2020-2022 period.

A positive correlation between EDI and GDP per capita is evident in the scatterplot of EDI and income level for 2022 (Chart 1.7).<sup>10</sup> It needs to be reiterated that being a high-income country does not necessarily translate into a high economic diversification score. A below-average EDI score is visible among many high-income oil-exporting nations such as Kuwait and Kazakhstan (bottom right quadrant of the chart). Mexico and Malaysia are examples of economies that have successfully diversified away from their over-reliance on exports of commodities and are now in the top-right quadrant of the chart, while New Zealand, UAE and Norway are nations in the process of increasing diversification, moving closer to the mean EDI score in 2022.

Chart 1.7. A scatterplot of EDI and income level



<sup>10</sup> Income levels are measured by GDP per capita, PPP basis and transformed into log.





## Chapter 2

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# COVID-19, Recovery: Output, Trade, Fiscal & the Rise of the Digital Economy



Since 2010, global internet users have more than doubled and data traffic has expanded twenty-five-fold<sup>11</sup>.

One key digital-era global trend was accelerated by the pandemic period: a considerable increase in both the use of digital technology and the pace of digitalization in economic activities. This had significant implications on overall productivity and growth<sup>12</sup>.

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<sup>11</sup> UNCTAD (2023). “Curbing the digital economy’s growing environmental footprint”. <https://unctad.org/news/curbing-digital-economys-growing-environmental-footprint>

<sup>12</sup> Anderton, Botelho and Reimers (2023) find that while digitalisation (proxied by digital investment) enhances productivity growth, it is not a “one size fits all” policy as it depends on both the sector of activity, and also on the productivity of the firm relative to its competitors. An IMF working paper looking into Asia’s productivity (Dabla-Norris, E. et al. (2023)) identifies that digital divides and slow diffusion of technology constrain productivity growth, underscoring the need for reforms to bolster broad-based innovation and digitalisation to boost productivity and growth. A Bundesbank study of the impact of digital transformation on labour productivity in major euro area countries and the US between 1997 and 2018 finds that the production and use of digital goods (e.g., software and telecommunications technology) lent a major boost to labour productivity, and that efficiency gains were routinely much greater for producers of digital goods than in the rest of the economy. McKinsey (2023) also find that in the US, sectors with the highest and fastest-growing productivity are linked to digital adoption; furthermore, “frontier firms” with respect to productivity also accelerate away from their peers (resulting in a wider gap between those in the frontier and laggards).

While working from home (WFH) became a standard expression, online trade, shopping and entertainment surged while e-commerce and digital delivery grew exponentially<sup>13</sup>.

The pandemic saw an accelerated adoption of digital technologies<sup>14</sup>, and eventually the full digitalization of numerous economic activities in industries or sectors where it had been previously lagging (Jaumotte et al., 2023). This led to larger gains – particularly in advanced nations where basic infrastructure was already in place.

#### **Faster digital adoption also leads to multiple societal benefits:**

Kumar, Amaglobeli and Moszoro (2023) find that increasing internet use from 10 to 90% increases labor force participation by six percentage points, with a larger effect for female labor force participation than for men, as well as raising secondary school test scores by 16% on base average **(these test scores could translate into annual gains of 1.1% and 2.3% of GDP due to productivity gains, in emerging markets and low-income developing countries respectively)**.

A considerably wide digital divide existed pre-pandemic: **over 700 million people lacked**

**broadband connectivity in 2019**<sup>15</sup>. It was not the only missing factor, other basic infrastructure components were missing or insufficient, including electricity, capacity, financial inclusion, and regulations—all have an impact on how digital benefits accrue to the users and the wider population. To understand how the consumption of digital technology has changed over the past decades, four key indicators are considered for the countries covered in the EDI (Chart 2.1). **To benefit from the digital economy, both individuals and businesses need to be sufficiently online.** Both fixed broadband and mobile phone subscriptions have increased over time: in both cases, the fastest increases were recorded in areas where the initial readings were substantially lower. This is a catch-up effect. In South Asia and Sub-Saharan Africa, fixed broadband subscriptions surged by close to nine and five times to 5 and 2.4 subscriptions per 100 people in 2022 (compared to 2010). Mobile cellular subscriptions per 100 people in South Asia rose the fastest to 107.6 in 2022 (almost 2-times compared to 2010), outpacing even North America's reading of 100.7.

In the Arab states, internet penetration has more than tripled since 2010, with active mobile broadband increasing by 10 folds in the decade between 2010 and 2020.<sup>16</sup>

About 88% of global population was covered by 4G mobile networks (though, on average, in Africa only half the population were covered) but less than one-fifth were covered by a 5G network (with 16% of Asia-Pacific population being covered versus a higher 52% in Europe)<sup>17</sup>.

13 UNCTAD estimates that e-commerce's share of global retail trade grew to about 17% in 2020 from 14% in 2019. IMF (2023) disclosed that Asia now accounts for nearly 60% of the world's online retail sales, with e-commerce revenues growing by 40–50% in Vietnam, Indonesia, and India in 2020, outpacing most of the world. The Global Findex database revealed that an estimated 2.3 billion persons shopped online in 2021, up 68% from 2017.

14 ITU data showed that internet use grew to 64% of the population in 2022, reaching 5.3 billion people, up from 53% in 2019 (ITU 2023).

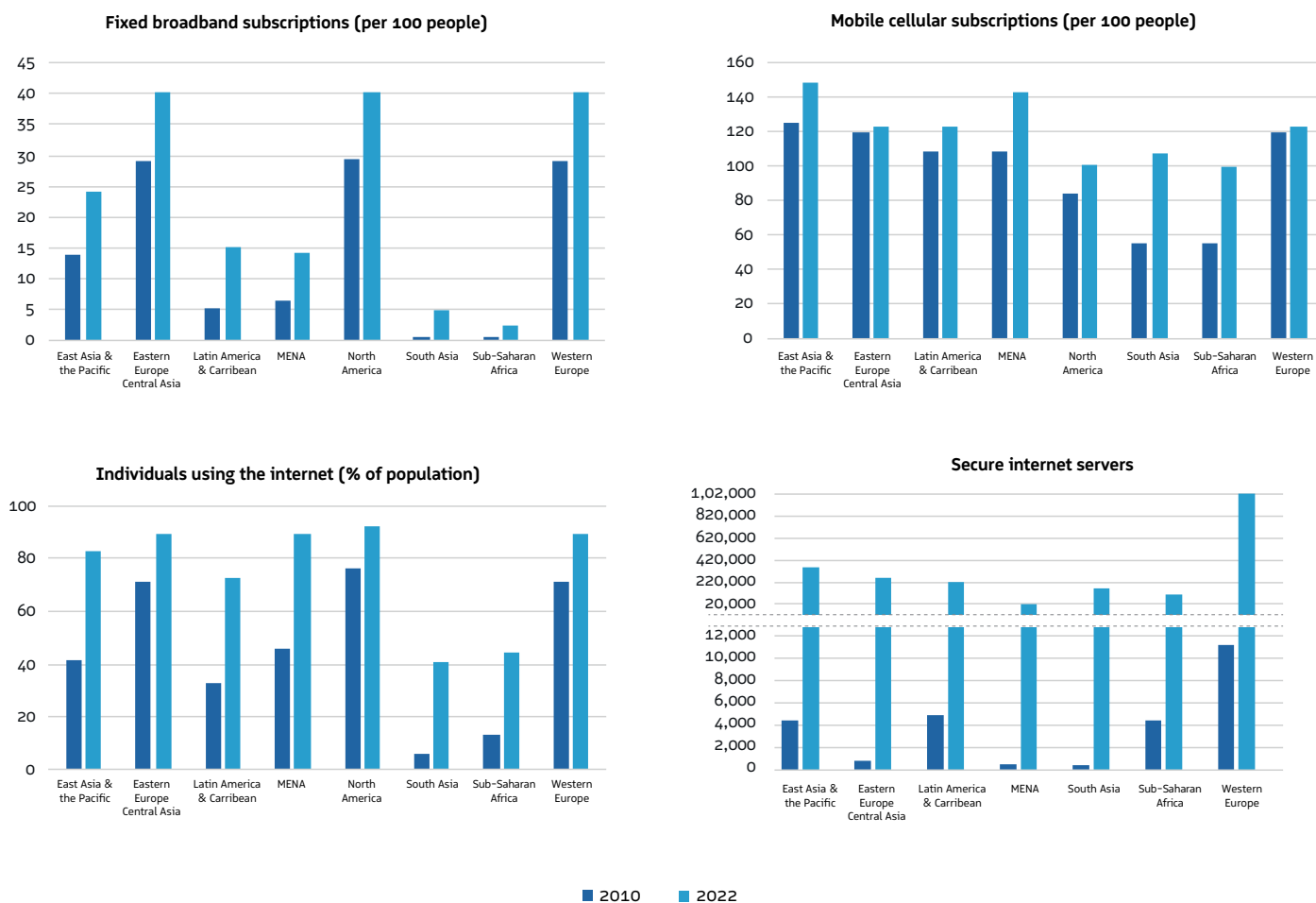
15 According to the GSMA (that tracks mobile connectivity), usage gap (i.e. people living in areas covered by mobile broadband networks but still not using mobile internet) was almost 8 times the coverage gap. This stems from multiple factors including affordability, low levels of literacy and digital skills, a perceived lack of relevance, and safety and security concerns. Addressing these concerns would also drive digital inclusion.

16 The Arab World Online 2017–2021: Digital Transformations and Societal Trends in the Age of the 4th Industrial Revolution. Retrieved (MBRSG): <http://dx.doi.org/10.2139/ssrn.3059445>

17 ITU 2021. "Measuring Digital Development: Facts and Figures 2021". Retrieved (MBRSG): <https://www.itu.int/en/ITU-D/Statistics/Documents/facts/FactsFigures2021.pdf>

Though the availability of core infrastructure is the enabling factor, it is usage that matters. Despite coverage and access, there is a gap in the share of persons using the internet: **only two-thirds of the global population used the internet in 2022, with the ITU finding that only one-third of the population in least-developed countries used the internet.** Consider South Asia, where only 40% of the population has used the internet despite mobile cellular subscriptions at 107.6 (per 100 persons). This is largely due to multiple factors including affordability (such as handsets and/or cost of subscriptions), quality and bandwidth, low levels of literacy and digital skills, a perceived lack of relevance, and safety and security concerns. Secure internet servers use encryption technology in internet transactions, thereby enabling businesses to conduct secure and private transactions (for example, e-commerce and online retailing). North America tops the list while MENA lags regional peers.

Chart 2.1. Selected digital indicators by region 2022 vs 2010



Source: World Development Indicators, World Bank.

**In the context of diversification, countries that are on the backfoot with respect to digital infrastructure and digital capabilities, need to develop and implement digital economy strategies, and focus on key issues to avoid a widening digital gap.** One, investment in basic digital infrastructure is a socio-economic necessity – with governments focusing on investments that may be inaccessible or unprofitable for private sector firms. Two, regulatory environments to remove barriers to private sector digital investments and conducive to encourage innovation such as sandboxes for Fintech firms. Third, investing in education, developing high-skilled human capital (with a focus on STEM) and upskilling the workforce to meet employers’ demand. Building a better digital economy also requires a legal and regulatory framework that supports the IP and digital rights of the various stakeholders in the ecosystem (be it the financial sector, investors, or businesses). Closing the digital gap will provide an opportunity for increasing incomes and reducing gaps, be it income, gender, rural/urban or youth, all the while leading to greater economic diversification.

# Incorporating digital-trade indicators in the EDI

Given the rising prominence of the digital economy in the past few years, this edition of the EDI introduces new indicators that capture the growth of digitalization in economic activities – which in turn contributes to economic diversification. The services sector has been supporting a structural transformation of the global economy. Services now account for over two-thirds of world GDP – twice the combined shares of agriculture and industry (World Bank, 2023), with a larger share in high and middle income countries. Similarly, the WTO (2020) finds that services account for about 50% of world trade in value added terms and over two-thirds of foreign direct investment. Services, and trade in services, are also key enablers of global and regional value chains (Miroudot, 2017).

**Trade in services further forms a large and growing share of global cross-border trade:** examples include air transport in Ethiopia enabling exports of cut flowers, ICT services in India supporting job opportunities for women and developing outlying cities, Kenya's transformation via greater financial inclusion and the business process outsourcing sector in Philippines.

Universally accepted measurement of the digital economy is still an ongoing process. **There is limited availability of indicators that measure the impact of the digital economy on output and government revenue globally.** This has led to limited data availability and therefore coverage of these indicators in the respective EDI sub-indices. For example, if one considers the production of ICT products (where available) as one element of the digital economy, its value is usually captured as part of indicators measuring the high value-

added manufacturing sector, while ICT services and ICT-enabled services may already be captured as a component of the services sector indicators. These are partial elements of the digital economy that may already been included in the measurement of traditional economic diversification indicators.

**However, data availability remains a challenge and limitation for assessing emerging economic activities heavily influenced by digital transformations.**

For example, while ICT output value added is available for OECD nations, UNCTAD's data on "value added in the ICT sector as a percentage of total business sector value added" is available only for a few nations and a limited number of years. Two, targeted taxation of the digital economy is still at a nascent stage.

**Digital technology allows businesses to operate in a country without a physical presence, which poses challenges for traditional taxation systems.** Cross-boarders data flows and business models related to the rise of artificial intelligence pose additional challenges on questions related to revenue measurement at national levels. Digital businesses cannot be easily taxed by their home country on income generated from sales abroad either. On the other hand, some categories of digital goods and services are already taxed under VAT or goods & services taxes.

**These are few of the existing complexities affecting attempts for robust measurement of the digital economy dimensions, and as a result affecting the ability to assess impact on economic diversification.**



Digital goods and services, as well as the digital delivery of services have emerged as important components of global trade, thereby allowing us to capture key components of the digital trade as part of the overall Trade sub-index scores.

Three additional indicators are added for the first time to the Trade sub-index:



**Digitally deliverable services** – those that can be delivered remotely over computer networks such as the internet: This type of services grew rapidly especially during the disruptions caused by the COVID-19 pandemic. Its share in total services exports is at three to four percentage points above the pre-pandemic rate;



**ICT goods exports as percentage of the economy's total merchandise exports;**



**International trade in ICT services as a percent of total trade in services (exports flow).**

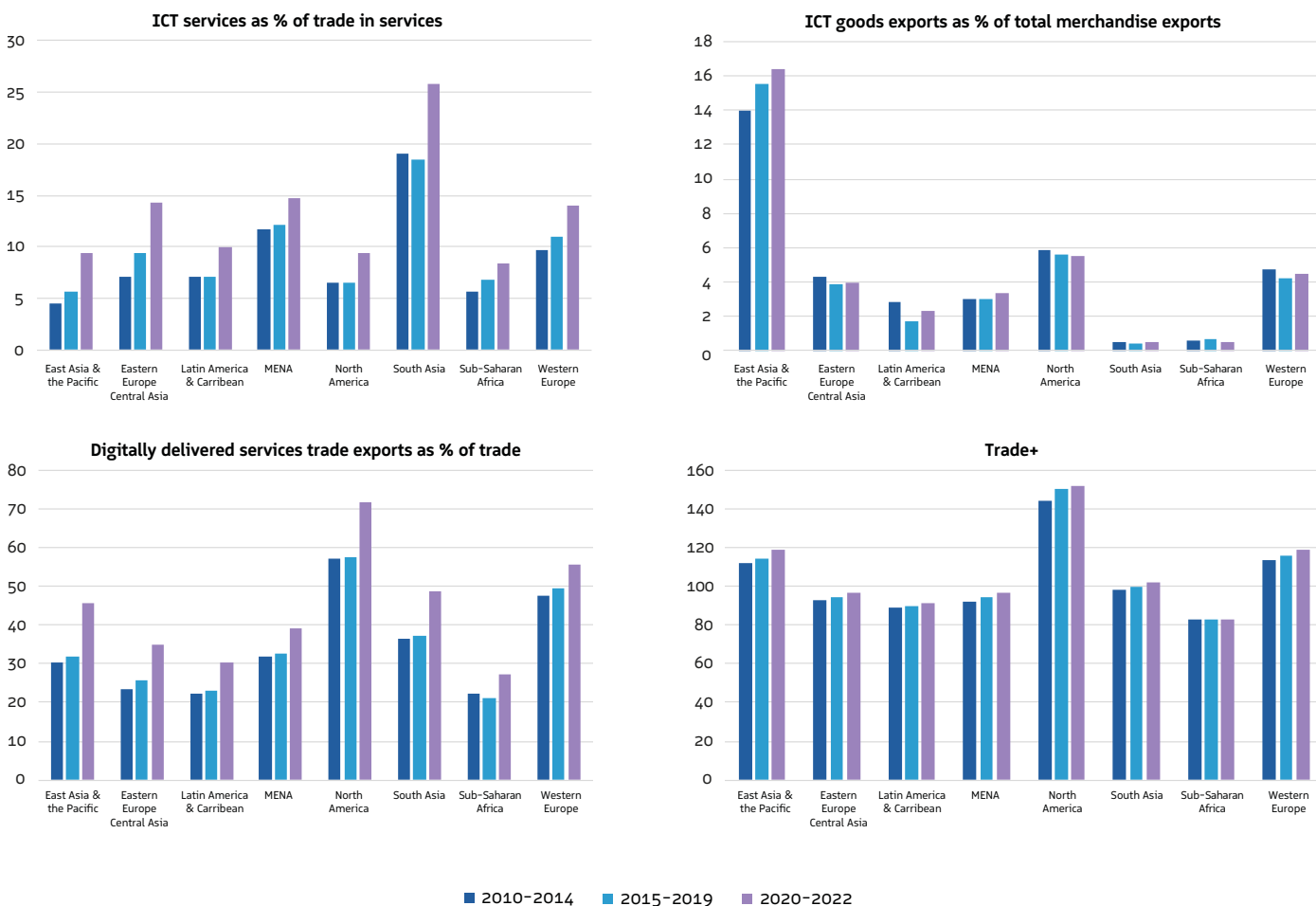
Hence, this edition of the EDI adds three digital-trade specific indicators to the Trade component. A revised Trade+ (“trade-plus”) sub-index is calculated for the years 2010-2022, for a subset of 106 countries. This revised Trade+ scores, alongside unchanged output and revenue sub-indices is averaged to result in an EDI+ (“EDI-plus”) score and ranking. This provides the possibility of exploring the partial impact of digital trade on economic diversification (i.e., the EDI+ scores) over time for a subset of countries that have data related to digital trade available. This is done in addition to calculating basic EDI scores (without digital trade indicators), for a larger set of countries, including those with lack of availability of digital data, over a more expanded time period<sup>18</sup>.

<sup>18</sup> MBR School of Government (2023). Advancing Artificial Intelligence Impact in Dubai: Future Directors Towards Strengthening the Digital Economy. <http://www.mbrsg.ae/home/research/innovation-and-future-governments/advancing-artificial-intelligence-impact-in-dubai>



# EDI+ results

Chart 2.2. Digital trade indicators and the EDI+ trade sub-index



Source: World Development Indicators, World Bank.

**Each of the three indicators show an uptick in the 2020-2022 period, visible across all regions, underscoring the prominence of the digital economy since the pandemic.** While South Asia is the undisputed front-runner in terms of ICT services as a percentage share of trade in services (26% in 2020-2022), East Asia & Pacific tops the share of ICT goods exports in overall merchandise exports, given the size and dominance of China, Korea and Japan.

Digitally delivered services trade exports, which accounted for almost two thirds of all services exports worldwide in 2020 (and 55% in 2022), shows North America and Western Europe as the top performing regions. Though digitally deliverable exports have grown across

all regions, the pace of growth of countries that were initially at a disadvantage have lagged compared to others.

**Consider the increase for Sub-Saharan Africa:** its share has jumped to 27% in 2020-2022 from 22.5% in 2010-2014. Compare this to the top performer, North America, whose share jumped to over 70% in 2020-2022 from under 60% in 2010-2014). This reiterates the need for such nations to invest in harnessing digital trade – be it by reducing connectivity costs or increasing access to faster, higher bandwidth, networks, among other policy and developmental measures.

Table 2.1. EDI+ scores, by region and over time (heatmap)

	2010	2014	2018	2022
North America	123.0	125.6	127.9	128.2
Western Europe	111.2	112.1	113.0	113.3
East Asia Pacific	104.3	106.2	107.7	108.5
South Asia	94.6	95.6	96.5	97.6
Eastern Europe & Central Asia	94.1	94.6	95.5	96.5
Latin America & the Carribean	95.0	95.3	96.0	96.0
MENA	85.2	85.6	87.7	87.6
Sub-Saharan Africa	86.7	87.6	87.5	87.4

Least Improvement  Most Improvement

**The addition of the three digital indicators has resulted in new Trade+ sub-index scores. Other than Sub-Saharan Africa region, all regional groups have improved their Trade+ sub-index scores in 2020-2022.**

North America, Western Europe and East Asia & Pacific remain the top three regional groupings for the Trade+ sub-index over time. This is also reflected in the overall EDI+ score (Table 2.1.). However, in terms of income classification, there are no surprises:

**Low-income nations have the lowest Trade+ sub-index and EDI+ scores, while high-income nations top the list.**

Table 2.1 shows the EDI+ scores over time by regional groupings: the top three groups and Sub-Saharan Africa as the worst performer are consistent with the original EDI scores.

However, the EDI+ scores enhance South Asia's ranking by two rungs higher, and leads MENA's ranking to be placed two rungs lower in 2020-2022. Considering digital trade indicators also changes Latin America and Eastern Europe's ranking (one place higher and lower respectively compared to the original EDI score).

However, the regional groupings hide wide country scores differences within each group.

Table 2.2. Twenty of the top and bottom ranked countries in the Trade sub-index for the year 2022 (excluding and including the digital indicators)

Top 20-ranked nations		Bottom 20-ranked nations	
Trade sub-index	Trade+ sub-index	Trade sub-index	Trade+ sub-index
China	China	Tanzania	Ethiopia
United States	United States	Iran	Uganda
Germany	Germany	Rwanda	Tanzania
United Kingdom	United Kingdom	<b>Congo</b>	Paraguay
France	Singapore	<b>Ghana</b>	Cameroon
Singapore	Ireland	Mozambique	Kazakhstan
Ireland	France	Oman	Botswana
Japan	Japan	Kazakhstan	Oman
Netherlands	South Korea	Zambia	Iran
South Korea	Netherlands	Cameroon	Mozambique
India	India	Ecuador	Rwanda
Italy	Philippines	Jamaica	Ecuador
Spain	Italy	Botswana	Zambia
Belgium	Belgium	Bolivia	Bolivia
Poland	Czechia	<b>Kuwait</b>	Niger
Mexico	Sweden	Nigeria	Jamaica
Denmark	Poland	Niger	Nigeria
Sweden	Malaysia	Azerbaijan	Azerbaijan
Austria	Hungary	Mongolia	Angola
Thailand	Spain	Angola	Mongolia

Note: the green coloured text represents where nations have gained positions when including the digital indicators; blue when the rankings have fallen. In the bottom-ranked nations, those nations in bold represent countries that have better rankings including digital indicators (where they do not fall in the bottom 20).

There are interesting differences in the Trade+ sub-index scores and rankings within regional groupings (compared to the original Trade sub-index scores/ rankings), depending on countries' performance in the digital indicators. Table 2.2. highlights the difference in top and bottom-20 ranked nations in the Trade and Trade+ sub-indices.

### Based on these scores, one can extract the following key observations:

1. The top four ranked countries are the same in both sub-indices (Trade vs. Trade+);
2. Most of the top-ranked countries perform better when including digital indicators, except for five nations (highlighted in red);
3. Four nations - Philippines, Czech Republic, Malaysia and Hungary - are not among the top-20 ranked in the original Trade sub-index, however that gain ranks due to the inclusion of the digital trade components;
4. Three countries among the bottom-20 within the original Trade sub-index are missing in the same list for the Trade+ sub-index: these are Congo, Ghana and Kuwait;
5. Of the bottom 20-ranked nations in the original Trade sub-index, the score of thirteen of them is worse when including digital trade indicators - a finding in line with what other studies have suggested, where if adoption is delayed, existing digital divides only worsen performance (unless specific reforms are undertaken<sup>19</sup>).

<sup>19</sup> Dabla-Norris, E. et al. (2023) specifies reforms (geared towards Asia but that could be extended elsewhere) including enhancing digital infrastructure (to broaden access to information and technology), improving digital literacy and upskilling the workforce, encouraging and facilitating adoption of new technologies and enabling increased access to finance using new technologies among others.



Additional interesting observations suggest that more should be explored in relation to the influence of the digital trade on economic diversification.

For example, when exploring country data for the year 2022, related to Trade+ sub-index the following observations provide interesting findings to explore further:

- Philippines scores higher than Thailand and Malaysia, reflecting the higher shares in ICT goods exports of close to 50% versus Malaysia's 30%+ and Thailand's less than 20% as well as digitally delivered services share of 63% in 2022 versus around 40% in Malaysia and Thailand.

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- Among Sub-Saharan Africa nations, Ghana and Congo score higher in the EDI+ version thanks to its high shares of digitally delivered services (of close to 40% and 65% respectively) compared to say Rwanda's share of 5%. Rwanda scored ahead of both Ghana and Congo in the Trade sub-index sans digital indicators.

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- The Czech Republic and Latvia stand out with the inclusion of the digital trade indicators, with shares of digitally delivered services close to 50% and to 20% share of ICT services (versus around 20% and 7% respectively in Croatia which ranks 45 in the Trade+ sub-index versus 40 in the original Trade sub-index).

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- In Western Europe, Finland (ranked 29 in EDI+ trade versus 34 in the original Trade index) and in the Middle East, the UAE (ranked 55 in the new Trade+ sub-index, rising from 73 in original Trade sub-index) are other major gainers when digital trade is included in the measurement of their economic diversification.



If one considers the gains over the period 2010-2022, for both sub-indices, unsurprisingly, the nations that gain most in scores are China, US, Germany, Singapore and the UK. Comparing the results for the years 2022 versus 2010, under two-thirds of the nations' post better gains in their economic diversification scores, specifically in the Trade+ sub-index (including digital trade), compared to what they gain in the Trade sub-index (excluding digital trade) during the same period.

At a regional level, Chart 2.3 below plots the EDI scores and scores of Trade sub-indices for regional groupings with differences between their score in the EDI and when including digital trade indicators (EDI+). For both the MENA

region and Eastern Europe & Central Asia, the jump in Trade+ sub-index leads to a change in EDI performance:

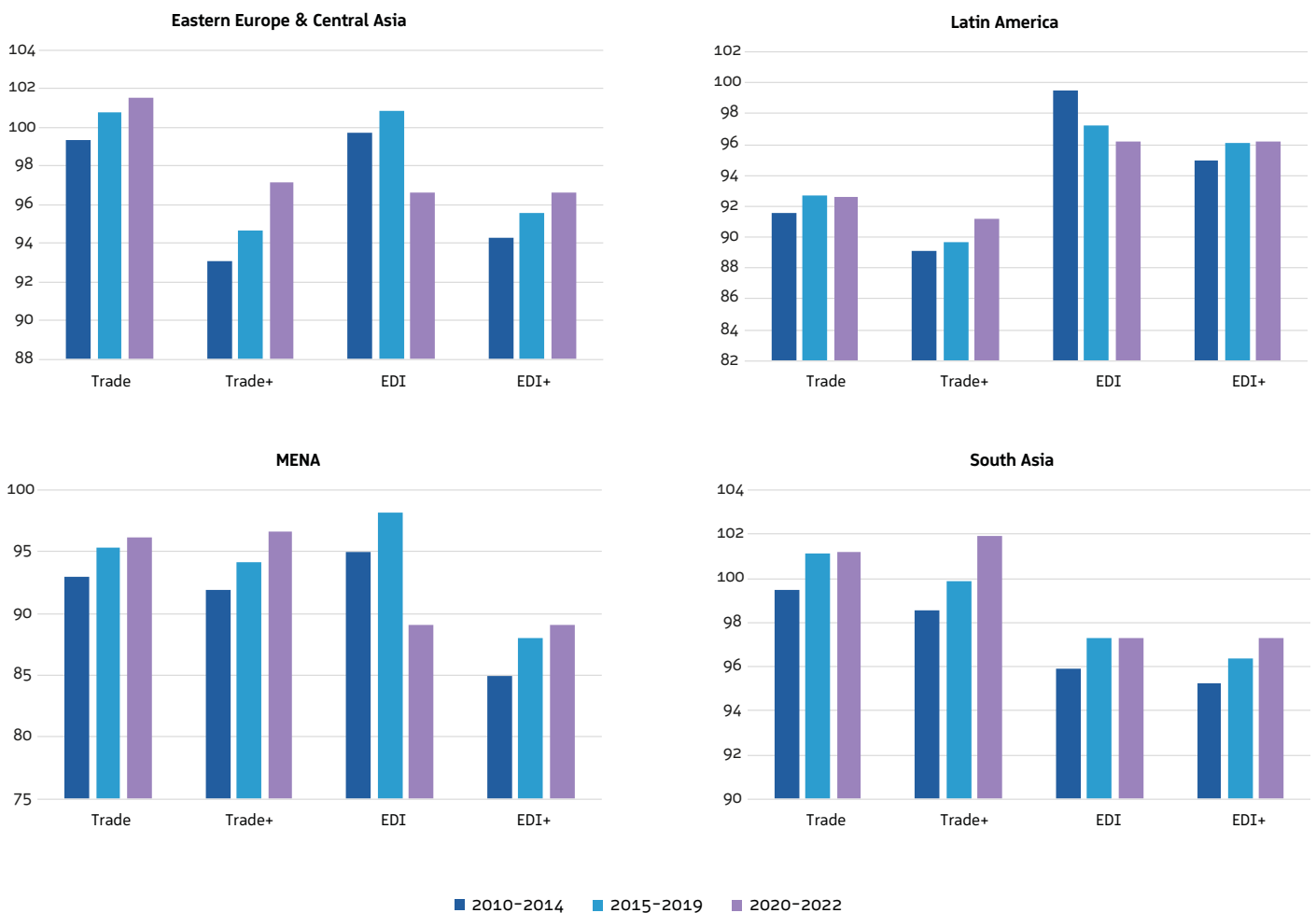
For the years 2020-2022, both groups post gains in 2020-2022 EDI+ scores versus a decline in the original EDI series.

In the case of Latin America, Trade+ scores post a gain in 2020-2022 versus being slightly lower in the original Trade sub-index scores: this leads to increased EDI+ scores over time versus a declining trend in the original EDI score.

For South Asia, the jump in Trade+ scores is significant over time and is reflected in the EDI+ score as well.

Chart 2.3. Comparison of Trade sub-index and EDI scores, with & without digital indicators

Comparison of trade sub-index and EDI scores, with & without digital indicators\*



\*Trade+ sub-index includes the three additional digital indicators. EDI+ refers to the new overall index, using Trade+ as one of the sub-components.

**For commodity producers, the Trade+ sub-index continues to rise over time, with the highest reading registered in 2020-2022** (see Table 2.3), highlighting the increased influence of digital trade indicators post-pandemic (even in commodity dependent nations).

In contrast, the original Trade sub-index had posted a slight decline in 2020-2022, in line with the commodity prices performance over this period. This is reflected also in the EDI+ versus EDI scores – the former is higher in 2020-2022.

The simple implication is that commodity producers and exporters can strongly improve their overall economic diversification objectives (and by extension their EDI and trade rankings) by expanding the share of the digital economy and its services in their economic activities.

Table 2.3. Commodity dependent nations EDI vs EDI+ performance, highlighting Trade sub-index scores

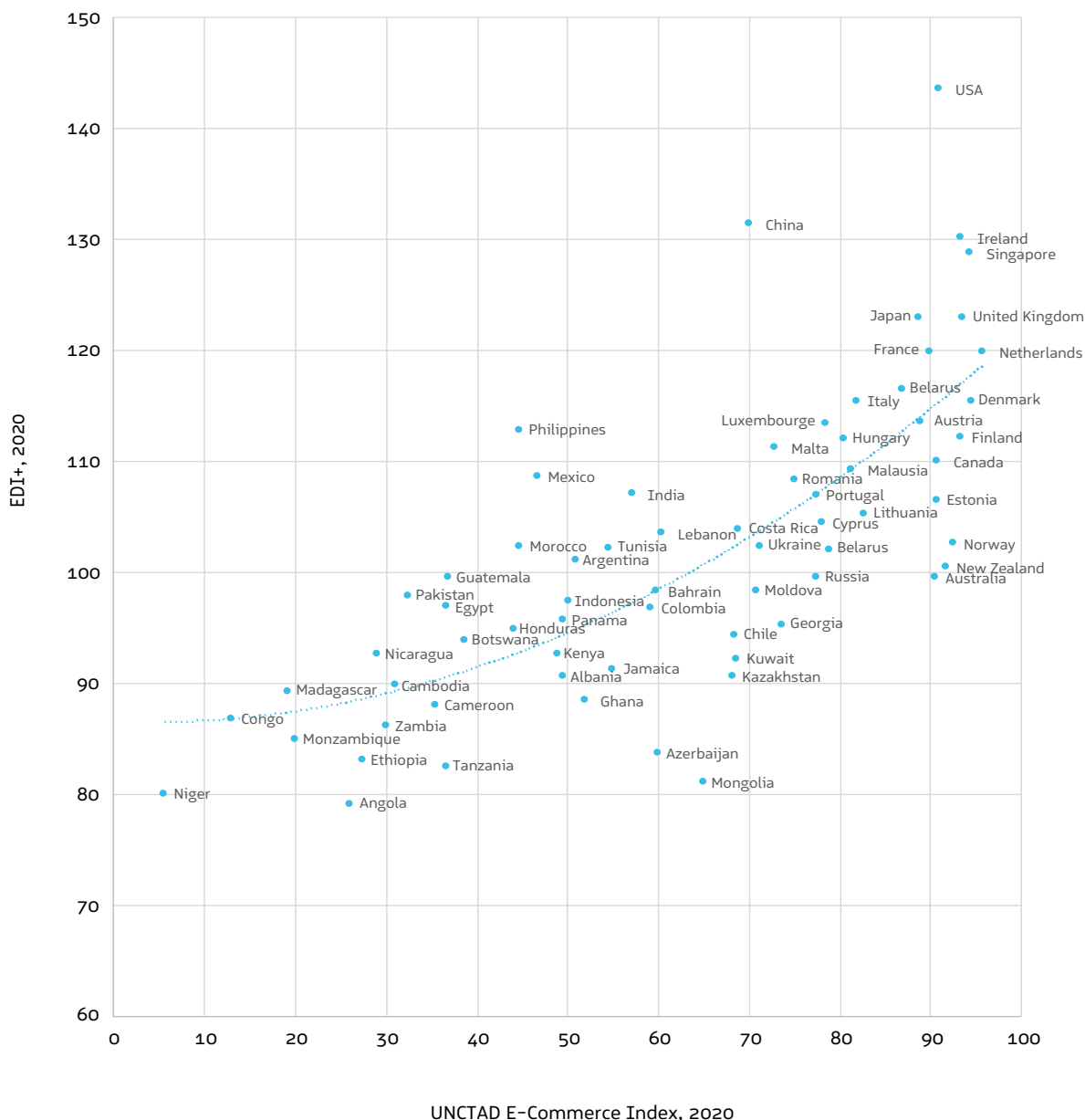
	Trade+	EDI+	Trade	EDI
2010-2014	83.15	86.78	85.77	90.68
2015-2019	84.25	88.55	87.09	92.58
2020-2022	85.15	88.61	86.77	92.08

Lowest Score  Highest Score

# Performance of EDI+ compared to other digital indices

Charts 2.4 to 2.6 compare the EDI+ scores to other digital indices for the years 2020–2022, indicating a positive correlation. Several top ranked economies in the EDI+ are present in some of these indices as well. For example, the “UNCTAD e-commerce index” for the year 2020 tracks countries’ readiness to engage in online commerce. While European nations dominate the top 10 ranks, two Asian nations, Singapore and Hong Kong, are part of the 2020 ranking. **Interestingly, two of the largest Business-to-Consumer (B2C) e-commerce markets, China and the US, are ranked only 55th and 12th.** This is largely due to scoring lower in some sub-indicators relative to other advanced economies. For example, internet penetration in the United States is lower than in other top 10 economies, while China ranks 87th.

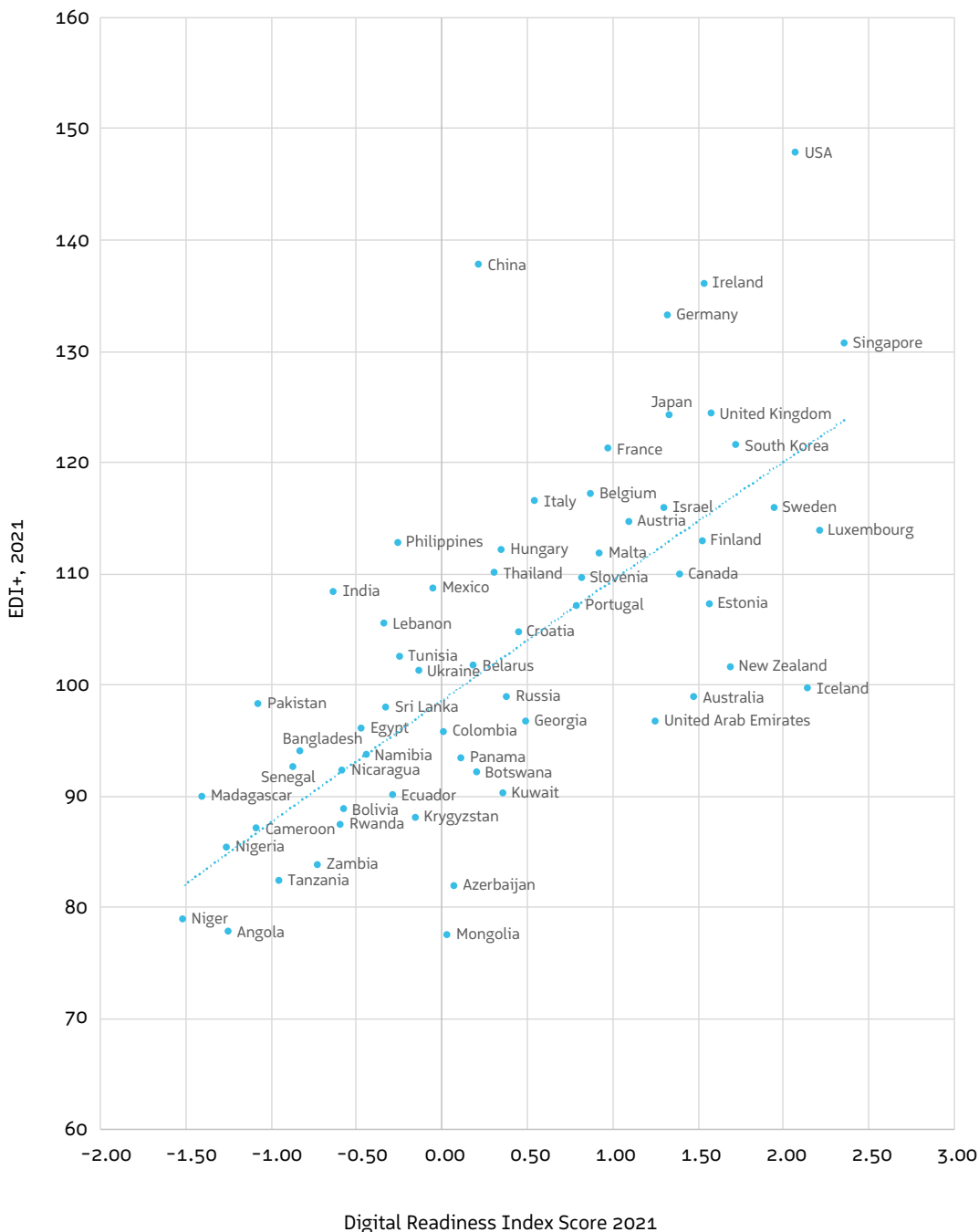
Chart 2.4. EDI+ and UNCTAD E-Commerce Index, 2020





The Digital Readiness Index (DRI) ranking for the year 2021 enables countries to track their readiness to become more digitally inclusive. It tracks indicators related to tech infrastructure and adoption in addition to broader components such as business and government investment as well as ease of doing business and human capital measures among others. Asia's Singapore and South Korea feature as two of the most digitally ready nations, coinciding with the EDI+ top-ranked list.

Chart 2.5. EDI+ and Digital Readiness Index Score, 2021



**The Economist Impact Inclusive Internet Index for 2022, which tracks availability, affordability, relevance, and readiness as the main components, had Singapore as the global leader, followed by South Korea and the US.**

The report also highlights outperformance of some middle-income countries (Malaysia, Kazakhstan, and Argentina) compared to wealthier nations, due in part to their efforts in the realms of digital literacy and education. This finding is significant as it implies that level of income is not a constraint to reducing digital gaps and driving digital inclusiveness.

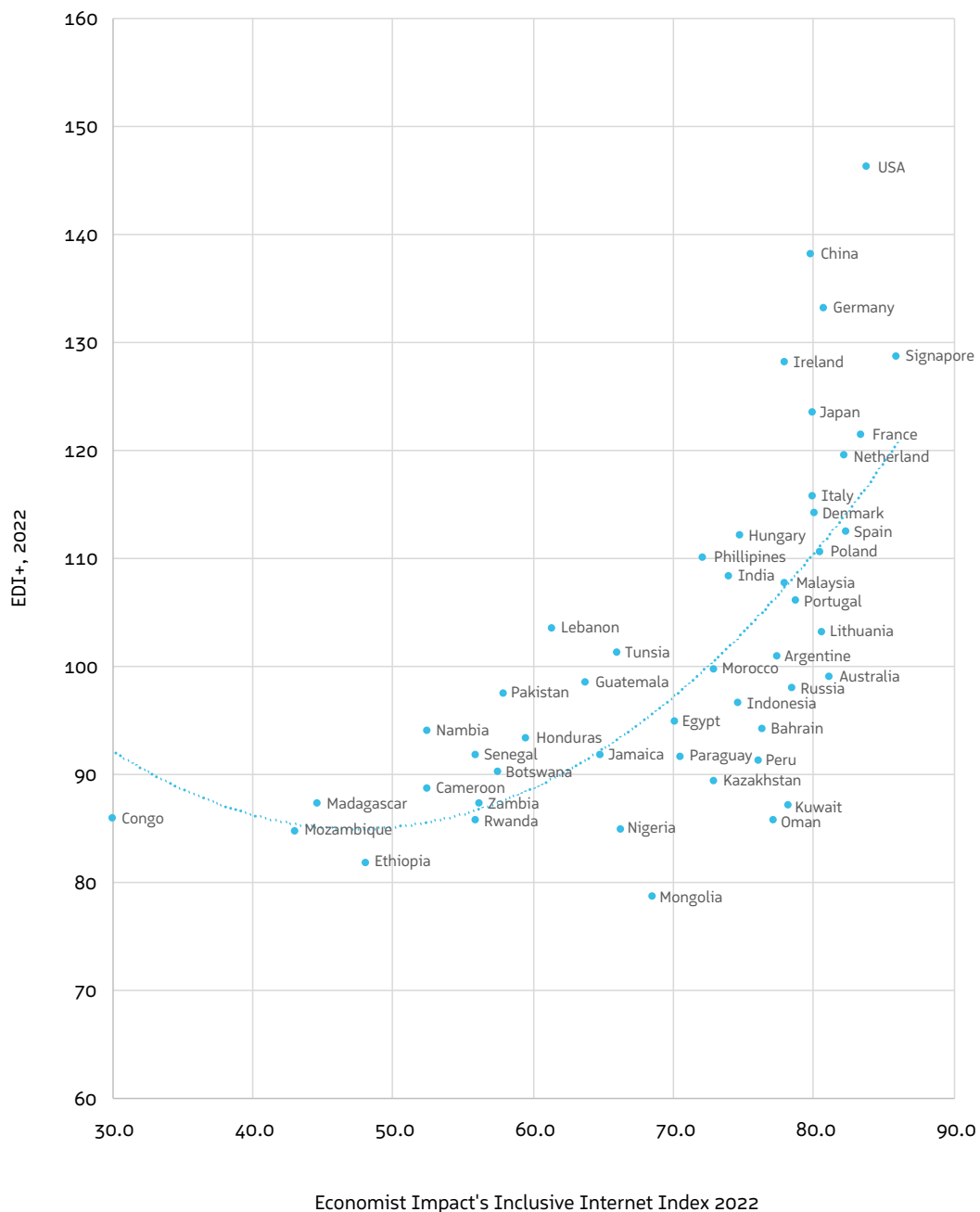
The investment in and adoption of new digital technology supports commodity exporters in their efforts to diversify away from overdependence and reliance on commodities. For example, Costa Rica (ranked 44 in the Trade sub-index and 34 in the Trade+ sub-index) successfully diversified its exports away from coffee and bananas towards the manufacturing of medical instruments as well as ICT services and eco-tourism. Services play a critical role in global value chains and international trade:

**The higher the development of the services sector as reflected by diversity and quality of the traded services, the better the access to competitive key services inputs by domestic firms (Hoekman and Shingal, 2020).**

While high-income countries rely mostly on high-knowledge intensive services (which require skilled labour), such as financial, business, insurance or intellectual property services, commodity-exporting nations' trade in services exports is usually dominated by travel (and in some cases, transport). The use of innovation and technology in the high, knowledge-intensive services sector can also lead to high-quality and more diversified exports of goods.

**To promote services-driven diversification, the private sector and SMEs need to improve their potential (e.g., in ICT); however, this would be possible only if wider ICT infrastructure, regulatory, skills, access to finance, and/ or competitiveness challenges are addressed by the public sector.**

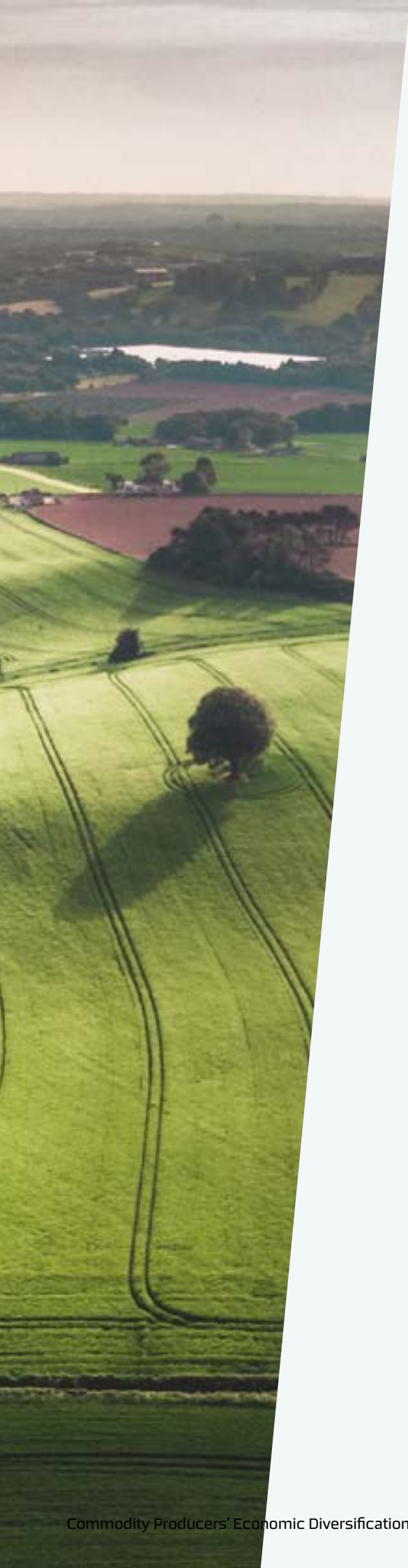
Chart 2.6. EDI+ and Economist Impact Inclusive Internet Index, 2022



## Chapter 3

# Commodity Producers' Economic Diversification





## Commodity producing nations are vulnerable to volatility in commodity price.

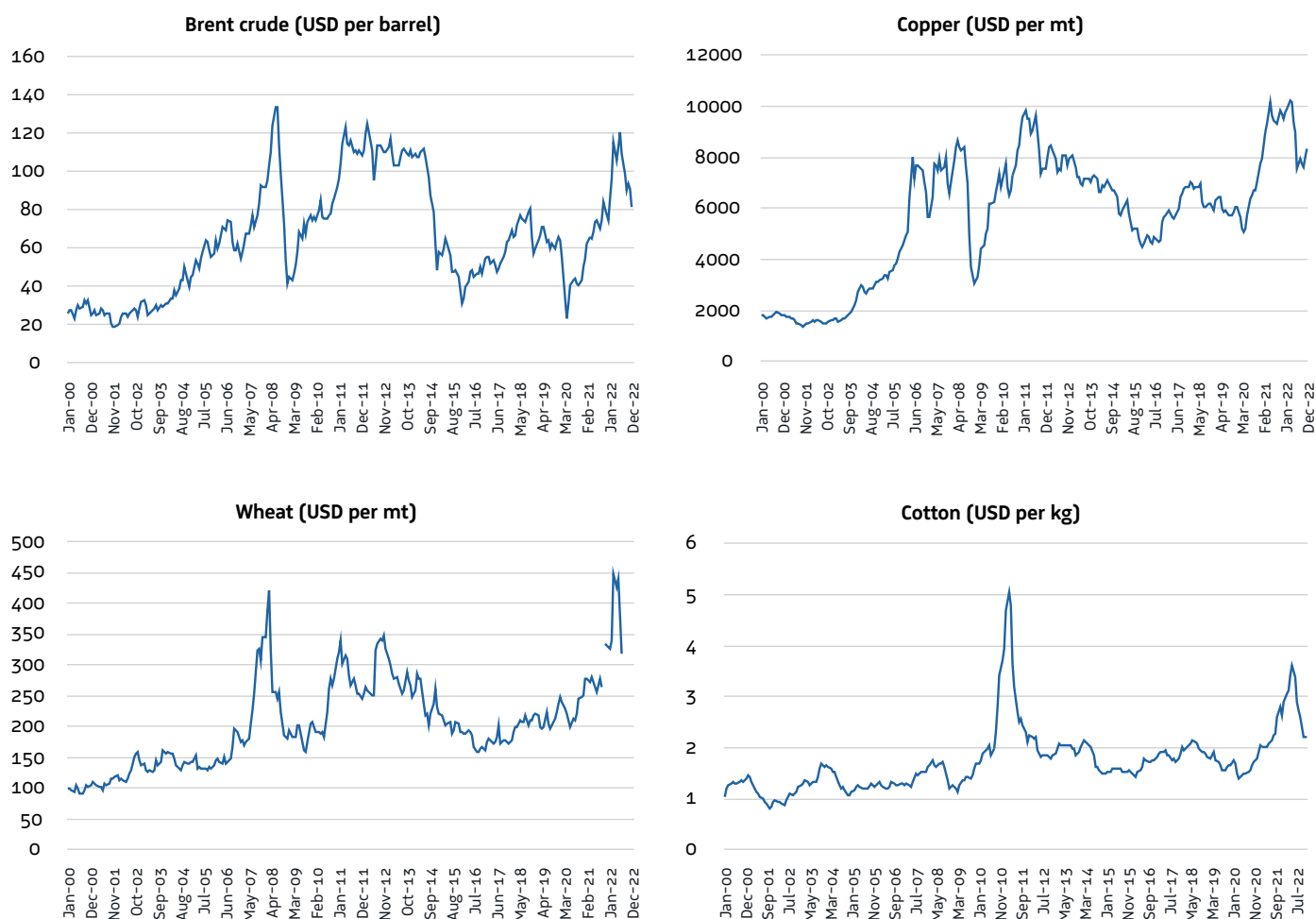
Commodities – be it food, agricultural raw materials, minerals, ores, and metals, and/ or energy – are significant sources of both export and fiscal revenues for almost two-thirds of emerging market and developing economies globally<sup>20</sup> resulting in unstable macroeconomic conditions and growth prospects.

**Furthermore, more than half of the world's poor reside in such commodity exporting nations leading to potential deterioration of poverty and health outcomes.** Of all the traded commodities, the price of oil has been more volatile than the price of copper, wheat or cotton, over time.

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<sup>20</sup> World Bank (2018): "The Role of Major Emerging Markets in Global Commodity Demand", Global Economic Prospects: The Turning of the Tide?, June.

Chart 3.1. Monthly price movements of major commodities in nominal US dollars



Source: World Bank Commodity Price data.

The pandemic-affected 2020 saw a decline in commodity prices, followed by a dramatic uptick in 2021. The Russia-Ukraine war resulted in the next shock, with crude oil prices reaching a thirty-year high of USD 120.1 per barrel in April 2022 – a level that was slightly lower (in nominal terms) compared to the oil price shock of 1973–1974. The war also led to surging electricity and gas prices in energy importing Europe, that nudged the latter to shift policy to secure green/ clean energy (including support for locally produced green energy alongside signing long-term LNG deals with Qatar), as well as a revival of investment in nuclear and coal-sourced energy to ensure energy security. Food prices also saw a substantial jump in the aftermath of the Russia-Ukraine war: the United Nations Food and Agriculture Organization’s (FAO) Food Price Index jumped

by a record-high 12.6% month-on-month in March 2022. Both shocks led to dislocations in global supply chains, disrupting access to markets for many commodity producers. Rising geopolitical tensions are also leading to further global fragmentation and restructuring of global value chains that are affecting trade as well as investment patterns.

While commodity exporting nations are prone to pursuing procyclical fiscal policies post-pandemic, debt distress is emerging as a more severe problem as a result of higher interest rates and monetary tightening to combat inflation in the US and Europe. Countries that access debt markets during times of high commodity prices (e.g., to finance infrastructure) face fiscal and external payment strains when prices fall: this reduces access to

financial markets and decreases investment alongside deterioration of fiscal space, which in turn lowers government spending on economic development essentials such as healthcare and education. Additionally, falling commodity prices also results in lower foreign exchange reserves, lower credit ratings thereby negatively affecting access to financial markets and the ability to service of external debt. Currently, the situation is further heightened by high interest rates and higher inflation and cost-of-living<sup>21</sup>.

The bottom line is that demand and supply shocks during the pandemic and the ongoing wars as well as the planned energy transition to net-zero emissions increase the urgency for fossil fuel exporters to diversify – else these nations could potentially be left with lower valued assets or stranded assets. The next sections analyse the performance of commodity dependent nations over time, including those that have successfully diversified.

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<sup>21</sup> The 2014-2016 fall in oil prices led to a jump in public debt of oil producers like Nigeria. S&P sovereign risk indicators estimates, in 2023, some commodity-dependent developing countries have faced high levels of sovereign risk and debt distress, such as Ghana and Zambia.



Table 3.1 shows a heatmap of the EDI scores of the commodity dependent nations<sup>22</sup> tracked in the report, including Mexico<sup>23</sup>, an OPEC+ member and a highly ranked “diversified” nation. Thirty-nine countries out of the 112 countries covered in this EDI report are commodity exporters<sup>24</sup> and are present across all regions. Sub-Saharan African nations dominate (just over 35% of the total), followed by Latin America and the Middle East (together accounting for 40% of the total), while Western Europe is represented by only Norway and Iceland (both among the more diversified commodity producing nations).

**In the EDI sample, more than 50% of the commodity dependent nations are reliant on fuels.**

Within these nations, Norway is the better ranked nation, while the UAE and Bahrain stand out among the Middle East’s nations, despite their rankings being adversely impacted by the pandemic. The list of commodity exporters includes high and low-middle income nations in equal numbers, and among the high-income nations MENA dominate (and understandably, all fuel-exporters).

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22 Commodity dependent nations have been identified using two common measurements: a country is resource dependent if over 60% of its total merchandise exports in value terms consist of natural resources (UNCTAD; note that the IMF/ World Bank refer to a minimum threshold of 25%) and the ratio of natural resources rents to GDP is above 10%. Furthermore, these nations’ tax revenues as a percentage of GDP fall mostly below 20%. The list of commodity dependent nations, and by major product group, is specified in the Appendix.

23 Mexico, which followed import substitution policies in late 70s/ early 80s was also helped by multiple factors including investments in high-productivity manufacturing clusters (especially the automobile sector – accession to NAFTA played an important role in attracting FDI into this sector), investments into human capital for high-skilled workforce among others and its proximity to the US among others.

24 Some commodity-exporting nations including Algeria, Brunei, Chad, Equatorial Guinea, Iraq, Gabon, Libya, Venezuela and Yemen among others are not part of the overall list due to insufficient data in one or more of the sub-components.



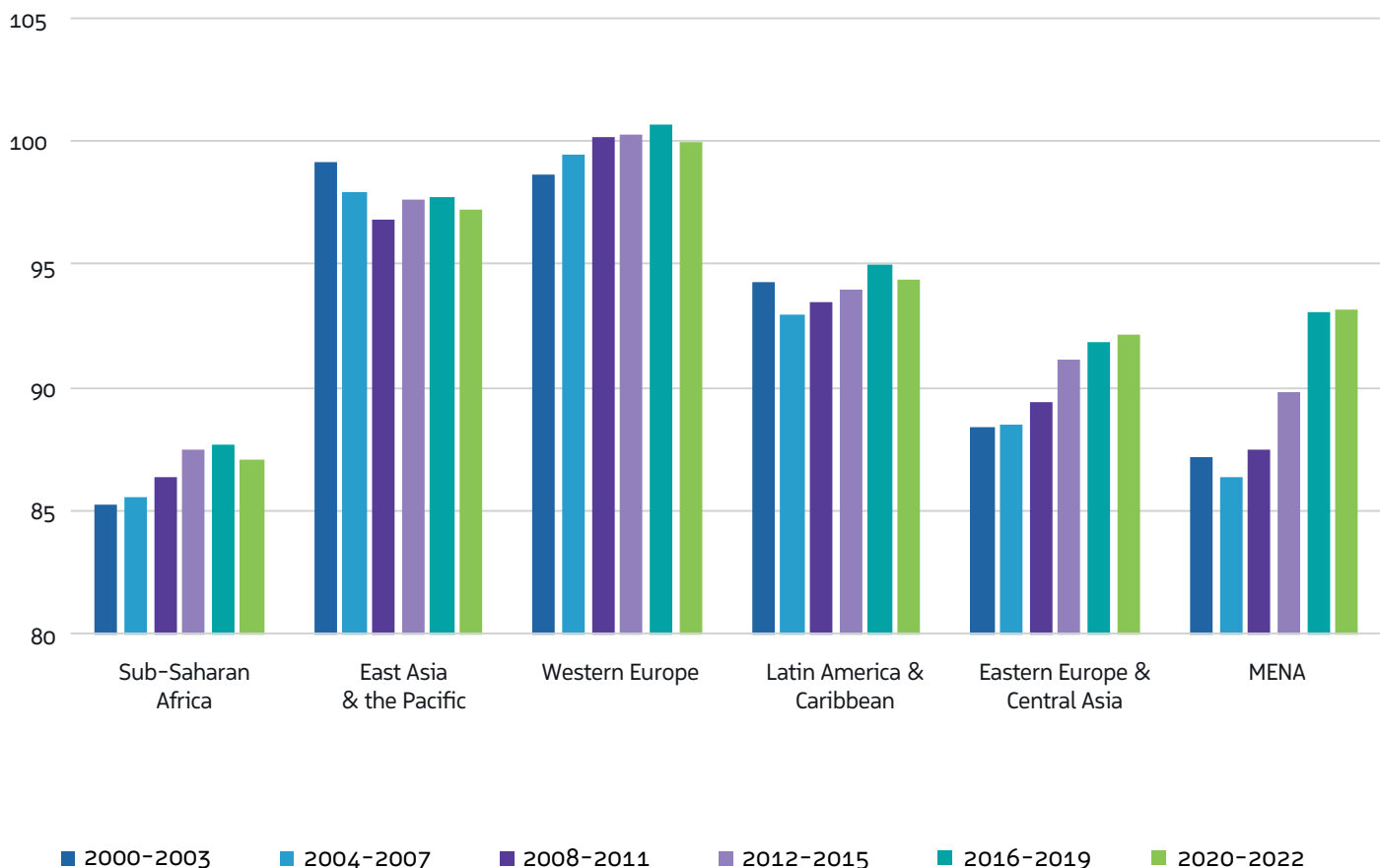
Table 3.1. Commodity dependent nations (+Mexico), EDI rankings heatmap

	2000	2004	2008	2012	2016	2019	2022
Mexico	26	29	30	28	23	23	26
Malaysia	30	31	44	34	34	35	34
Australia	33	36	42	40	43	49	47
New Zealand	40	37	45	46	49	51	48
Iceland	51	48	49	52	53	54	53
Russian Federation	60	63	57	56	57	58	55
Argentina	41	54	52	44	51	56	56
Uruguay	46	64	61	62	62	63	63
Norway	53	50	54	55	47	50	66
Chile	56	59	71	72	73	71	69
United Arab Emirates	82	78	82	75	54	62	70
Colombia	63	66	69	78	68	70	72
Namibia	64	69	73	73	77	76	76
Bahrain	76	82	86	86	70	74	78
Jamaica	72	74	74	71	83	86	79
Peru	70	75	79	80	80	79	80
Paraguay	94	97	85	81	84	77	81
Kenya	86	80	78	76	79	81	83
Cote d'Ivoire	89	84	95	97	89	89	85
Ecuador	91	92	99	98	90	91	89
Iran	96	99	98	82	85	88	90
Saudi Arabia	105	103	104	103	82	78	91
Kazakhstan	104	93	94	90	87	90	93
Zambia	83	88	96	94	100	97	94
Bolivia	77	86	100	101	94	95	95
Cameroon	99	94	84	96	97	99	96
Qatar	100	101	103	93	75	84	97
Mozambique	88	95	91	92	98	104	99
Uganda	98	87	90	84	99	101	100
Rwanda	97	106	97	99	104	102	101
Oman	109	109	109	102	101	94	102
Ghana	107	108	102	104	105	103	103
Kuwait	106	105	106	109	103	106	104
Congo	111	111	110	110	93	111	105
Nigeria	103	104	101	105	106	100	106
Ethiopia	108	107	107	106	108	105	108
Mongolia	101	102	108	107	109	110	109
Niger	102	100	105	108	110	108	110
Azerbaijan	110	110	112	111	111	109	111
Angola	112	112	111	112	112	112	112

Lowest Ranking  Highest Ranking

# Have commodity dependent nations diversified?

Chart 3.2. EDI across commodity producers, by region



## Economic diversification scores across regional groupings show a volatile pattern over time.

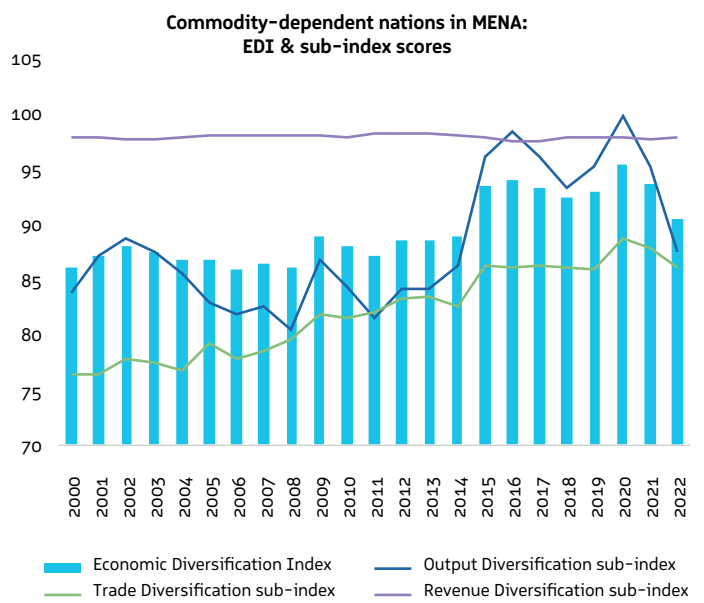
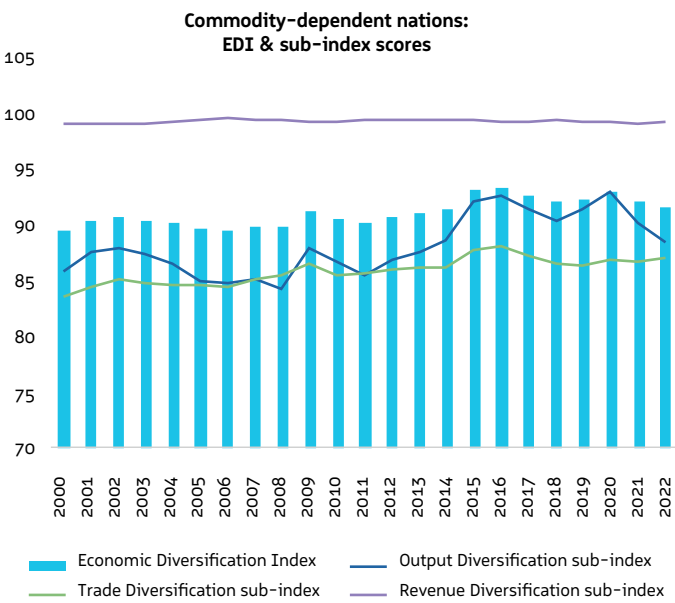
Sub-Saharan Africa’s commodity exporters posted the lowest scores over time, with the 2020-2022 average score falling below the 2012-2015 period, underscoring not only the pandemic’s negative impact on performance but also the divergent paces of recovery. Even Western Europe’s Norway and Iceland, that had been diversifying over time, saw their scores fall

during 2020-2022. Only the MENA region and Eastern Europe & Central Asia region reported a slight improvement in the 2020-2022 period, and all countries in both regions are fuel exporters (however, a breakdown by year show that the scores declined in 2022 vis-à-vis the previous 2 years, as can be seen also from Chart 3.3 on the next page).

The first panel of Chart 3.3, which tracks the EDI and its sub-indices scores for commodity producers, shows a steady increase in overall scores (from 90.1 in 2000-2003 to 92.5 and 92.1 in 2016-2019 and 2020-2022 respectively). Revenue diversification scores have been relatively stable, around the ninety-mark, for the entire duration as opposed to a

more volatile Output sub-index. A subset of the MENA region's commodity exporters, in contrast, shows a jump in average EDI scores from 87.1 in 2000-2003 to 93.1 in 2020-2022, thanks to a relatively volatile Output sub-index and steady pickup in trade scores.

Chart 3.3. Commodity dependent nations' overall EDI performance (& by sub-index)



- To gauge the performance of oil producers, Chart 3.4 tracks OPEC+ oil producers – separately as Middle East and non-Middle East members.
- While the UAE and Bahrain have higher EDI scores compared to their peers, the latter’s gains have not been as consistent. Thanks to a spate of reforms implemented in recent years, Saudi Arabia and Oman have both gained over ten points in 2020-2022 compared to their EDI score in 2000. Despite Oman’s gains, it still is among the lowest ranked globally alongside Kuwait – a nation that is still subject to internal squabbles relating to economic reforms.
- Among the non-Middle East OPEC+ members, Mexico and Malaysia are the highest ranked, both having undertaken measures including horizontal and vertical diversification, as well as forming manufacturing/ investment clusters and investing in human skills. Furthermore, the low to middle-income nations such as Angola, Congo and Nigeria remain within the lowest quartile consistently (also considered to have poor governance scores and/ or politically unstable).



Tables 3.2 to 3.4 below show the changes in scores by sub-indices for the commodity producers

Chart 3.4. Economic Diversification Index Scores across OPEC+ members



# Commodity Producers Output Diversification

New Zealand, Iceland and Australia have largely remained within the top 3 ranked in the output diversification sub-index.

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Almost all commodity producers have posted lower output scores in 2022 compared to the pre-pandemic 2019, the exceptions being Congo, Nigeria, and Zambia. These three nations were supported by a common factor of higher services to GDP values in 2022 versus pre-pandemic.

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The high-income oil producers like Bahrain, UAE, Norway, Qatar and Saudi Arabia, which had seen improvements in output scores in 2016 and 2019 (dark-green backdrops) saw lower scores in 2022: though industrial sector as a percentage of GDP increased, services sector shares slipped due to the effects of the pandemic which negatively impacted the services sectors. For example, in Norway and Qatar, industry's share jumped to 49% and 66% (from 30% and 57% respectively in 2019) while services slipped to 42% and 38% (from 57% and 46% in 2019).



Table 3.2. Commodity producers, EDI Output sub-index scores, heatmap

	2000	2004	2008	2012	2016	2019	2022
New Zealand	106.1	110.0	108.0	107.6	108.6	108.6	108.3
Iceland	101.7	105.5	106.3	107.4	108.4	108.9	107.9
Australia	110.0	109.1	107.3	107.8	109.2	107.1	105.6
Malaysia	103.1	102.6	97.6	101.1	105.6	106.8	104.2
Argentina	108.5	99.0	100.6	103.4	104.7	103.1	102.5
Uruguay	103.4	97.2	99.7	100.0	103.8	104.7	102.1
Jamaica	100.3	100.1	101.3	101.4	98.9	98.1	97.5
Russian Federation	94.7	95.1	95.0	98.1	101.4	98.8	97.2
Bahrain	92.4	95.5	91.3	93.3	105.2	101.9	96.4
United Arab Emirates	97.5	97.2	88.5	88.2	103.6	101.3	96.2
Colombia	98.1	96.1	94.6	94.5	99.1	99.2	96.2
Chile	100.9	101.1	93.6	94.3	96.8	99.7	95.4
Norway	99.9	102.2	100.1	101.7	106.3	106.3	95.2
Paraguay	88.9	86.9	92.1	95.4	95.4	97.0	94.6
Namibia	92.9	93.9	88.6	92.0	94.5	95.9	93.1
Peru	95.5	93.6	89.7	90.4	95.2	95.4	92.6
Ecuador	85.9	89.6	84.3	85.1	92.5	93.0	91.9
Côte d'Ivoire	83.6	84.2	83.2	83.9	90.7	90.8	89.6
Zambia	87.9	82.0	81.1	86.0	85.8	88.4	88.8
Iran	88.9	88.4	86.3	93.6	97.4	92.3	88.6
Kazakhstan	81.9	83.4	82.1	87.2	94.0	91.8	87.7
Qatar	84.3	83.2	77.9	88.9	103.3	100.7	87.6
Kenya	83.4	84.9	85.3	90.1	90.0	89.1	87.5
Cameroon	81.3	86.8	85.1	86.7	86.9	86.9	86.1
Bolivia	88.6	86.3	82.2	81.6	89.8	89.3	86.0
Nigeria	80.0	80.1	83.3	86.1	96.2	89.1	84.8
Saudi Arabia	75.0	78.0	71.1	74.9	98.1	93.2	84.1
Oman	68.5	73.0	70.0	80.6	88.5	91.8	80.4
Mozambique	84.8	84.5	81.0	78.7	76.8	75.3	79.9
Rwanda	77.5	74.6	81.0	81.1	79.2	81.5	79.6
Kuwait	79.6	83.6	77.5	69.3	91.9	85.1	79.2
Uganda	75.8	80.3	77.2	80.1	80.5	81.1	79.0
Ghana	62.3	60.7	74.7	75.4	79.8	81.3	78.4
Congo	50.1	61.5	54.5	56.7	76.7	67.1	73.2
Mongolia	72.6	71.5	66.6	75.7	79.6	74.7	72.6
Niger	83.8	75.7	70.6	69.7	70.9	71.1	72.2
Azerbaijan	64.5	64.3	56.9	65.0	76.2	72.9	69.1
Angola	47.1	66.8	57.4	66.3	75.9	71.3	67.3
Ethiopia	65.0	64.0	62.2	63.6	68.4	70.7	64.6

Lowest Score  Highest Score

# Commodity Producers Trade Diversification

Global trade has been recovering quickly in the post-pandemic era.

According to the WTO, the value of merchandise trade expanded in 2022, partly due to higher global commodity prices, with the highest growth rates seen in the oil-rich Middle East region. Global exports of fuels and mining products grew on average by 19% per year between 2019 and 2022, reaching USD 5,158bn in 2022. This is seen in a corresponding decline in trade diversification scores in 2022.

However, Congo, Kazakhstan, and Oman, for example, which saw fuel exports as a share of total exports fall in 2022 (compared to 2019) have seen an uptick in their Trade sub-index scores. Reduced exports concentration and a change in the composition of exports were factors that supported an improvement in Trade sub-index scores pre-pandemic.



Table 3.3. Commodity producers, EDI Trade sub-index scores, heatmap

	2000	2004	2008	2012	2016	2019	2022
Malaysia	109.4	109.8	108.7	110.1	110.3	111.2	112.4
Russian Federation	92.9	94.0	99.3	100.2	99.0	101.2	102.5
Argentina	96.1	95.6	98.9	100.6	99.0	97.3	97.0
Australia	97.8	98.3	96.7	97.8	96.9	96.6	96.9
New Zealand	96.1	96.6	95.0	94.3	94.1	92.9	93.1
Kenya	89.0	91.7	93.5	94.0	93.5	93.4	92.8
Chile	89.7	89.3	90.3	89.7	89.9	88.9	91.8
Norway	88.4	90.2	93.4	92.7	96.8	95.2	91.3
United Arab Emirates	75.1	81.9	84.9	94.5	100.9	96.3	91.1
Uruguay	95.5	91.9	92.8	92.8	92.4	91.1	91.0
Namibia	91.0	92.3	94.0	92.4	90.1	89.3	91.0
Colombia	89.1	92.8	91.5	85.0	91.0	89.4	90.9
Saudi Arabia	76.2	79.0	81.8	85.3	86.6	91.2	89.9
Iceland	88.9	90.8	92.8	89.9	90.1	90.7	89.4
Côte d'Ivoire	84.6	90.4	83.1	84.2	88.3	87.1	88.9
Ethiopia	81.7	85.2	90.0	88.2	90.7	90.6	88.6
Peru	88.4	88.0	88.2	88.2	87.8	87.5	88.4
Bahrain	88.6	79.9	82.0	82.8	87.5	86.8	87.8
Paraguay	72.6	78.4	81.4	83.8	86.1	88.3	87.2
Uganda	85.5	90.6	91.0	95.5	91.8	84.1	87.0
Iran	72.9	76.1	78.3	83.1	84.4	86.3	85.8
Rwanda	83.5	73.0	82.9	83.0	85.2	81.6	85.5
Congo	69.9	78.6	77.4	80.8	98.3	74.4	85.4
Ghana	86.5	85.2	87.4	84.6	84.9	82.9	85.3
Mozambique	86.5	81.6	86.5	89.7	94.6	83.9	85.2
Oman	76.5	72.3	76.3	81.0	83.1	83.1	85.1
Kazakhstan	68.6	82.0	83.1	83.7	86.2	84.3	84.4
Zambia	84.6	87.0	82.5	81.9	85.8	82.7	83.0
Cameroon	77.7	80.0	88.9	81.1	87.1	80.7	83.0
Ecuador	80.8	78.2	78.2	79.9	84.1	82.1	82.8
Jamaica	81.8	79.9	79.3	82.6	81.0	79.4	82.3
Bolivia	88.9	82.4	76.8	78.5	82.9	82.4	81.7
Kuwait	69.9	70.9	74.0	75.6	75.5	75.4	81.4
Qatar	75.5	76.7	79.1	80.3	84.1	81.8	81.0
Nigeria	73.5	76.4	79.2	73.7	70.1	79.7	76.0
Niger	75.8	84.5	81.8	79.4	83.5	80.4	75.9
Azerbaijan	75.0	76.8	67.9	69.8	73.3	73.7	75.7
Mongolia	84.8	83.2	76.8	71.7	75.6	70.8	75.0
Angola	66.3	63.0	65.3	65.0	70.7	66.3	66.9

Lowest Score  Highest Score

# Commodity Producers Government Revenue Diversification

Norway and Iceland have the highest scores among commodity producers (they ranked second and fifth globally in this sub-index in 2022).

While the scores for 2022 are bunched up between the range of 96.8 to 103.5, only 11 countries have scores above 100.

Norway's tax revenue as a percentage of GDP stands at a high 30%+ and compares to single digit readings in countries such as Bahrain, Iran and Qatar among others.

**The GCC countries have been diversifying tax structures, with the UAE and Saudi Arabia launching VAT in 2018, followed by Bahrain and Oman in 2019 and 2021 respectively.** Saudi Arabia additionally hiked the VAT rate in 2020, resulting in an increase in non-oil revenues, and the UAE is introducing a phased corporate tax over 2024-25.



Table 3.4. Commodity producers, EDI Revenue sub-index scores, heatmap

	2000	2004	2008	2012	2016	2019	2022
Norway	104.0	103.9	103.7	103.5	102.8	103.0	103.5
Iceland	103.3	103.4	103.1	102.7	104.3	102.6	103.1
New Zealand	102.6	102.8	102.3	102.0	102.0	101.9	102.2
Australia	102.2	102.1	101.4	101.3	101.2	101.2	101.5
Bolivia	100.1	100.5	101.5	101.5	101.0	100.2	101.1
Jamaica	100.5	100.7	100.8	101.0	101.4	99.5	100.8
Angola	102.0	100.4	102.5	100.9	98.2	98.6	100.3
Mongolia	99.4	100.4	101.0	99.9	99.5	100.3	100.2
Russian Federation	100.4	100.0	99.7	99.5	99.9	100.3	100.0
Argentina	98.8	99.7	99.9	100.4	100.6	100.2	100.0
Chile	99.6	99.8	100.1	100.2	100.0	100.1	100.0
Uruguay	99.4	99.9	100.3	99.6	99.7	99.8	99.8
United Arab Emirates	100.1	99.7	100.9	100.7	98.1	99.3	99.7
Mozambique	97.5	97.9	98.7	99.9	99.9	101.0	99.7
Namibia	100.9	98.5	99.2	99.5	99.9	99.7	99.5
Congo	98.6	99.0	100.9	100.0	99.3	97.2	99.5
Colombia	98.5	98.9	99.4	100.0	99.8	100.2	99.4
Azerbaijan	97.8	98.5	100.3	99.3	99.4	99.6	99.4
Peru	98.9	99.0	99.3	99.4	98.8	99.0	99.1
Zambia	99.8	99.2	99.0	99.0	98.8	99.3	99.1
Kazakhstan	99.4	99.5	99.4	99.2	98.1	98.4	99.0
Malaysia	98.6	98.9	99.0	99.3	98.9	98.6	99.0
Rwanda	98.3	98.2	98.6	99.3	99.5	99.5	98.9
Ecuador	98.2	98.2	98.8	99.1	98.9	99.0	98.7
Kenya	97.7	97.9	98.5	98.8	99.5	99.0	98.5
Cameroon	98.1	97.8	98.3	98.3	98.4	98.5	98.3
Kuwait	98.2	97.8	98.0	98.4	97.8	97.9	98.1
Paraguay	98.0	98.0	97.9	98.2	98.3	98.3	98.1
Uganda	97.3	98.2	98.0	97.9	98.4	98.6	98.0
Ghana	97.3	98.0	97.5	97.9	98.3	98.4	97.8
Niger	97.1	97.5	97.7	97.9	97.8	97.8	97.6
Qatar	97.1	97.7	97.5	98.4	97.7	97.8	97.5
Saudi Arabia	97.3	97.5	98.1	97.8	96.9	97.7	97.5
Oman	97.7	97.6	97.6	97.8	97.2	97.7	97.5
Ethiopia	97.0	97.1	96.9	97.2	97.7	97.4	97.3
Iran	97.5	96.9	97.2	97.1	97.6	97.5	97.2
Côte d'Ivoire	97.0	96.7	97.2	97.2	97.8	97.8	97.2
Nigeria	97.9	97.3	97.4	97.4	96.5	96.8	97.1
Bahrain	97.0	96.9	96.8	96.8	96.4	97.2	96.8

Lowest Score  Highest Score

Chart 3.5 plots resource rents as a percentage of GDP on the y-axis and the economic diversification index score on the x-axis, and tracks the pattern of only those countries that have a higher-than-average reading of resource rents as a percentage of GDP.

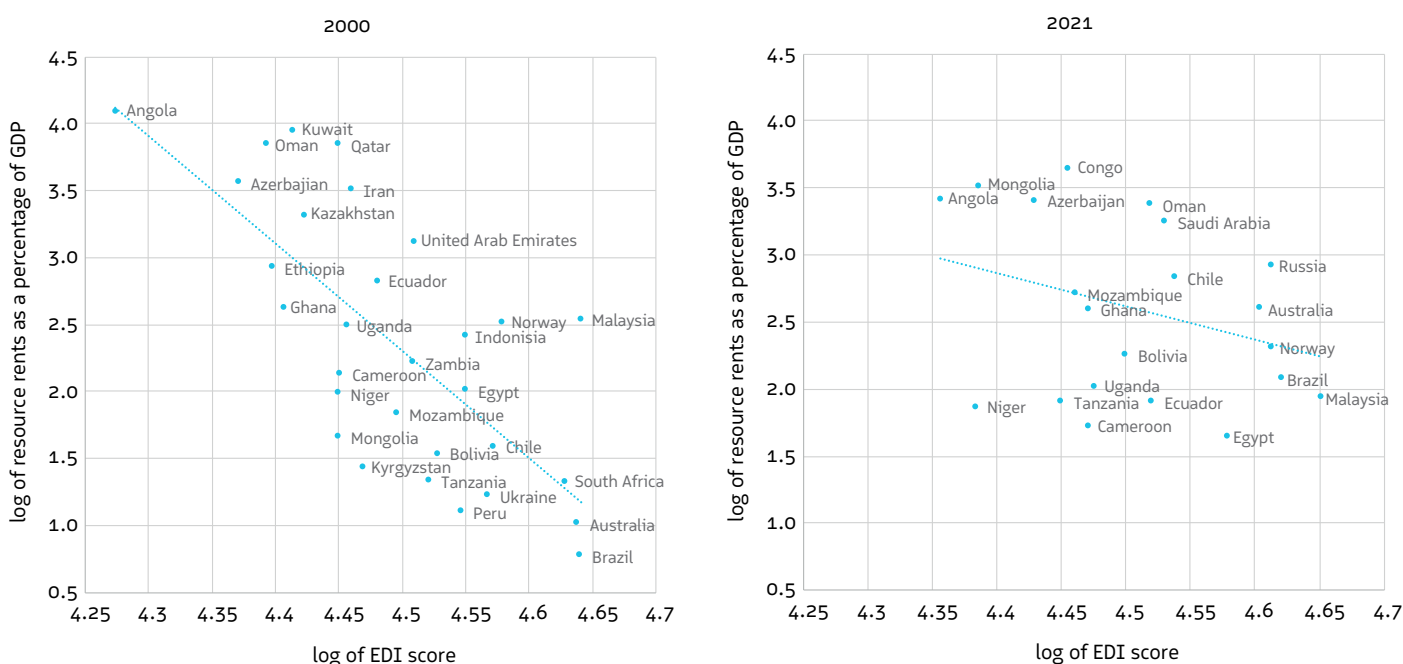
### Three findings from the charts are:

**The higher the resource rents as a percentage of GDP, the lower the score on the economic diversification index.** This negative correlation is visible in both 2000 and 2022 but the slope of the trend line has become much flatter in 2022 compared to 2000;

**Around thirteen countries have increased the share of resource rents** (e.g., Zambia from a share of 9% to 35% in 2021. About 69% if its merchandise exports were of copper). The majority of countries, however, have drastically reduced their share: Congo reduced its share to under 30% from close to 60% while Saudi Arabia reduced its share to around 25% from above 40%. The drop in resource rents, however, does not result in a comparable change in scores, as other indicators also affect the EDI score. Angola, which saw the sharpest decline in resource rents share, was not the country that posted the highest increase in EDI score when comparing 2021 versus 2000;

**Countries that reduced (increased) the share of resource rents have seen an increase (decline) in EDI scores.** However, this is only one of the indicators that goes towards the calculation of the EDI – hence the plot signifies correlation and not causation. Niger is an example of this – it witnessed a slight decline in its share of resource rents (from 7.3% to 6.4%) but it also saw a decline in its EDI score.

Chart 3.5. Scatter chart with EDI scores and resource rents as a percentage of GDP



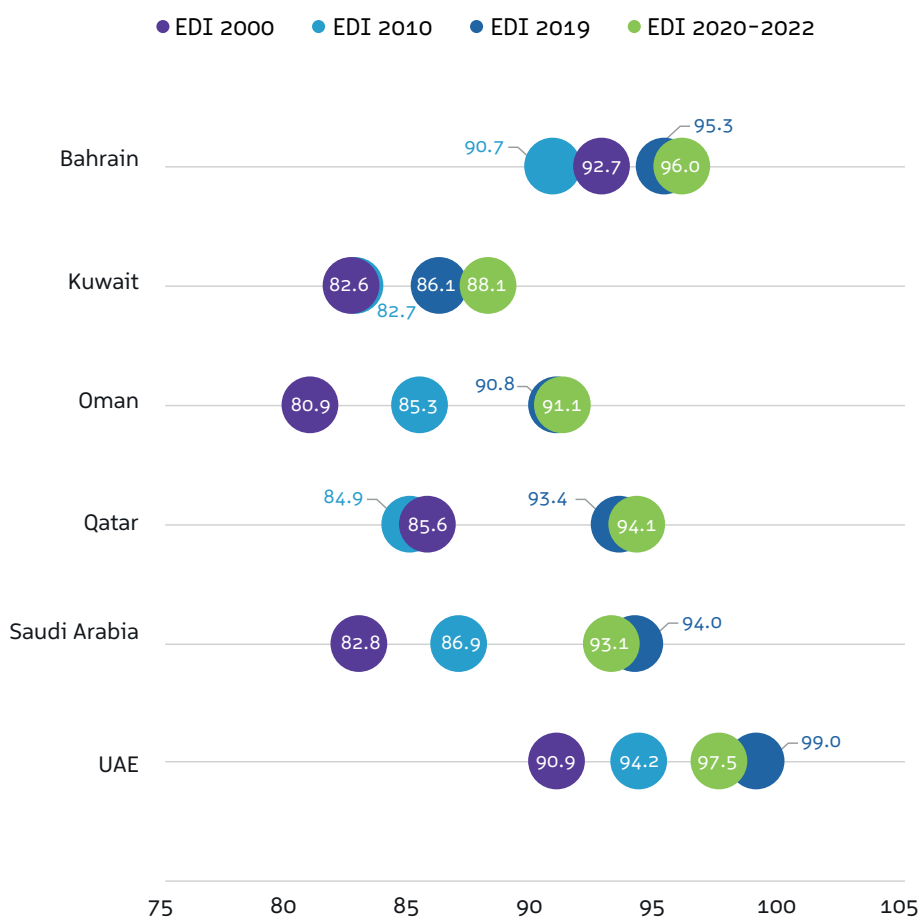
# Economic Diversification in the GCC

The EDI scores across the GCC show an interesting picture: past EDI editions showed that Bahrain had been the frontrunner in terms of diversification in 2000 before being surpassed by the UAE, as the country undertook multiple reforms including the creation of free zones that successfully attracted investments and resulted in job creation, active private sector participation and attracted FDI.

Kuwait remains the laggard among the GCC nations, with overall score still below 90, while Saudi Arabia and Oman have improved the most over time. Interestingly, all GCC nations saw EDI scores decline in 2022, with the biggest drop coming from the Output sub-index.

Both the UAE and Saudi Arabia saw their overall average EDI scores in 2020-2022 remain below pre-pandemic levels, with declines in both output and Trade sub-indices, given the impact of the pandemic on trade and services.


Chart 3.6 EDI performance across the GCC



## The GCC has been undertaking reforms at a much aggressive pace after the pandemic including:

- The UAE's aggressive push to raise non-oil trade (via CEPAs and ongoing FTA negotiations), plans to raise the industrial sector's contribution (in the high value-added space) and introduction of corporate reforms;
- Saudi Arabia's push to raise non-oil GDP via the opening up new sectors (industry, tourism, entertainment) and mega projects (NEOM and others);
- Oman's fiscal consolidation plans including expenditure reduction spending and plans to broaden/ diversify its tax base;
- Labour market reforms such as providing attractive long-term visas to attract high-skilled workforce and tech/ blockchain/ AI firms, legislations that prohibit gender-based discrimination (in Saudi Arabia, UAE and Bahrain), introduction of a minimum wage and abolishing the sponsorship system (in Qatar) and reforms to raise female labour force participation rates (in Saudi Arabia);
- Reforms to improve regulatory and business environment to attract private and foreign investment (in Qatar and Saudi Arabia); and
- Diversifying its energy sources to increase renewable energy capacity (as the countries race to meet their NZE targets) among others.





## Revenue mobilisation (via broadening of taxes) has been underway in the GCC since 2015–2016:

Introduction of excise taxes (and its broadening in the UAE and Oman)

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The doubling of VAT in Bahrain in 2022 (to 10%)

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Saudi Arabia's VAT at 15% (in 2020) and the

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UAE's corporate income tax in 2023, though no personal income tax is levied in any of the countries.

While the taxes have diversified the sources of revenue, IMF (2023a) finds that there has been no significant impact of VAT on either non-oil GDP growth or on private consumption. Governments have also been diversifying their “national asset” portfolios, by investing in economic institutions (e.g., debt management offices that will help rationalise spending and rein in fiscal deficits; export promotion agencies that support diversification of trade partners/ destinations/ products). These reforms will support diversification efforts on all three fronts and will provide long-term economic resilience.

## Chapter 4

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# The Way Forward







## For countries dependent on commodities, economic diversification is a gradual, transformative process.

The EDI scores have shown that while improvements are achievable (be it through diversification into new economic sectors or reducing product concentration or broadening tax revenues), the progress has not been even, causing the existing gap between various commodity producing nations to increase. The reasons could vary, ranging from factors related to political instability, poor institutional governance, inefficient infrastructure facilities or adoption of technology.

Following up on the importance of the digital economy post-COVID, this year's report introduced for the first time, digital-trade related indicators for 106 countries, in a bid to compute the contribution of some aspects of the digital economy to economic diversification.

Data gaps constrained a wider analysis on the full impact of the digital economy on diversification. However, the EDI aims to contribute to ongoing global debates about how to best measure the digital economy, specifically in terms of its contribution to diversification efforts. We anticipate that this will be the first step with potential improvements in data availability, coverage and measurements in the years to come. A clear outcome is that digital trade positively improves trade diversification, notably through the ability to export services at scale.

**Another discussion that is becoming increasingly more relevant is that of climate change and how vulnerable the commodity-dependent nations can be to rising sea levels or extreme weather events (such as the 2023 catastrophe in Libya's Derna valley basin or Pakistan's floods which displaced 33 million people).**

Furthermore, as countries try to adapt to and mitigate climate change risks, energy transition investments, such as renewable energy, can play a key role in transforming economies and output structures. Fossil fuels are likely to remain in the global energy mix for decades, but a potential sustained decline in its demand necessitates the roll-out of diversification policies at the earliest.

**Many of the oil-exporting nations in the Middle East are already embracing the opportunities to diversify energy sources: focus has been on renewable energy given the plentiful solar and wind resources, while green hydrogen presents another output and trade diversification opportunity, which many nations in the region are tapping into.** These also have the added domestic benefits of the creation of new sectors, related jobs and lead to greater private sector participation. Exporting clean energy from these currently commodity-dependent nations could widen their export base (both in terms of products and trade partners).

For countries that are dependent on commodities exports, a transition to a low-carbon economy might also entail high fiscal costs. These countries also need to reduce domestic emissions over time (including from extractive industries), further adding to fiscal costs. These would hit the lower-income nations more, as many of them are already burdened by high debt levels.

In this backdrop, regional integration would aid diversification efforts of commodity producers, that are concentrated more in the MENA and Africa regions. Increasing intra-regional trade in these parts would help export diversification; regional trade agreements and/ or agreements could also lower trade costs thereby generating demand for specific goods and services (outside of the traditional commodity exports). These agreements could also allow for linkages in different stages of value chains, a win-win situation, that would enable these regions to develop regional value chains and improve their standing in global value chains.

For countries with large mineral resources used in energy transition (e.g., copper, lithium, cobalt), this will be a significant opportunity to link with domestic or regional value chains<sup>25</sup>.

<sup>25</sup> The Democratic Republic of the Congo and Zambia recently agreed to jointly manufacture precursors to electric car batteries, making use of their mineral resources.



Finally, the 2024 edition of the EDI introduced an attempt to expand our understanding of the economic diversification in the digital age. While challenging in terms of data and coverage, the importance of this missing component of economic diversification measurement will only grow in the age where novel economic activities, fuelled by cross-boarders data exchanges and activities, multimodal Large-Language Models and artificial intelligence applications are poised to transform economies in the near future.

## Chapter 5

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# Appendix A

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Why?

Components,  
Methodology<sup>26</sup>







# Economic diversification is key to addressing these macroeconomic stability, economic growth, and development issues.

**To address these risks, oil & gas exporters and other commodity exporters have focused on economic diversification as a policy priority and objective of their economic strategies.**

Economic diversification leads to more balanced economies and is key to sustained economic growth and development. For the GCC and other fossil fuel producers and exporters it would help reduce exposure to volatility and uncertainty in the global oil market and avoid the related boom-bust cycles. More diversified economies are less volatile in terms of outputs, while lower output volatility is associated with lower overall economic uncertainty for households, businesses and governments and higher economic growth prospects.

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<sup>26</sup> The detailed version of this Appendix can be found in the Global Economic Diversification Index 2022 report, Chapters 1 to 3. Access the report online <https://economicdiversification.com>

## Economic diversification can further support:

- A. Re-orienting economies towards more knowledge based and innovation-led activities.
- B. Greater private sector activity, including in the tradables sector.
- C. Lead to greater skill diversity in the labour force, facilitate mobility and lower transition costs, job creation, raise productivity growth and generate more sustainable growth.
- D. Provide more sustainable public finances that are less dependent on revenues from natural resources.
- E. Encourage private sector investment given more stable economic growth rates.
- F. Generate greater overall macroeconomic stability including of disposable income and consumption.

Economic diversification is a multi-dimensional, complex and dynamic phenomenon, involving the diversification of economic activity, the diversification of international trade (products, services and countries) as well as the diversification of government revenues away from a dependence on natural resource or commodity revenue: the three components of the Economic Diversification Index.

### A. COMPONENTS

#### B. TRADE DIVERSIFICATION

#### C. GOVERNMENT REVENUE DIVERSIFICATION

## A. COMPONENTS

The basis for the output or activity diversification stems from the fact that structural transformation from the natural resource sector to sectors that generate higher value added and higher productivity is considered imperative for a sustainable development path. To this end, such sectors can be a source of long-term growth only if these are able to generate a sustained increase in productivity over time. Identifying the sectors of economic activity – agriculture, industry/ manufacturing, and services – is the main set of indicators within this category. The share of each sector's value added to GDP has been used, so that comparisons can be made across countries and time. Many oil-exporting nations group petroleum/ mining and quarrying under the broader industry category, so, additional indicators – manufacturing value added per capita and medium- and high-tech manufacturing value added in total manufacturing value added – are used to gauge industrialization intensity and a shift to high-tech manufacturing.

### Production/ Activity Diversification Indicators

Real GDP

Agriculture value added as a percentage of GDP

Gross fixed capital formation as a percentage of GDP

Industry value added as a percentage of GDP

Manufacturing value added as a percentage of GDP

Resource rents as a percentage of GDP

Services value added as a percentage of GDP

Medium- and high-technology manufacturing value added share in total manufacturing value added

Manufacturing value added per capita

## B. Trade diversification

The basis for the output or activity diversification stems from the fact that structural transformation from the natural resource sector to sectors that generate higher value added and higher productivity is considered imperative for a sustainable development path. To this end, such sectors can be a source of long-term growth only if these are able to generate a sustained increase in productivity over time. Identifying the sectors of economic activity – agriculture, industry/ manufacturing, and services – is the main set of indicators within this category. The share of each sector’s value added to GDP has been used, so that comparisons can be made across countries and time. Many oil-exporting nations group petroleum/ mining and quarrying under the broader industry category, so, additional indicators – manufacturing value added per capita and medium- and high-tech manufacturing value added in total manufacturing value added – are used to gauge industrialization intensity and a shift to high-tech manufacturing.

Trade Diversification Indicators
Total value of exports
Fuel exports as a percentage of merchandise exports
Export market concentration index (Hirschman-Herfindal Index, HHI)
Total value of imports
Manufactured exports as a percentage of total merchandise exports
Medium- and high-technology manufactured exports as a percentage of manufactured exports
Merchandise exports as a percentage of GDP
Total value of services exports
Export product concentration index
Import product concentration index

## C. GOVERNMENT REVENUE DIVERSIFICATION

It is another dimension of a nation’s extent of diversification. Countries with limited economic diversification typically also have a highly concentrated government revenue (tax and non-tax) structures, with a high dependence on limited sources of revenue, such as trade and natural resource taxation. Governments with a highly concentrated tax/revenue base dependent on natural resource revenues become fiscally constrained, with limited fiscal space to address economic shocks or undertake investment. The literature on the procyclical nature of fiscal policy in commodity-producing nations is clear: public spending increases (declines) during periods of higher (lower) commodity prices leading to pro-cyclical fiscality; lack of automatic stabilizers and low non-oil tax bases add to the problem.

Government Revenue Diversification Indicators
Excise tax revenue as a percentage of GDP
Income tax revenue as a percentage of GDP
Goods & services tax revenue as a percentage of GDP
Tax revenue as a percentage of GDP
Total revenue as a percentage of GDP
Trade revenue as a percentage of GDP

# Methodology

The econometric setting for the EDI is a panel with a significant number of cross-sections: this consists of a large number of indicator series and relatively short time series. The objective is to design a weighting scheme such that the large number of indicators can be reduced to a smaller number of diversification indices: potentially three (output, trade, and government revenue), and/or one (diversification).

In developing an index like the EDI, a key requirement is that scores be comparable across countries and through time.

As such, each EDI observation must be based on the same underlying indicators. While many statistical techniques can deal easily with missing values for one of a set of indicators, the case of a multi-indicator index is different. To take a simple example, consider an index based on two indicators, A and B, which are aggregated by taking the arithmetic (simple) mean. If B is missing for one country, then the mean is simply A. If A is missing for another country, then the mean is simply B. If both series are observed for a third country, then the mean is  $(A+B)/2$ . So, the three index scores in this case are not comparable, even if all variables are measured on the same scale: each observation is based on different information sets.

In the context of the EDI, this requirement would mean that the index could only be calculated for those country and year pairs where all component indicators are observed. This constraint is a major one, which would significantly reduce coverage in both the country and time dimensions.

**To ensure the broadest coverage of countries and years in this exercise, the dataset is pre-treated using linear interpolation and extrapolation to fill in missing observations to the extent possible<sup>27</sup>.**

The output is hence a complete input dataset for 112 countries for the 2000–2022 period.

The Principal Components Analysis<sup>28</sup>, a standard dimensionality-reduction technique, was used to generate the results. The strategy for applying PCA to the detailed indicators relied on two steps. The first was to use PCA to produce the three sub-indices: output, trade, and revenue<sup>29</sup>. The second was then to aggregate the three sub-indices into an overall EDI by taking the arithmetic (simple) mean.

<sup>27</sup> Where linear interpolation and extrapolation could not provide appropriate readings, the series mean was used.

<sup>28</sup> An indicator produced using PCA is the linear combination of the indicators that accounts for the maximum possible proportion of the total variance in the set of underlying indicators.

<sup>29</sup> Indices are produced using the standard sum of squares approach, and are converted from variables with mean zero and unit standard deviation to variables with mean 100 and standard deviation 10.

The rationale for using the simple mean in the second stage is that it is the simplest and most transparent approach, and there is no a priori reason for believing that any one of the three sub-indices is more important to the overall measurement of economic diversification than the others. The factor loadings produced by the PCA are shown below.

The loadings in Table A.4 show that real GDP, manufacturing and services as a percentage of GDP, medium and high technology manufacturing as a percentage of GDP, and manufacturing value added per capita correlate positively with the EDI output sub-index, while the remaining variables correlate negatively. This finding is intuitive in most cases, but the contrast between industry and services shows that the data tend to support the importance of the services sector as a determinant of output diversification.

Table A.4. PCA loadings for the EDI output sub-index

Variable	Loading
Real GDP	0.2418
Agriculture value added as a percentage of GDP	-0.3818
Gross fixed capital formation as a percentage of GDP	-0.0514
Industry value added as a percentage of GDP	-0.1672
Manufacturing value added as a percentage of GDP	0.2504
Resource rents as a percentage of GDP	-0.3246
Services value added as a percentage of GDP	0.4597
Medium and high technology manufacturing value added share in total manufacturing value added	0.4434
Manufacturing value added per capita	0.4349

The loadings in Table A.5 shows that export market concentration, product concentration of exports and imports, and fuel exports are all negatively correlated with trade diversification, but the remaining variables are positively correlated.

This result is intuitive, as the positively correlated variables all capture aspects of country performance that suggest deeper integration into the global trade system. The case of fuel exports is important, as it suggests that countries with significant reliance on that sector tend to be less diversified from a trade point of view. It therefore complements the finding on revenue diversification (in Table A.6), where resource rents (for instance, from extractive industries) are negatively correlated with revenue diversification.

Table A.5. PCA loadings for the EDI trade sub-index

Variable	Loading
Total value of exports	0.4376
Fuel exports as percentage of merchandise exports	-0.2246
Export market concentration index (Hirschman-Herfindahl Index, HHI)	-0.1396
Total value of imports	0.4422
Manufactured exports as a percentage of total merchandise exports	0.3430
Medium and high technology manufactured exports as a percentage of total manufactured exports	0.3538
Merchandise trade as a percentage of GDP	0.0416
Total value of services exports	0.4313
Export product concentration index	-0.3309
Import product concentration index	-0.0551

Table A.6. PCA loadings for the EDI revenue sub-index

Variable	Loading
Excise tax revenue as a percentage of GDP	0.3791
Income tax revenue as a percentage of GDP	0.4367
Goods and services tax revenue as a percentage of GDP	0.4432
Tax revenue as a percentage of GDP	0.4992
Total revenue as a percentage of GDP	0.4283
Trade revenue as a percentage of GDP	-0.1914

Table A.7 provides the loadings for the trade-plus (trade+) sub-index, which includes three additional indicators that capture activity related to the digital economy. All three digital indicators are seen to be positively correlated with trade diversification.

Table A.7. PCA loadings for the trade+ sub-index (including digital indicators)

Variable	Loading
Total value of exports	0.3821
Fuel exports as percentage of merchandise exports	-0.1990
Export market concentration index (Hirschman-Herfindahl Index, HHI)	-0.1428
Total value of imports	0.3813
Manufactured exports as a percentage of total merchandise exports	0.3423
Medium and high technology manufactured exports as a percentage of total manufactured exports	0.3489
Merchandise trade as a percentage of GDP	0.0797
Total value of services exports	0.3735
Export product concentration index	-0.3018
Import product concentration index	-0.0403
ICT services as a % of trade in services	0.0908
Exports of ICT Goods as a % of total exports	0.2804
Digitally deliverable services exports as a % of total trade in services	0.2902

# Appendix B

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## Data Indicators & Metadata



Table B.1. EDI sub-indicators

Sub Index	Variables	Sources (latest available year)
OUTPUT	Real GDP	WDI (2022)
	Agriculture, value added, as a percentage of GDP	WDI (2022)
	Gross fixed capital formation as a percentage of GDP	WDI (2022)
	Industry as a percentage of GDP	WDI (2022)
	Manufacturing value added, as a percentage of GDP	WDI (2022)
	Total natural resource rents as a percentage of GDP	WDI (2021)
	Services value added, as a percentage of GDP	WDI (2022)
	Medium and high technology manufacturing value added share in total manufacturing value added	WDI (2020)
	Manufacturing value added per capita	UNIDO (2021)
TRADE	Total value of exports	WDI (2021)
	Fuel exports as percentage of merchandise exports	WDI (2022)
	Export market concentration index (Hirschman-Herfindahl Index, HHI)	WDI (2021)
	Total value of imports	WDI (2022)
	Manufactured exports as a percentage of total merchandise exports	WDI (2022)
	Medium and high technology manufactured exports as a percentage of total manufactured exports	UNIDO (2021)
	Merchandise trade as a percentage of GDP	WDI (2022)
	Total value of services exports	WDI (2022)
	Export product concentration index	UNCTAD (2022)
	Import product concentration index	UNCTAD (2022)
	Digitally deliverable services exports as a % of total trade in services (EDI+ only indicator)	UNCTAD (2022)
	Exports of ICT Goods as a % of Total Exports (EDI+ only indicator)	UNCTAD (2022)
	ICT services as a % of trade in services (EDI+ only indicator)	UNCTAD (2022)
REVENUE	Excise tax revenue as a percentage of GDP	IMF (2020)
	Income tax revenue as a percentage of GDP	IMF (2020)
	Goods and services tax revenue as a percentage of GDP	IMF (2020)
	Tax revenue as a percentage of GDP	IMF (2020)
	Total revenue as a percentage of GDP	IMF (2020)
	Trade revenue as a percentage of GDP	IMF (2020)

Table B.2. EDI+ sub-indicators

Sub Index	Variables	Sources (latest available year)
TRADE	Digitally deliverable services exports as a % of total trade in services	UNCTAD (2022)
	Exports of ICT Goods as a % of Total Exports	UNCTAD (2022)
	ICT services as a % of trade in services	UNCTAD (2022)

## Appendix C

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# Regional, Income & Commodity Producers Groupings

Table C.1. Regional Grouping\*

East Asia & the Pacific	Eastern Europe & Central Asia	Latam & Caribbean	MENA	North America	South Asia	Sub-Saharan Africa	Western Europe
Australia	Albania	Argentina	Algeria	Canada	Bangladesh	Angola	Austria
Cambodia	Armenia	Bolivia	Bahrain	United States of America	India	Botswana	Belgium
China	Azerbaijan	Brazil	Egypt		Nepal	Cote d'Ivoire	Cyprus
Indonesia	Belarus	Chile	Iran		Pakistan	Cameroon	Denmark
Japan	Bosnia	Colombia	Israel		Sri Lanka	Congo	Finland
Korea, Republic of	Croatia	Costa Rica	Jordan			Ethiopia	France
Malaysia	Czechia	Ecuador	Kuwait			Ghana	Germany
Mongolia	Estonia	El Salvador	Lebanon			Kenya	Greece
New Zealand	Georgia	Guatemala	Morocco			Madagascar	Iceland
Philippines	Hungary	Honduras	Oman			Mauritius	Ireland
Singapore	Kazakhstan	Jamaica	Qatar			Mozambique	Italy
Thailand	Kyrgyzstan	Mexico	Saudi Arabia			Namibia	Luxembourg
	Latvia	Nicaragua	Turkey			Niger	Malta
	Lithuania	Panama	Tunisia			Nigeria	Netherlands
	Moldova, Republic of	Paraguay	United Arab Emirates			Rwanda	Norway
	Poland	Peru				Senegal	Portugal
	Romania	Uruguay				South Africa	Spain
	Russian Federation					Tanzania	Sweden
	Serbia					Uganda	Switzerland
	Slovakia					Zambia	United Kingdom
	Slovenia						
	Ukraine						

\* World Bank classifies Malta as part of MENA & Turkey as Europe

\* IMF classifies Malta as part of Euro area & Turkey as Emerging Europe

Table C.2. Income Grouping \*\*

High income	Low income	Lower middle income	Upper middle income
Australia	Ethiopia	Angola	Albania
Austria	Madagascar	Algeria	Argentina
Bahrain	Mozambique	Bangladesh	Armenia
Belgium	Niger	Bolivia	Azerbaijan
Canada	Rwanda	Cambodia	Belarus
Chile	Uganda	Cameroon	Bosnia
Croatia		Congo, Rep.	Botswana
Cyprus		Côte d'Ivoire	Brazil
Czech Republic		Egypt, Arab Rep.	China
Denmark		Ghana	Colombia
Estonia		Honduras	Costa Rica
Finland		India	Ecuador
France		Iran, Islamic Rep	El Salvador
Germany		Jordan	Georgia
Greece		Kenya	Guatemala
Hungary		Kyrgyz Republic	Indonesia
Iceland		Lebanon	Jamaica
Ireland		Mongolia	Kazakhstan
Israel		Morocco	Malaysia
Italy		Nepal	Mauritius
Japan		Nicaragua	Mexico
Korea, Rep.		Nigeria	Moldova
Kuwait		Pakistan	Namibia
Latvia		Philippines	Paraguay
Lithuania		Senegal	Peru
Luxembourg		Sri Lanka	Russian Federation
Malta		Tanzania	Serbia
Netherlands		Tunisia	South Africa
New Zealand		Ukraine	Thailand
Norway		Zambia	Turkey
Oman			
Panama			
Poland			
Portugal			
Qatar			
Romania			
Saudi Arabia			
Singapore			
Slovak Republic			
Slovenia			
Spain			
Sweden			
Switzerland			
United Arab Emirates			
United Kingdom			
United States			
Uruguay			

\*\* The regional groupings are based on the World Bank's country classifications by income level, the July update using the GNI per capita, Atlas Method. Retrieved in Dec 2023 from: <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>

Given the 20-year time series, resource dependent nations have been classified as those where natural resource rents are, on average, at least 10 percent of their GDP throughout the years. Resource rents as percentage of GDP has been obtained from the World Bank (World Development Indicators). Additionally, the UNCTAD's definition has been used to define a country as dependent on commodities when these account for more than 60% of its total merchandise exports in value terms (on average for the full period). Share of commodities has been sourced from the WTO – using the merchandise exports by product group (SITC 3-digit) data.

### The report identifies all the below-mentioned nations as commodity dependent:

Either with resource rents greater than 10% of GDP

OR share of commodities in exports greater than 60%. The ones highlighted in bold are those that meet both criteria.

### C.3. Commodity-producer groupings

Country Name	Main Resource/ Commodity	Resource Rents (percentage of GDP)	% share of all commodities in total merchandise exports
<b>Angola</b>	<b>Fuel exports</b>	<b>33.88</b>	<b>96.67</b>
Argentina	Agricultural exports	3.22	65.56
Australia	Minerals, ore and metals exports	5.42	74.14
<b>Azerbaijan</b>	<b>Fuel exports</b>	<b>28.01</b>	<b>95.57</b>
<b>Bahrain</b>	<b>Fuel exports</b>	<b>18.99</b>	<b>81.52</b>
Bolivia	Minerals, ore and metals exports	8.13	84.77
Cameroon	Fuel exports	6.65	87.77
Chile	Minerals, ores and metals exports	8.41	84.35
Colombia	Fuel exports	5.66	69.67
<b>Congo</b>	<b>Fuel exports</b>	<b>39.88</b>	<b>50.40</b>
Côte d'Ivoire	Agricultural exports	3.75	76.72
<b>Ecuador</b>	<b>Agricultural exports</b>	<b>10.89</b>	<b>90.82</b>
<b>Ethiopia</b>	<b>Agricultural exports</b>	<b>16.15</b>	<b>81.83</b>
Ghana	Minerals, ore and metals exports	11.46	49.75
Iceland	Agricultural exports	0.00	84.23
<b>Iran</b>	<b>Fuel exports</b>	<b>25.67</b>	<b>73.92</b>
Jamaica	Minerals, ore and metals exports	1.71	89.08
<b>Kazakhstan</b>	<b>Fuel exports</b>	<b>21.89</b>	<b>84.94</b>
Kenya	Agricultural exports	2.89	67.32
<b>Kuwait</b>	<b>Fuel exports</b>	<b>46.00</b>	<b>92.85</b>
Malaysia	Fuel exports	9.50	29.20
<b>Mongolia</b>	<b>Minerals, ore and metals exports</b>	<b>18.89</b>	<b>77.86</b>
<b>Mozambique</b>	<b>Minerals, ore and metals exports</b>	<b>11.06</b>	<b>88.83</b>
Namibia	Minerals, ore and metals exports	1.95	61.29
New Zealand	Agricultural exports	1.60	71.99
Niger	Minerals, ore and metals exports	8.02	71.75
<b>Nigeria</b>	<b>Fuel exports</b>	<b>12.95</b>	<b>93.12</b>
Norway	Fuel exports	8.46	77.93
<b>Oman</b>	<b>Fuel exports</b>	<b>34.45</b>	<b>79.73</b>
Paraguay	Agricultural exports	1.70	87.88
Peru	Minerals, ore and metals exports	7.24	69.12
<b>Qatar</b>	<b>Fuel exports</b>	<b>31.90</b>	<b>88.74</b>
<b>Russia</b>	<b>Fuel exports</b>	<b>14.82</b>	<b>70.00</b>
Rwanda	Minerals, ore and metals exports	6.04	68.53
<b>Saudi Arabia</b>	<b>Fuel exports</b>	<b>37.43</b>	<b>85.03</b>
Uganda	Agricultural exports	11.79	64.75
United Arab Emirates	Fuel exports	20.93	44.09
Uruguay	Agricultural exports	1.32	73.26
<b>Zambia</b>	<b>Minerals, ores and metals</b>	<b>14.49</b>	<b>83.25</b>

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