SKOLKOVO Moscow School of Management

Emerging Markets Decoded

2024

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Foreword by Igor Shuvalov

Dear friends!

We are delighted to present you the results of a study conducted by experts from the Moscow School of Management "Skolkovo," dedicated to one of the most significant trends of our time—the consistent and sustainable growth of the influence of emerging and developing markets on the global economy and global governance.

Over the past 5 years alone, BRICS members' share of the global GDP has increased from 30% to 32%, while the combined share of G7 economies has decreased from 31.5% to 29.4%. Our countries are shaping and pursuing their own independent policies, while at the same time defending their sovereignty and national interests.

Throughout this process, the role of multilateral and national development finance organizations is particularly noticeable, including those within the Shanghai Cooperation Organization (SCO) and the BRICS Interbank Cooperation Mechanism. We are deeply involved in the implementation of investment projects in high-tech industries, the creation of physical and social infrastructure, and the transformation of urban economies.

Our progress in the area of development finance is fueled by sharing knowledge with both the academic and expert communities. VEB.RF is a strategic partner of the Moscow School of Management "Skolkovo". Together, we implement educational and research programs, as well as projects aimed at increasing the efficiency of investments, particularly in urban economies.

The authors of the report "Emerging Markets Decoded 2024" set an important task: to understand the phenomenon of the explosive growth of Global South economies and the increase of their role in the world. The report identifies common trends in the development of individual countries and proposes a systemic approach to assessing their position in the global economy. The research findings are intended to help entrepreneurs better navigate the landscape of the most dynamically evolving markets. In this capacity, the report can be used in the preparation and implementation of joint projects, primarily initiatives aimed at strengthening economic cooperation between Russia and its partners in the BRICS, SCO, and EAEU.

Igor Shuvalov,
Chairman of VEB.RF

Foreword by Alexander Kim

Dear friends!

When it comes to global business, understanding the nuanced intricacies of emerging markets is not merely an academic exercise but a strategic imperative. It is with great pride that I present to you Emerging Markets Decoded 2024—a comprehensive research report that sheds light on the evolving dynamics and complexities of emerging markets across the globe. This report will serve as both an informative guide and a window into the future of global commerce.

The importance of studying emerging markets cannot be overstated. These regions represent not only the challenges of diverse and often volatile economic landscapes but also unparalleled opportunities for growth, innovation, and leadership in the global economy. Our school's commitment to understanding these markets goes beyond academic curiosity; it is a reflection of our dedication to preparing our students and corporate clients to make informed, strategic decisions that will define the future of their enterprises.

This year's report is a continuation of a conceptual series initiated back in 2010. Over the years, our research has evolved to keep pace with the rapidly changing global economic environment, incorporating the latest trends, technologies, and theories. This year's Emerging Markets Decoded report builds on this legacy, offering fresh insights, in-depth analysis, and practical guidance for navigating the complexities of these vibrant economies.

For our students, this report serves as an invaluable resource, equipping them with the knowledge necessary to lead in a more globalized and more fragmented world. They learn to anticipate the challenges that lie ahead and seize the myriad opportunities that emerging markets present. For our corporate clients, the report is a strategic tool, enabling them to identify new avenues for investment, expansion, and collaboration. By understanding the nuances of these markets, businesses can make informed decisions that may drive growth and foster sustainable development.

Our research into emerging markets is just one facet of the broad range of scholarly activity here at the Moscow School of Management SKOLKOVO. We are committed to producing research that is not only academically rigorous but also practically relevant, addressing the needs of today's business leaders and entrepreneurs. Emerging Markets Decoded embodies this commitment, offering actionable insights derived from cutting-edge academic research and real-world business experience.

As you read through this report, I encourage you to think of it as more than just a collection of data and analysis. See it as a compass that can guide your business strategies in emerging markets, a source of inspiration for innovative approaches to global challenges, and a testament to the transformative power of informed, strategic decision-making.

To the businessmen and entrepreneurs looking to expand into emerging markets or learn from the best practices, this report is for you. Let it be your guide as you navigate the complex, yet rewarding landscape of global business. Welcome to Emerging Markets Decoded 2024.

Warm regards,

Dr. Alexander Kim,
Dean, Moscow School of Management SKOLKOVO

Executive Summary

> Over the past two decades, emerging markets have significantly influenced the global economic landscape, contributing to growth, trade, and poverty reduction. Based on a comprehensive analysis of revealed economic potential by those markets, the 2024 Emerging Market Decoded (EMD) Index from the Moscow School of Management SKOLKOVO categorizes emerging markets into three groups: Advanced, Intermediate, and Early Stage.

Advanced Emerging Markets (e.g., Greater China, Malaysia, Russia, Saudi Arabia, and Vietnam) have transitioned to intensive growth models, boasting robust internal demand, innovation, and well-developed institutions, influencing global innovation.

Intermediate Emerging Markets (e.g., Bangladesh, South Africa, and Mexico) lead in rapid industrialization, driven by infrastructure investments and expanding industrial bases, with growing domestic consumption and improved trade balances.

Early Stage Emerging Markets (e.g., Nigeria, Ethiopia, and The Democratic Republic of the Congo) face challenges in basic service provision but possess vast potential with large populations, abundant resources, and a young workforce.

Looking at the trends on and around these markets across major themes, we have identified these key takeaways:

Global volatility and recession risks are both borne of emerging markets and a key concern for them. Macroeconomic uncertainty, mounting debt, changing globalization patterns, and monetary policy challenges will continue to impact emerging markets' growth prospects. Rising interest rates in developed economies could dampen capital flows to emerging markets, while trade tensions and protectionist measures could disrupt global supply chains and hinder export growth.

Geopolitics and domestic flux can disrupt and impede growth at any time. Political instability, governance issues, and accumulating social and environmental imbalances pose significant risks to emerging market economies and threaten development models, while costs of transitioning to others increase. These disruptions can undermine investor confidence, deter foreign investment, and hinder economic growth.

The demographic dividend is still here, but no longer provides a direct path to growth. Emerging markets are home to a large and growing young population, which can serve as a source of great power, driving economic growth and productivity. However, managing the needs of a young, burgeoning population requires effective education, employment opportunities, and social safety nets. Failure to address these challenges could lead to social unrest and hinder long-term growth prospects.

Cities are where emerging markets actually emerge. Rapid urbanization in Africa and Asia is transforming these regions' economic landscapes. Urbanization can boost productivity, create employment opportunities, and drive innovation. However, it also presents challenges in terms of infrastructure development, housing, and social cohesion.

The global consumer class in the next decade will be growing thanks to emerging markets. E-commerce drives this growth as users in developing countries rapidly adopt online shopping and mobile payments. Consumers in emerging markets favor local businesses and demand international brands, including those in the luxury segment, to adjust to their tastes.

The COVID-19 pandemic has accelerated digitalization in emerging markets, narrowing the gap between the Global South and the Global North. Automation is on the rise, and its impact on jobs depends on productivity and demographic changes, potentially helping some markets offset workforce decreases due to population aging.

The infrastructure gap is holding back growth and is not closing fast enough, while capital remains inadequate. Investments in infrastructure are essential for supporting economic growth and improving living standards in emerging markets. These investments should prioritize energy, transportation, and digital infrastructure. Adequate infrastructure is crucial for connecting markets, facilitating trade, and promoting inclusive growth.

Climate risks are disproportionately high in emerging markets, but so is the potential to leapfrog to more sustainable development models and seize the new markets arising from a green transition. Climate change poses significant risks to emerging markets, particularly those in vulnerable regions. These economies are more susceptible to natural disasters, extreme weather events, and the impacts of climate change on agriculture and food security. Addressing climate change will require a concerted global effort, with emerging markets playing a crucial role in reducing emissions and adapting to the changing climate.

Introduction

Introduction

> Emerging markets have emerged as dynamic drivers of global economic growth and development over the past two decades. The 2024 Emerging Market Developed (EMD) Index, developed by the Moscow School of Management SKOLKOVO, provides a comprehensive framework for understanding the maturity and potential of these markets. This report seeks to offer insight into the evolving nature of emerging markets, focusing on their trajectory towards realizing their full economic potential within the global landscape.

Significance of the Report

In today's interconnected world, understanding emerging markets is crucial for stakeholders such as business leaders, policymakers, and researchers interested in the geoeconomic dynamics of these regions. This report fills a critical gap by not only assessing the current development status of emerging markets but also by examining their potential for future growth. By providing valuable insights into the factors shaping the trajectories of these markets, stakeholders can formulate informed long-term strategies and projections, navigating the complexities of the global economic landscape.

Novel Approach

Unlike traditional consulting reports that focus on short-term perspectives, this report takes a comprehensive and forward-looking approach. It provides a balanced perspective that is not overly long-term and abstract, offering practical insights and data-driven analysis that readers can leverage for more informed decision-making. Unlike academic papers, which can sometimes be overly theoretical, this report strikes a balance by offering substantive insights while remaining practical and actionable.

Structure of the Report

The report is structured into two distinct sections to provide readers with a comprehensive understanding of emerging markets:

— EMD Index: This section introduces the EMD Index, categorizing emerging markets into three distinct groups: Advanced, Intermediate, and Early Stage. It provides an overview of each group's characteristics and offers general observations about the trends observed across these market groups.

— Chapters on Prominent Trends: The second section delves deeper into separate prominent trends shaping the trajectories of emerging markets. These chapters explore key themes including economy, politics & society, demography, urbanization, infrastructure, technology, and climate change. Each chapter provides an in-depth analysis and insights into how these trends impact emerging markets of different stages, offering valuable perspectives for stakeholders across various sectors.

Target Audience

This report is aimed at a diverse audience, including business leaders, policymakers, and researchers interested in the geoeconomic dynamics of emerging markets. Whether you're a corporate executive seeking to expand into new markets, a policymaker shaping economic policies, or a researcher exploring the complexities of emerging market economies, this report offers valuable insights tailored to your specific interests and needs.

1 Emerging Market Decoded Index 2024

1. Emerging Market Decoded Index 2024

1.1. Emerging Markets: What's in a Name?

> The concept of 'emerging markets' has its roots in the shifting dynamics of the global economy. The term emerged as a way to categorize economies undergoing rapid industrialization, experiencing significant economic growth, and demonstrating the potential to become major players on the world stage. Initially coined[1] by economists at the International Finance Corporation (IFC) in the early 1980s, the term was meant to encapsulate the evolving nature of economies transitioning from traditional structures to more developed, industrialized forms.

While "emerging markets" is a widely used term, it lacks a universally accepted definition. The World Bank classifies countries[2] by income level (low, lower-middle, upper-middle, and high-income economies) based on Gross National Income (GNI) per capita, which does not directly imply any conclusions about such markets' development status. The International Monetary Fund (IMF) classifies[3] some economies as "advanced" and others as "emerging and developing" based on per capita income, exports diversification, and the extent of integration into the global financial system. Within emerging and developing markets, the IMF identifies 20 economies as emerging, judging by their leadership positions across five parameters (nominal GDP, population, GDP per capita, share of world trade, and share of world external debt). While this is a straightforward approach, many investment banks and other financial institutions have developed their own methodologies to devise a list of emerging markets, often considering parameters such as market size, liquidity[4], and regulatory environment[5].

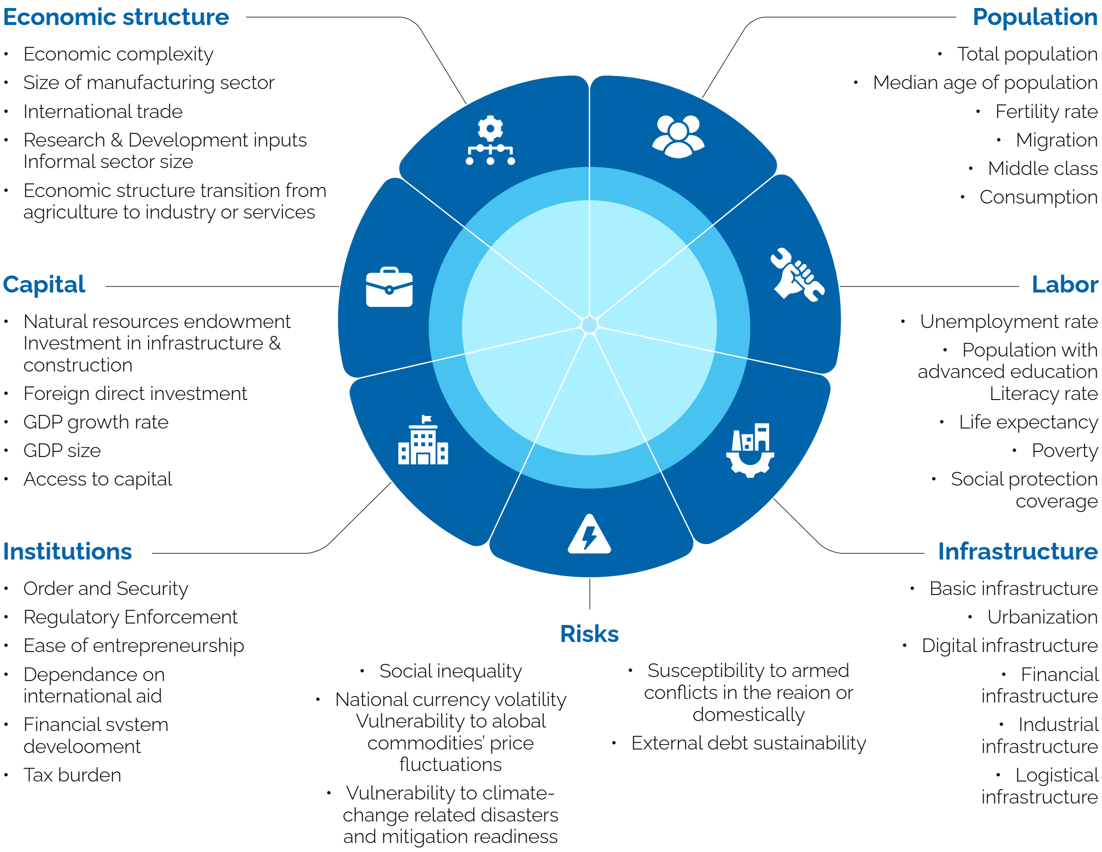
Unlike investment reports, here we are not looking to provide a short-term overview of the economic situation in those markets. Instead, we are interested in the underlying long-term trends in the economic, social, and institutional transformations that economies undergo. Our objective is to provide readers with an in-depth understanding of the shifting nature of the markets in question, leaving it to them to draw their own practical conclusions based on the trends we present.

For the purposes of this report, we relied on the initial idea behind the term "emerging markets," looking at all the economies that are still undergoing transformation from traditional economic structures to industrialized and post-industrialized states. Our purpose was to determine the degree of the revealed economic potential of these markets—whether they are (1) far along on their journey with their potential fully revealed, indicating a trajectory towards becoming developed economies, (2) still in their intermediate stage with uncertain realization of their potential due to ongoing developmental challenges which would shape their trajectory, or (3) still in their early stage with significant untapped potential yet to be revealed.

To this end, the report focuses solely on markets that are still in their transitionary phase. Eastern European markets, for example, were excluded from the focus of this report, as their economic structures and institutional frameworks have already matured. Their transition from centrally planned to market economies has resulted in diversified and sophisticated industrial bases. Their growth, based solely on extensive mobilization of production factors, has already plateaued and now depends on productivity growth. Metrics such as the Human Development Index indicate significant improvements in living standards, with most Eastern European countries now ranking as Very High in that index.

On the other hand, Russia, Kazakhstan, and the countries of Central Asia were included in the report, as these economies still have plenty of untapped potential across natural resources mobilization and economic transformation due to ongoing economic reforms. Economic advancement, in this sense, encapsulates the evolutionary stage of an economy along the continuum of development, reflecting its ability to address fundamental challenges, navigate through growth phases, and foster sustained well-being for its citizens while at the same time revealing its economic potential. Building on the previous methodology for the Emerging Markets Index developed by the SKOLKOVO Institute for Emerging Market Studies in 2016[6], this report determines the level of economic maturity of emerging markets based on 42 components across seven categories (Figure 1).

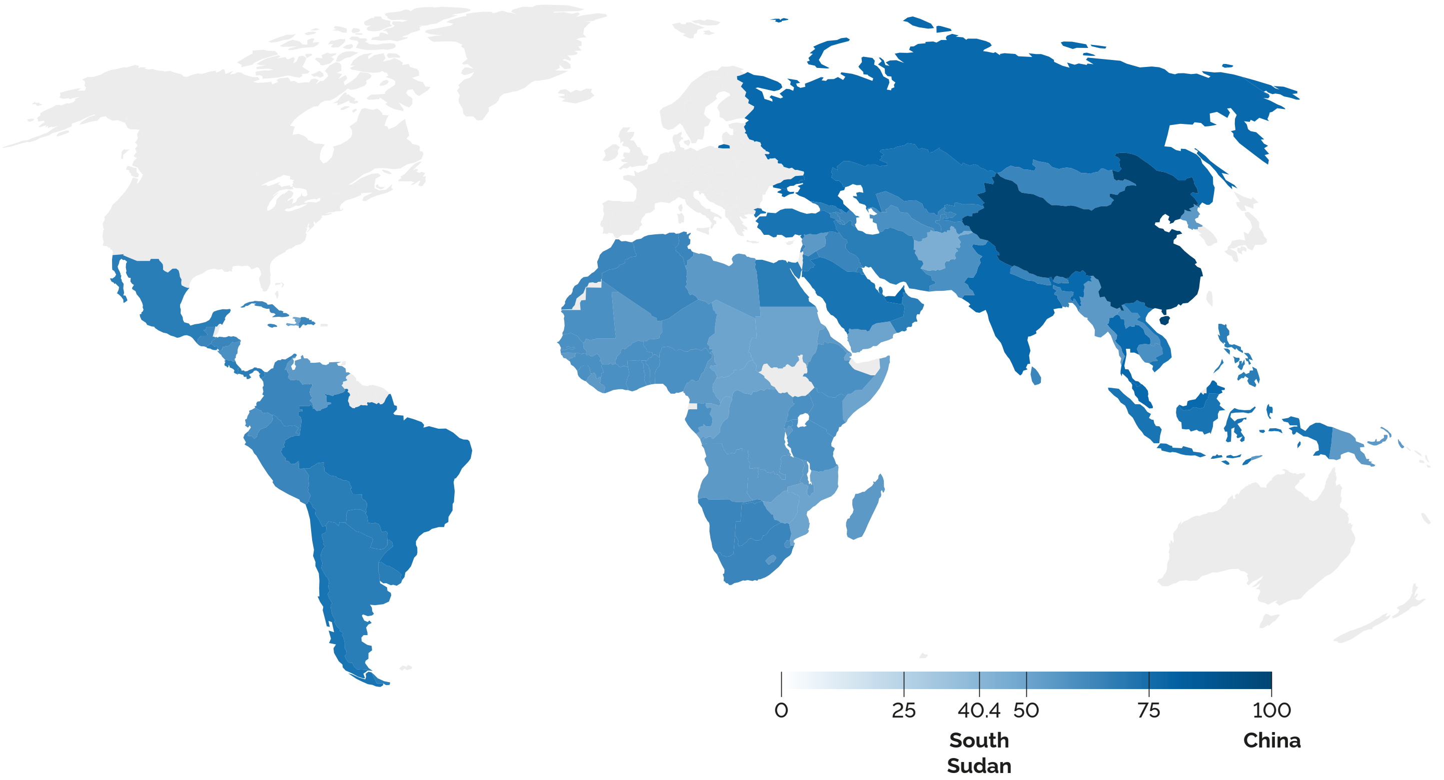
Figure 1.1 Emerging markets index components



Key determinants of the potential for economic growth of a given country are the **factors of production**: **capital, human capital, and labor**. However, to be able to convert factor endowment into economic growth, economies need to efficiently allocate these resources via a **complex economic structure** and developed **infrastructural networks**. To make economic growth sustained, it is crucial to have **the right institutions** in place that ensure the rule of law, protection of investors, ease of entrepreneurship, etc. Finally, **vulnerability to external risks**, while rarely controlled by the economies themselves, has a significant impact on their development trajectory[i].

i Detailed sources and methodology can be found in the Appendix.

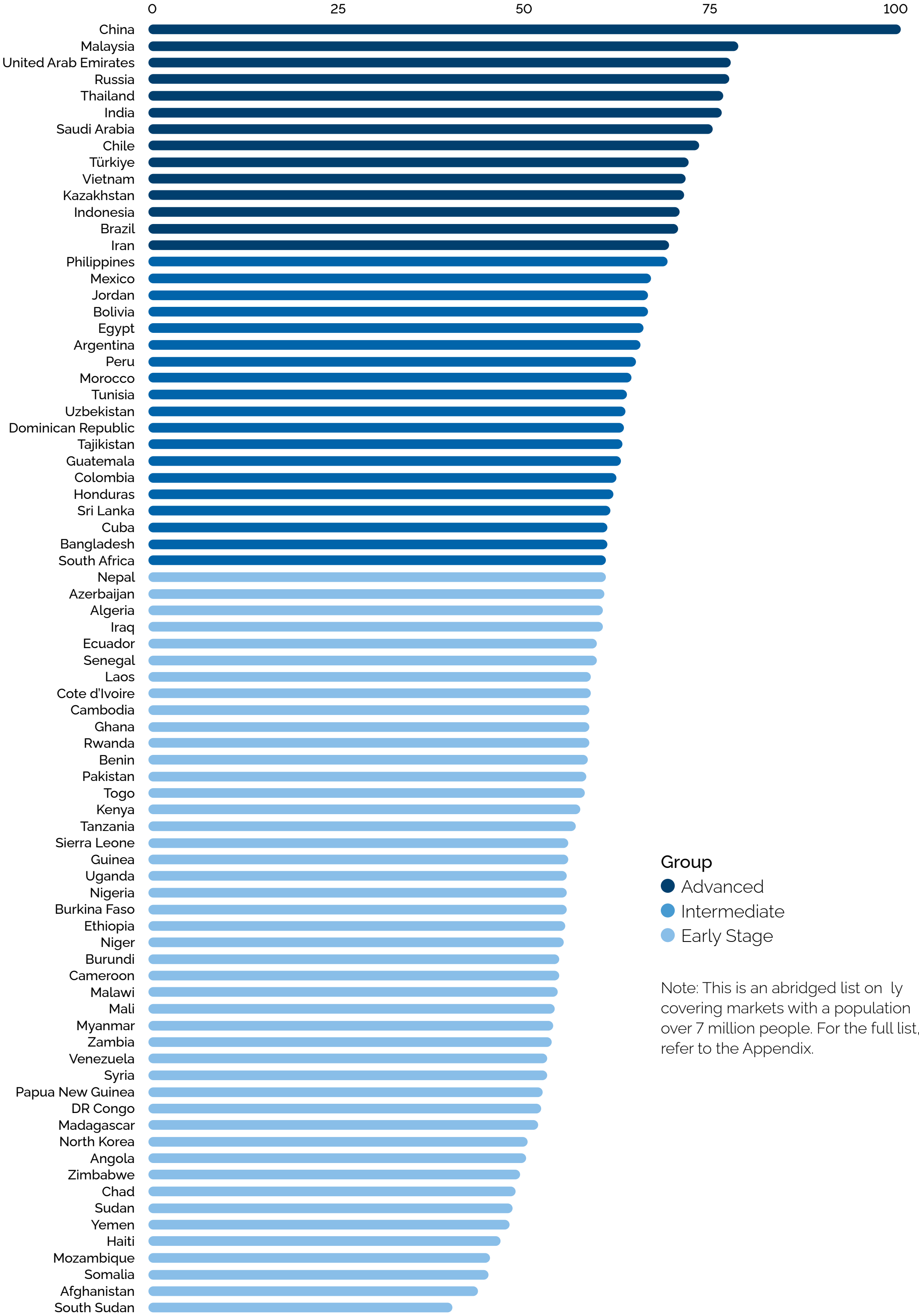
Figure 1.2 EMD index results, 2024



1.2. EMD Index 2024

The EMD Index 2024 covers 114 markets[ii] across 42 parameters. Based on the final ranking, we have defined three groups of markets—Advanced, Intermediate and Early Stage—that share similar characteristics and patterns of growth beyond just mere index values.

Figure 1.3 EMD index ranking, 2024



Note: This is an abridged list on ly covering markets with a population over 7 million people. For the full list, refer to the Appendix.

ii "China" in the EMD index represents Greater China, which includes PRC, Taiwan, Hong Kong, and Macao.

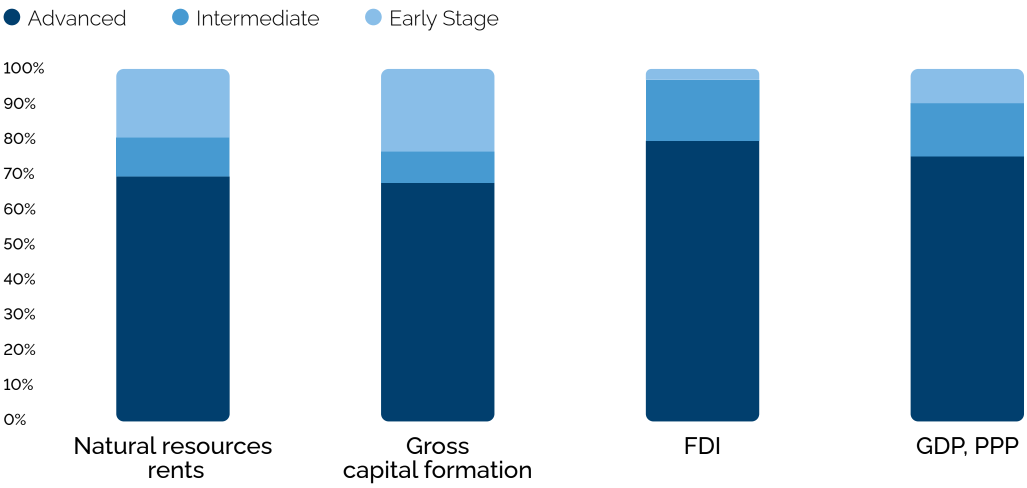
Advanced Emerging Markets

At the head of the pack are the Advanced Emerging Markets, representing economies that have successfully navigated the trajectory from extensive to intensive economic growth. These are largely either Asian miracle economies that once surprised the world with fast economic growth rates but who are now on the quest to transition from middle-income to higher income group (China, Thailand, Malaysia, Indonesia, Vietnam) or large resource export economies that have significant economic diversification and the institutional base to obtain the title of "developed" but still have work to do in terms of economic restructuring (Russia, Saudi Arabia, Kazakhstan, Iran).

Figure 1.4 Annual GDP growth, average since 2016

Source: Authors' calculations, World Bank

Figure 1.5 Capital indicators, share of all emerging markets' volume



Source: Authors' calculations, World Bank

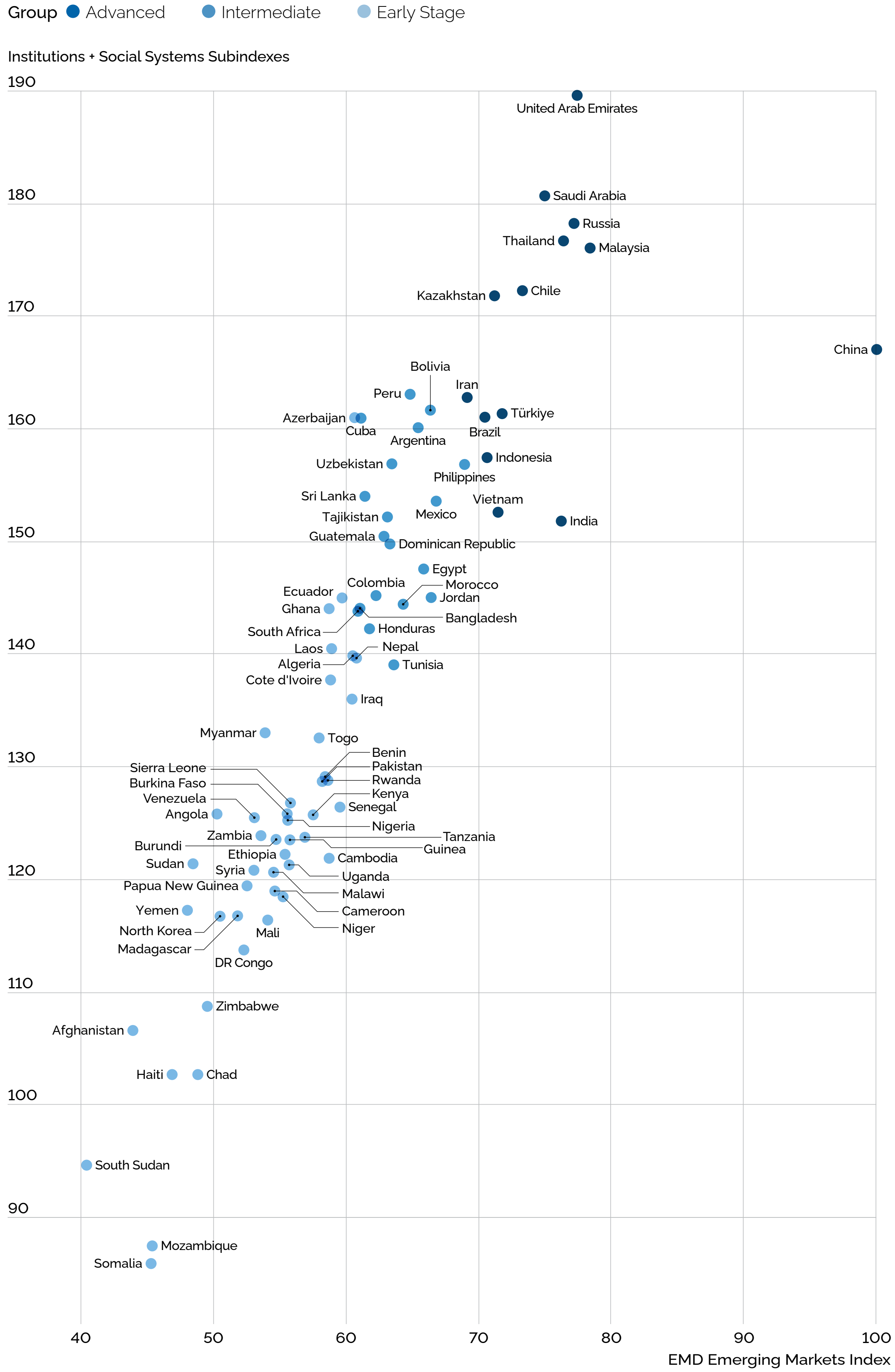
Advanced Emerging Markets have been the powerhouse of the global economy in recent years. They account for 42.6% of global GDP (PPP, constant 2017 USD) and 27.5% of the global trade, as well as for over three quarters of both GDP and trade that comes from all emerging markets. Granted, this group includes giants such as Greater China and India, so the endowment with resources was also disproportionally large to begin with. Yet, what is remarkable about the Advanced Emerging Markets is how they managed to convert factors of production into economic growth, developing faster than any other group (Figures 4, 5).

These economies have already successfully passed through the industrialization stage, achieving relatively diversified economic structures and have begun to phase out of an export-oriented growth model. They now find themselves at the forefront of sustained, intensive economic growth, propelled primarily by robust internal demand and an innovative economy. They invest 4–6 times more resources in R&D than Intermediate and Early Stage emerging markets, and on average 37.9% of their GDP comes from high-tech manufacturing. By and large, they have only just started growing in this fashion. This still makes them "emerging" economies, but even getting to this stage makes them "advanced".

But what really sets the Advanced Emerging Markets apart are developed institutions and welfare systems (Figure 6). Having effectively triumphed over basic development challenges like severe poverty, illiteracy, and inadequate infrastructure, these economies heavily invested in improving the well-being of their citizens and the quality of human capital. For example, the average life expectancy in those markets is 75 years, which is 12 years longer than in Early Stage markets. Higher rates of consumer spending and the establishment of a burgeoning domestic consumer class underscore their success in improving living standards: 50% of Advanced Emerging Market populations belong to the middle class.

Institutions in Advanced Emerging Markets are characterized by robustness and efficiency. They play a pivotal role in ensuring stability, fostering innovation, and providing a conducive environment for sustained economic growth. This applies to everything from basic security and civil order and social insurance coverage to ease of entrepreneurship and access to capital for the private sector.

Figure 1.6 Institutions and social systems subindex



Source: Authors' calculations

Intermediate Emerging Markets

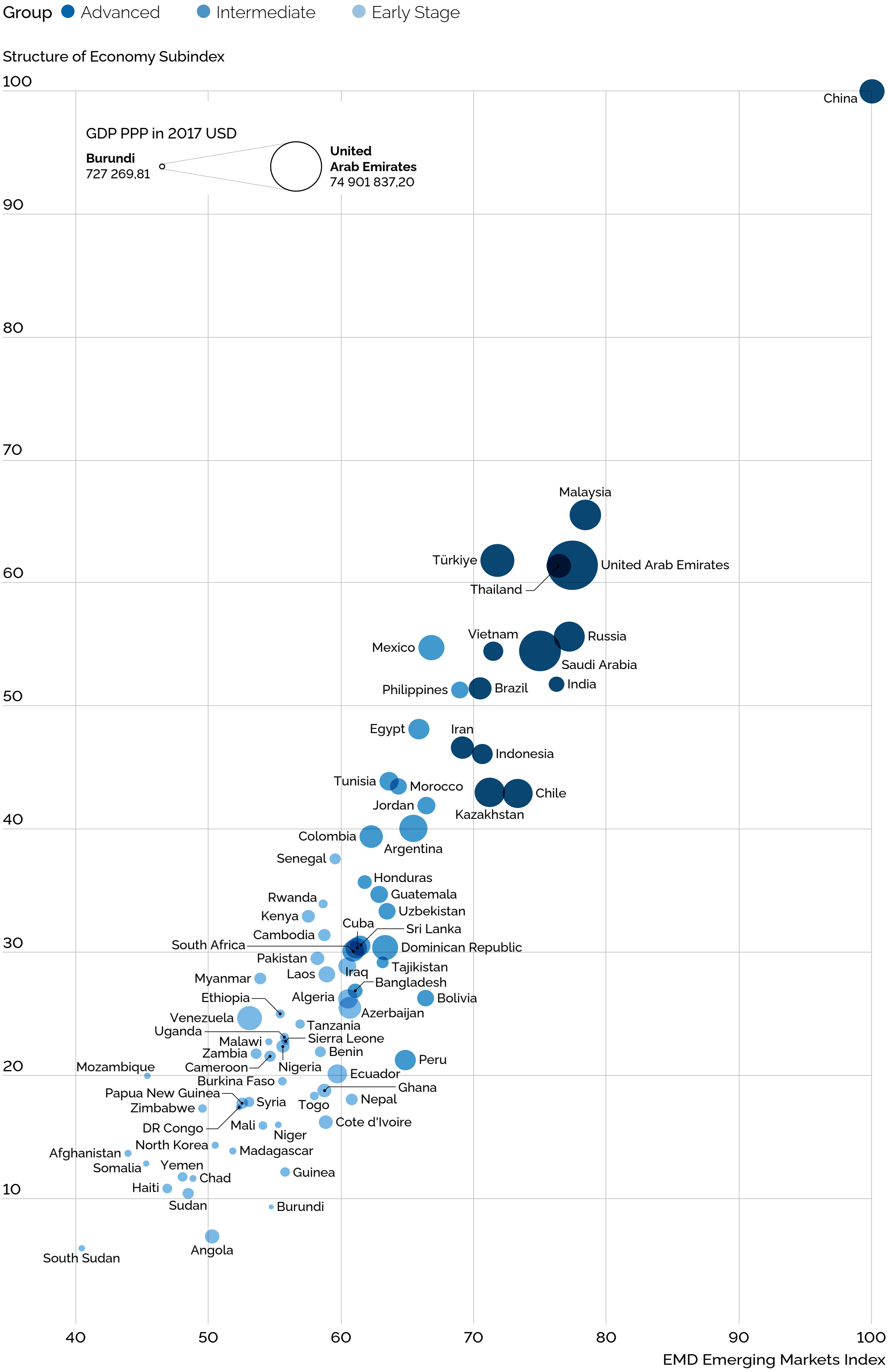
Next we have Intermediate Emerging Markets, which are economies in the process of rapid industrialization. These nations have secured a strong infrastructural foundation that should underpin their economic expansion (Figure 7), though their industrial infrastructure is still "under construction" and is 10 times weaker compared to the "Advanced" group. These economies do not have their own resources for necessary investments, so they rely either on FDI (17% of all FDI flows into emerging markets, while the group contributes only 15% of the GDP) or on foreign loans, which made their debt-to-GDP ratio higher than their peers at 31%. These markets are now focused on accomplishing their industrialization plans and diversifying economic structures: this is clearly what separates them from the Advanced group (Figure 8). Once the industrialization stage is completed, a higher degree of economic and financial self-reliance will be available to the group.

While they are actively working towards meeting the basic needs of their citizens, Intermediate Emerging Markets have yet not achieved universal coverage. The emphasis remains on considering citizens as factors of productivity, fully exploiting the power of the market with all its failures, thus creating disparities in labor conditions and welfare programs. For example, 56% of employment in Intermediate Emerging Markets comes from the informal sector, which means worse job and social security for workers. Yet, already 40% of the population in this group belongs to the middle class, which signifies that they are reaping the benefits of the economic development that took place in these markets.

Figure 1.7 Access to types of infrastructure by economy type

Source: World Bank, Authors' calculations

Figure 1.8 Structure of economy subindex



Source: Authors' calculations

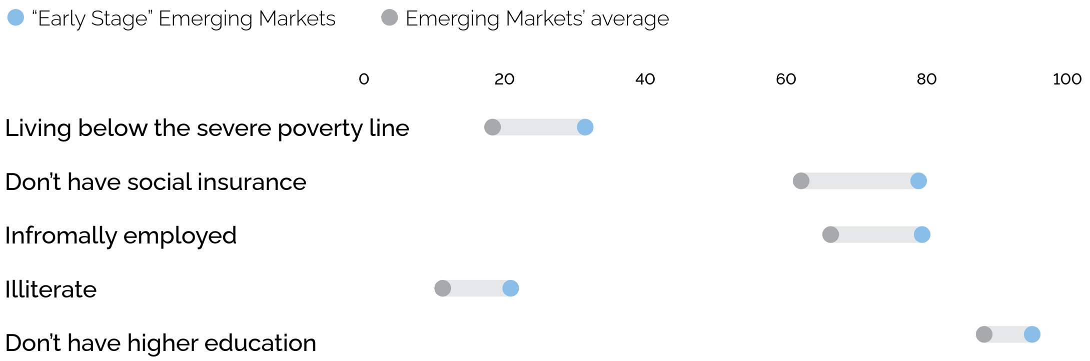
Early Stage Emerging Markets

The newcomers are the Early Stage Markets, characterized by the volatility and fragility of their economies as they take the initial steps on the path towards economic development. These markets typically have a young and growing population—the average age is 20 and average number of children per woman is 3.9—but this population does not have its basic needs covered (Figure 9). These poor conditions, coupled with political and social instability in many of these countries, create large waves of emigration (the outflow is almost 1% of population per annum) and poses questions as to whether the governments would be able to convert endowment with human resources into economic advantage (Figure 10).

Their economic structures are not complex, often reliant on a limited number of industries and/or natural resource exports. Early Stage Markets are working towards transforming their economies into those that are more industrialized and diversified, but even there they face challenges. On the surface, they are succeeding: on average, 5% of the workforce in these countries moved from agriculture to another sector of the economy over the past 10 years. However, in practice, this often means not industrial progress, but a premature deindustrialization. The labor force moves from agriculture directly to services, skipping the industrial stage. This locks countries out of avenues of upskilling and educating their population, which would diversify their industrial base and help them become more competitive at the global stage.

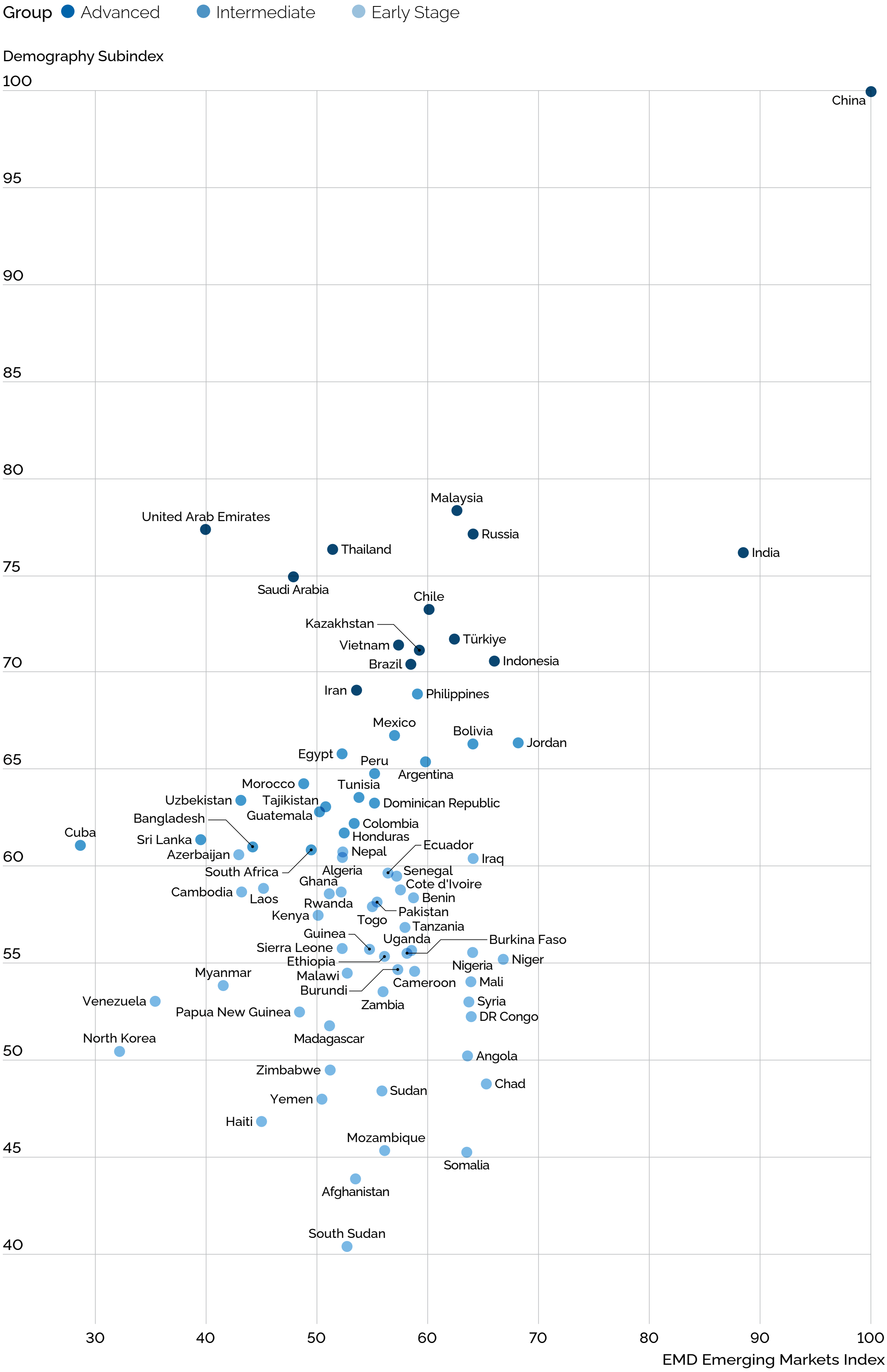
Economic volatility in Early Stage markets is exacerbated by weak institutions that struggle to provide stability and foster growth, high levels of inequality, and social polarization. Early Stage Markets often find themselves dependent on external aid to sustain their economic endeavors, highlighting the fragility of their institutional frameworks.

Figure 1.9 Percent of population lacking basic social benefits



Source: World Bank, Authors' calculations

Figure 1.10 Demography subindex

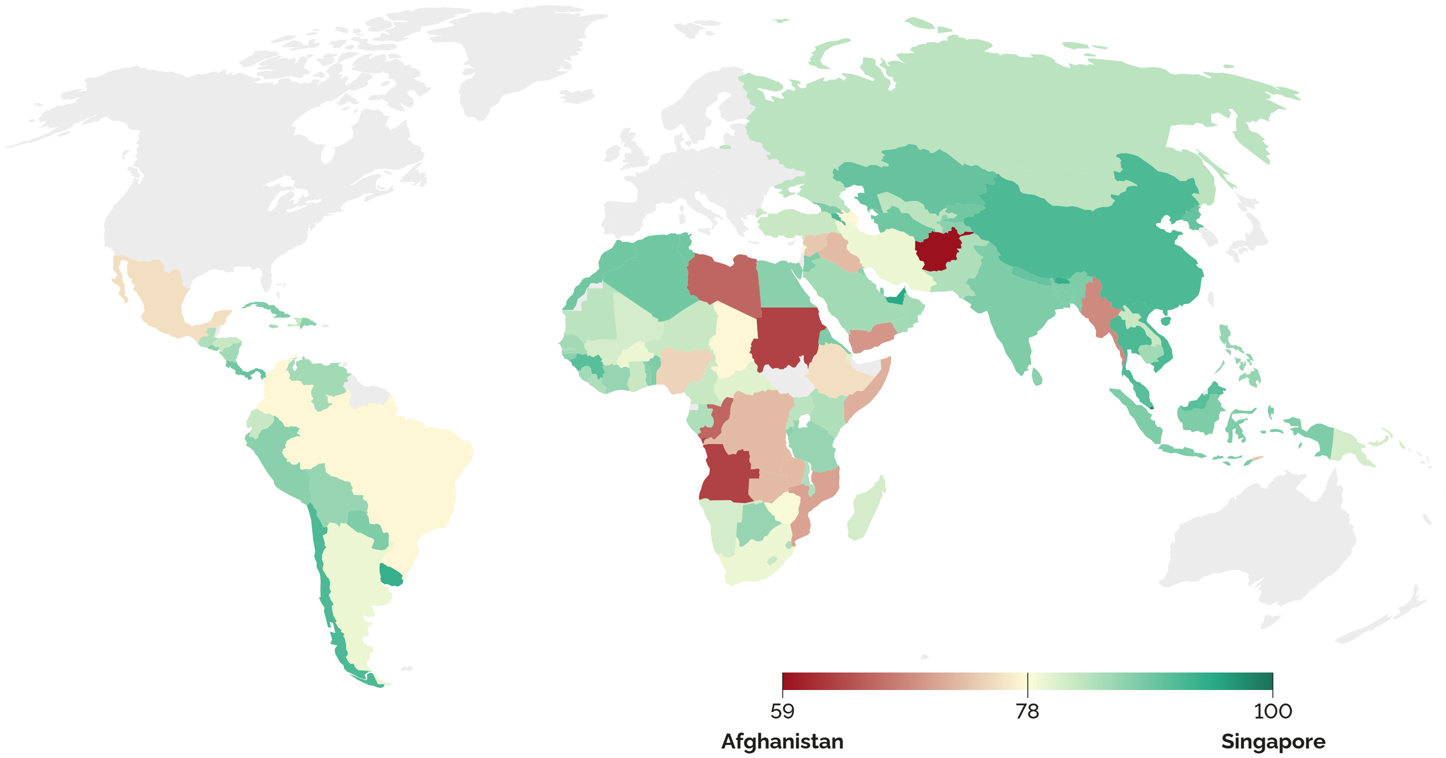


Source: Authors' calculations

Risks to Emerging Markets' Growth

Growth trajectories of these markets depend not only on their endowment with resources and ability to use said resources wisely, but also external factors that affect these economies. Unfortunately, it is the Early Stage emerging markets that are most vulnerable to external risks such as the negative impacts of climate change, fluctuations of commodities prices, currency fluctuations, and proximity to conflict zones.

Figure 1.11 Risks subindex



Source: Authors' calculations

The above analysis of market groups shows that developing countries differ in their resource endowments and starting conditions, which puts them on different development trajectories. Moreover, the position of a given market on its development trajectory is defined by the extent to which the market manager to realize its potential so far. In the subsequent chapters, we will examine how political, economic, and social trends are reflected differently in each of these groups, as well as how countries are responding to the present challenges.

2 What Makes Emerging Markets Grow

2. What Makes Emerging Markets Grow

2.1. Going Upstream: Maintaining Economic Growth Rates Will Require Enormous Effort from Emerging Markets against the Threat of a Global Recession

In recent decades, emerging markets have thrived thanks to significant global economic growth. Developing countries' share of global GDP increased from 24% in 2000 to 40% in 2020, supported by factors such as high oil prices, globalization, improved institutions, increased labor productivity, and technological advancements. They weathered the 2008–2009 financi al crisis better than developed economies, which faced budget deficits and financial sector problems. However, the COVID-19 pandemic disrupted this progress, causing a 2.8% global GDP decline in 2020. Economic recovery in 2021–2023 was overshadowed by geopolitical tensions, logistics crises, and inflationary pressures. The global economy faces increased uncertainty, with the IMF forecasting a continued slowdown in global GDP growth in the coming decade.

Additionally, after the 2008–2009 financial crisis, developed countries implemented more cautious economic policies, leading to deglobalization and a reduction in global financial and trade flows. The trade-to-GDP ratio declined due to slow commodity trade growth compared to GDP, though trade in services increased. Global inflation remained low until the pandemic, when supply chain limitations, reduced labor productivity, and increased energy, food, and logistics prices led to inflation acceleration. Developed countries began tightening monetary policies in mid-2022, further driving global inflation.

Generous fiscal stimulus packages in the post-COVID world, combined with negative external factors, increased debt burdens in developing countries, leading to default risks. China's slow post-COVID recovery, aggravated by high corporate debt ratio and property market issues, is a notable concern. Global macroeconomic uncertainty, mounting debt, changing globalization patterns, and monetary policy challenges will continue to impact emerging markets' growth prospects, with the extent of policy responses defining their economic context.

Global economic conditions have benefitted emerging markets in recent decades, but the times of easy growth might be coming to an end. For emerging markets—at any level of maturity—the world economy is no longer a supermarket of opportunity, and each group is facing its own set of challenges.

Emerging markets were the driving force behind the global economic growth of the first two decades of the 21st century. In 2000, developing countries accounted for 24% of the global GDP. By 2010 this share increased to 33%, and by 2020, to 40%[iii]. This growth was not just coming from a low base, but also from high oil prices, accelerating globalization (i.e., expanding international trade and net FDI inflows[iv]), and improving quality of institutions, as well as soaring labor productivity and advancements in technology. All of the above helped developing countries endure the 2008–2009 financial crisis without significant losses and maintain fairly high (albeit slowing) growth rates up until the COVID-19 pandemic.

Developed economies grew slower, not only due to a higher base, but also because of the accumulated budget deficits, problems in the financial sector, and increasing pressures on internal

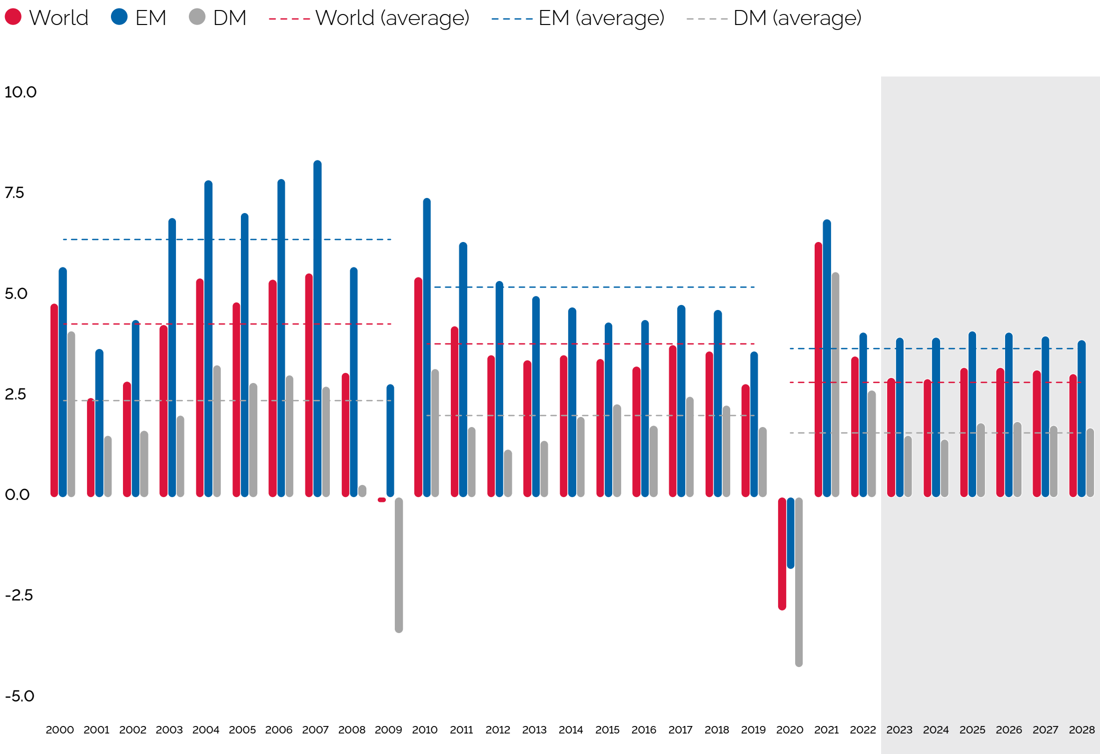
iii By GDP in constant 2015 USD, developing countries are all non-OECD members.

iv Portfolio investment saw outflow from developing countries to developed countries. Major developing economies with a current account surplus (China, Russia, and Saudi Arabia) accumulated a significant amount of reserves, including the US treasury and agency securities, as well as EU government bonds.

demand and investment. As a result, developed countries were hit harder by the 2008–2009 financial crisis (and, additionally, by the 2012 debt crisis in the case of the EU countries). These events led developed countries to adopt more cautious economic policies, something that started having an effect at the global scale later in the 2020s.

This also resulted in the partial reversal of the "Lucas Paradox," a term coined by economist Robert Lucas in the late 1980s which highlights a situation where capital does not flow from developed countries (where capital is abundant) to developing countries (where capital is scarce) as predicted by economic models. In the 2010s, capital flows to developing countries increased due to globalization and financial integration, interest rate differentials, commodities prices growth, capital markets liberalization and changes in the risk perceptions of the investors, aligning more closely with economic theory's expectations. Eventually, this trend also contributed to the rising debt levels in developed markets, as discussed below.

Figure 2.1 GDP Growth (constant prices), 2000–2028



Note. Average calculates as a simple average for 10 (8) years. Here and further in the text, "EM" refers to emerging and developing markets and "DM" refers to developed markets. Forecast by the IMF.

Source: IMF[7].

In 2020, the economic crisis caused by the COVID-19 pandemic and its fallout had an unprecedented impact on the macroeconomic indicators of most countries. Due to the economic and investment slowdown, as well as because of a decline in exports in all major economies except China, global GDP dropped by 2.8% year on year, with a drop of 1.8% in developing and 4.2% in developed. Following economic recovery in 2021, new issues put pressure on the global economy. The Russia-Ukraine conflict and the subsequent surge in the global geopolitical tensions led to disruption of the supply chains in energy and food sectors, severe prices inflation[v,8] and an overall logistics crisis. In 2023, a number of European countries and the US found themselves on the verge of recession.

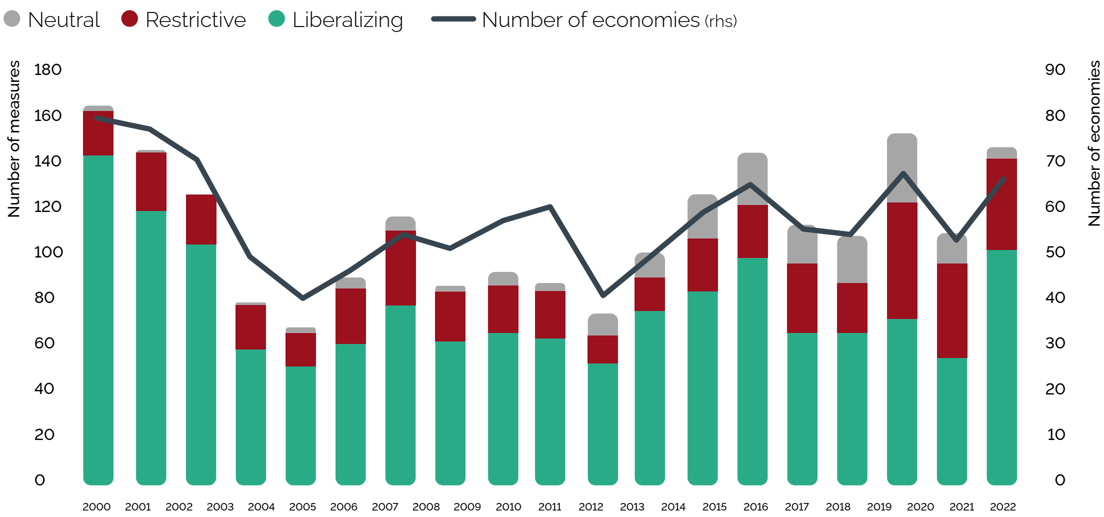
> The risks that the global economy will plunge into recession in 2024–2025 are rising.

v Energy prices inflation in the Eurozone was 44.3% in March 2022.

With global economic uncertainty only further increasing, forecasts of the chief economists of multilateral institutions, investment banks and funds vary from global GDP growth slowdown to recession[9] and even to a full-blown crisis[10]. The risks that the global economy will plunge into recession in 2024–2025 are rising, but global economic slowdown throughout this decade is inevitable.

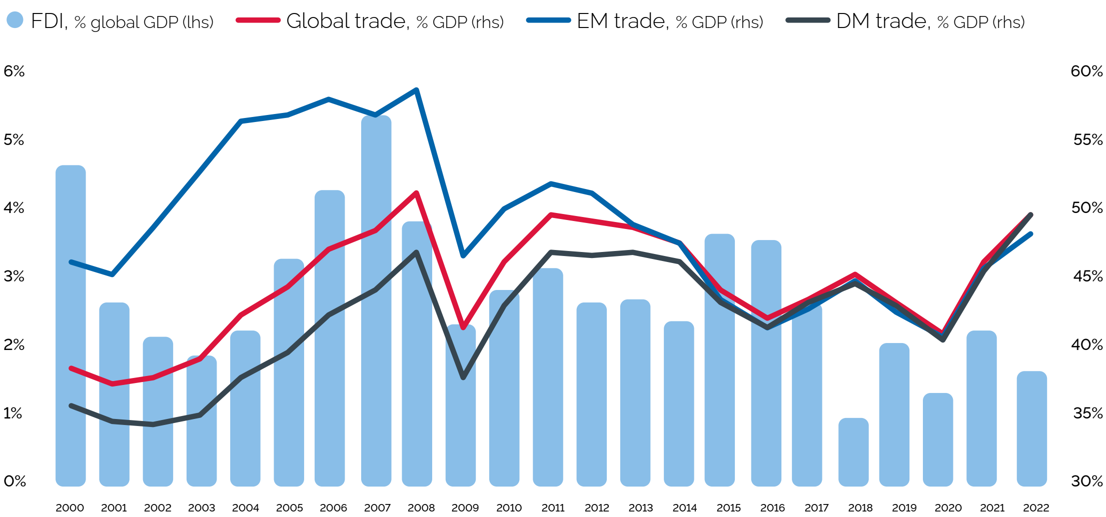
The 2008–2009 financial crisis launched a fundamental transformation of the global economy, which accelerated after the pandemic. Concerned by the lessons of the financial crisis, developed countries strengthened macroprudential policies, and reduced liberalization measures & increased protectionist ones. Growing competition between developed and developing countries (as evidenced by the trade war between the US and China) and increasing geopolitical tensions around the world added economic sanctions and more restrictions. Combined with regionalization and fragmentation, this encouraged deglobalization, resulting in the reduction of global financial and trade flows.

Figure 2.2 Changes in regulatory measures on investment, 2004–2022



Source: UNCTAD[11]

Figure 2.3 Global trade and FDI flows as % GDP, 2000–2022

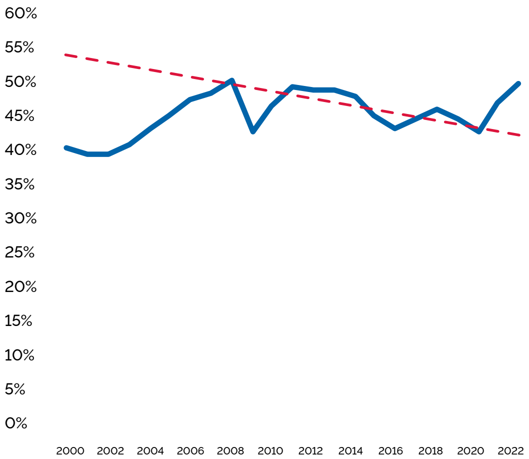


Sources: World Bank, IMF Databases.

Trade in goods-to-GDP ratio, one of the main indicators of globalization, was declining from 2008–2009 until 2020. The underlying trend was the slow growth of commodity trade compared to the GDP growth. As high commodity trade growth in 2021–2022 is likely to be a temporary phenomenon caused by high energy prices and logistics costs, a further decline of the trade-to-GDP ratio can be expected in the future . At the same time, trade in services increased significantly in 2010–2020. This reflects the growing importance of the services sector (ICT, logistics, transportation), which came to the fore during the pandemic.

> Further decline of the trade-to-GDP ratio can be expected in the future.

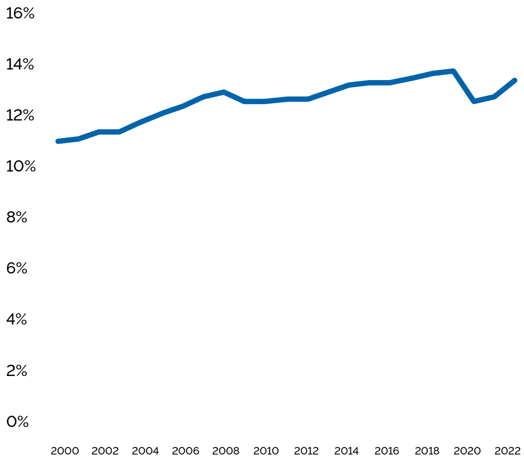
Figure 2.4 Global merchandise trade as % GDP



Sources: World Bank.

Note: Trendline for 2010–2020 data only

Figure 2.5 Global services trade as % GDP



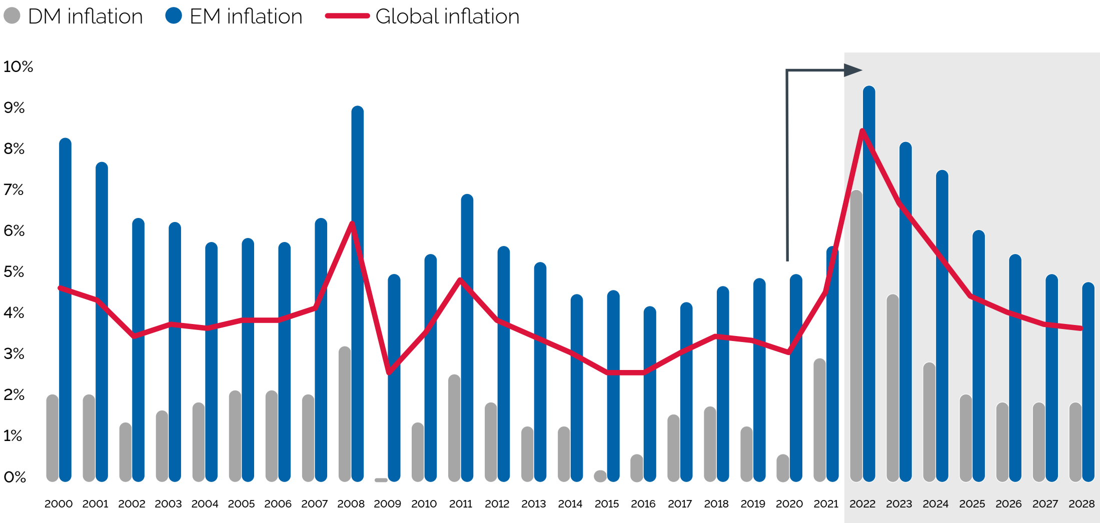
Sources: World Bank.

The global inflation rate remained low throughout the 2010s and until the end of the pandemic. Falling resource prices, rising savings rates, increased productivity, relatively low demand in the real economy, expanding migration, and the wider spread of remote work allowed for reduced labor costs. To stimulate economic activity, many developed countries maintained an ultra-easy monetary policy.

Before the 2008–2009 financial crisis, near-zero rates and quantitative easing policy were applied only in Japan as an extraordinary measure for fighting deflation. In the 2010s, zero lower bound became a generally accepted norm for developed countries. In 2020–2021, developed countries began to use unconventional monetary policy instruments (near-zero, zero or negative interest rates, quantitative, qualitative & credit easing, yield curve control, etc.) even more extensively, because traditional measures were no longer effective enough to stimulate growth. Developing countries were starting from higher rates, thus still managed to maintain economic activity via the traditional approach of lowering the key rates.

Global inflation started accelerating during the post-pandemic recovery period. In 2020–2021, prices for resources, materials, and logistics increased due to supply chain limitations, while labor productivity decreased, all accelerating inflation. On the demand side, ultra-easy monetary policies and generous fiscal stimulus also played a role. In 2022–2023, energy, food, and logistics disruptions caused by the sanctions pressure on Russia only added inflationary pressures on the global economy.

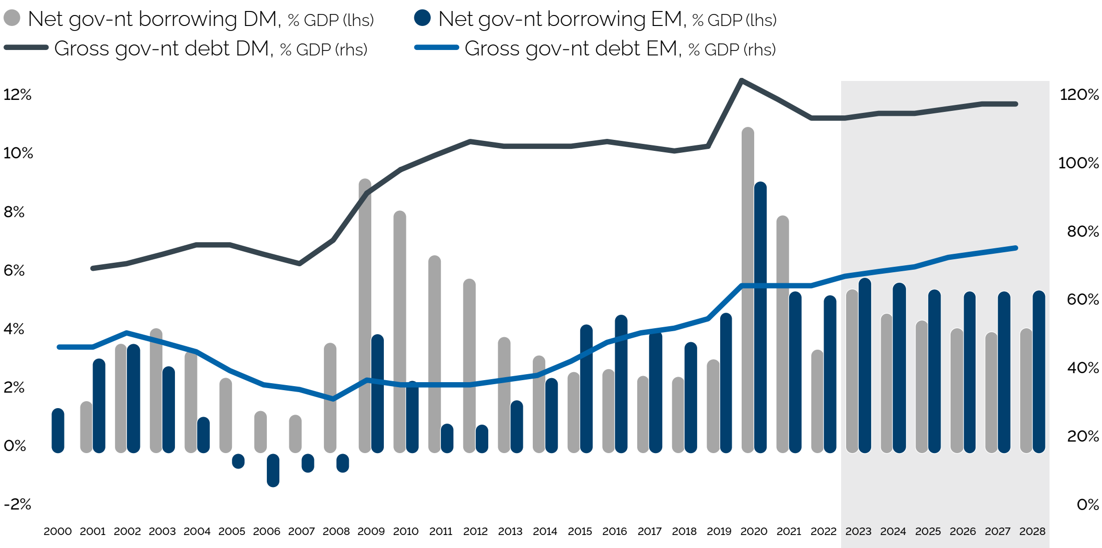
Figure 2.6 Inflation, 2000–2028



Source: IMF[12].

As the central banks of most developed countries believed that inflation was a temporary phenomenon, they started tightening monetary policy with delay—only in mid-2022. This in turn accelerated global inflation, since the US and the EU are major exporters. The central banks of developing countries started to raise rates earlier and continued until 2023, with major exceptions being Türkiye (due to the unorthodox approach to monetary policy taken by the country leadership), China (to stimulate economic activity after unprecedented lockdowns), and Russia (amid external challenges).

Figure 2.7 Accumulated and annual government debt, 2000–2028



Source: IMF[13].

Generous fiscal stimulus packages adopted by governments, combined with a decrease in budget revenues, led to the increase of debt burden in post-COVID world. This trend, coupled with negative external factors such as rising yields, inflation, devaluation of national currencies, and limited access to international capital markets have already led to defaults (Sri Lanka) or increased the risk thereof in a number of developing countries (Laos, Tunisia, Ghana, Kenya, Ethiopia, Pakistan, Egypt, etc.) Many developing countries have struggled with debt payments in the wake of the pandemic. IMF, the World Bank, and G20 have aggressively urged creditor countries, including China, to waive and/or restructure debts under the Debt Service Suspension Initiative. As a result of the recent crises, China has faced a sharp increase in bad loans in its portfolio and has been forced to reduce the volume of loans.[14] Despite the partial restructuring of debt (including the funds owed to China, which since 2017 has been the world's largest bilateral creditor of low- and middle-income economies, including Pakistan, Kenya, Zambia, Laos, and Mongolia, which owe 50% of their debt to China[15]), dozens of economies are still at risk of default.

The debt problem continues to worsen not only at the sovereign, but also at the corporate level. This is particularly true for China, a country which is in the process of becoming not only one of the largest creditors, but also a significant debtor. The Chinese debt ratio has been the highest among developing countries since the beginning of the GFC: the total volume of loans to PRC's[16] non-financial sector increased from 139% of GDP at the end of 2008 to 306 % of GDP in Q1 2023. Such speculative demand created a bubble: in mid-2022, Chinese property prices collapsed, and at the end of 2022, the default rate of US dollar-denominated Chinese developers' bonds exceeded 50% (meaning more than half of Chinese developers failed to meet their financial obligations). Government measures helped mitigate the crisis and prevent its spread to other sectors of the economy, but the country's debt problems are likely to remain and slow down economic growth in the medium term.

Developed countries also faced debt problems. Interest rate hikes followed by decreases in bond prices lead to high unrealized losses in the financial sector ($620 billion in the US at the end of 2022[17]). After a series of bank failures in the US (Silicon Valley Bank, Signature Bank, Silvergate) and Europe (Credit Suisse) in March 2023, the Federal Reserve adopted measures to prevent further contamination. In the real sector, the number of bankruptcies increased by 61% this year in the US and reached their highest level since 2015 in the EU[18]. With rising rates, increased inflation and falling demand, risks for the financial and real estate sectors of developed countries remain.

In conclusion, the global economic landscape has undergone significant transformations over the past decades, marked by the rise and evolution of emerging markets. The era of easy growth that characterized the early 21st century is now facing formidable challenges, particularly highlighted by the unprecedented events triggered by the COVID-19 pandemic. The intricate interplay between developed and developing economies, coupled with escalating geopolitical tensions, has ushered in an era of deglobalization, manifesting in reduced trade and financial flows. The post-pandemic recovery has brought about a surge in inflation, prompting central banks to implement varying monetary policies. However, the specter of a global recession looms large, impacting both sovereign and corporate debt levels. The debt burden, especially pronounced in developing countries, raises concerns about defaults and economic slowdowns. As the world grapples with these complexities, it becomes evident that the road ahead demands strategic foresight, international collaboration, and innovative policy measures to navigate the intricate challenges and foster sustained global economic resilience.

2.2. Keep Your Seatbelts Fastened: Political Turbulence Will Continue to Disrupt Economic Growth

Recent years have seen major economic challenges trigger social issues and reshape domestic and international politics. The COVID-19 pandemic reversed progress in reducing global poverty, hunger, and inequality, though its net impact is yet to be fully estimated. Preliminary data suggests a decline in extreme poverty in 2020, attributed to a high mortality among the poor in developing countries and temporary government financial support in developed nations. Global inequality is rising as incomes of the poorest 20% declined significantly while the incomes of the wealthiest were less affected. The UN's Sustainable Development Goals face challenges, with many targets off-track for 2030. Effective cooperation between developing and developed countries remains a struggle, illustrated by issues like climate change and the COVID vaccination.

Developing countries gain clout with shifting power dynamics, as the world sees increased fragmentation and regionalization. Economic measures serve political needs, fostering protectionism, but also bilateral and regional trade agreements. Populism fuels political polarization, eroding trust in politics, media, and international organizations, while businesses remain relatively trusted. Trust in social media is also declining due to concerns about manipulation and false information. These trends are expected to continue in the 2020s, potentially leading to disruptions in the global economy, depending on its ability to adapt to the changing dynamics.

Massive economic challenges in recent years have challenged social cohesion and reshuffled domestic and international politics. COVID-19 reverted much of the progress made in the 2010s in terms of reducing global poverty and inequality, while escalating geopolitical tensions accelerated fragmentation, deglobalization, and populism. The World Bank dubbed this the "Reversal Problem", i.e., economic development in many cases starting to go backwards, contrary to any expectation of perpetual growth[19].

Development Reversed

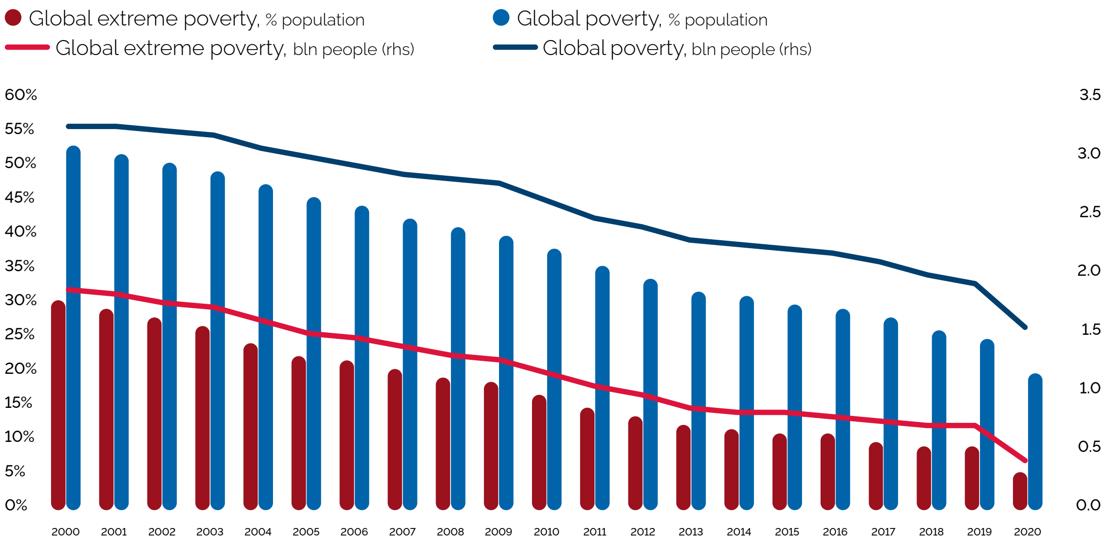
The net effect of the pandemic on global poverty is yet to be estimated. The latest reliable data goes back to 2019, and all the newer estimates are based only on small sample sizes[20]. Moreover, in September 2022, the World Bank shifted the poverty thresholds[vi], adding methodological challenges to the consistency of estimations.

While the very first reports about the COVID-19 effect on poverty and inequality were alarming[21], currently available preliminary data shows that extreme poverty declined in 2020. There are two key reasons for this reduction of the number of poor, and neither inspire optimism. In developing countries, a possible explanation is the high death toll among the poor due to limited access to sanitation and medical services. In developed countries, falling poverty may be the result of temporary financial support provided by governments. In both cases, reducing poverty numbers does not necessarily mean sustained improvement in the quality of life of the poor.

“ In developing countries, a possible explanation is the high death toll among the poor due to limited access to sanitation and medical services. In developed countries, falling poverty may be the result of temporary financial support provided by governments. In both cases, reducing poverty numbers does not necessarily mean sustained improvement in the quality of life of the poor.

vi In September 2022, the World Bank shifted poverty lines: extreme poverty was defined as living below the International Poverty Line, now set at $2.15 per day in 2017 prices (from $1.90 per day in 2011 prices). The definition of poverty adopted in lower-middle-income countries shifted from $3.20 per day in 2011 prices to $3.65 per day in 2017 prices, while the definition of upper-middle-income countries shifted to $6.85 in 2017 prices, replacing the previous $5.50 line expressed in 2011 prices.

Figure 2.8 Global poverty, 2000–2020

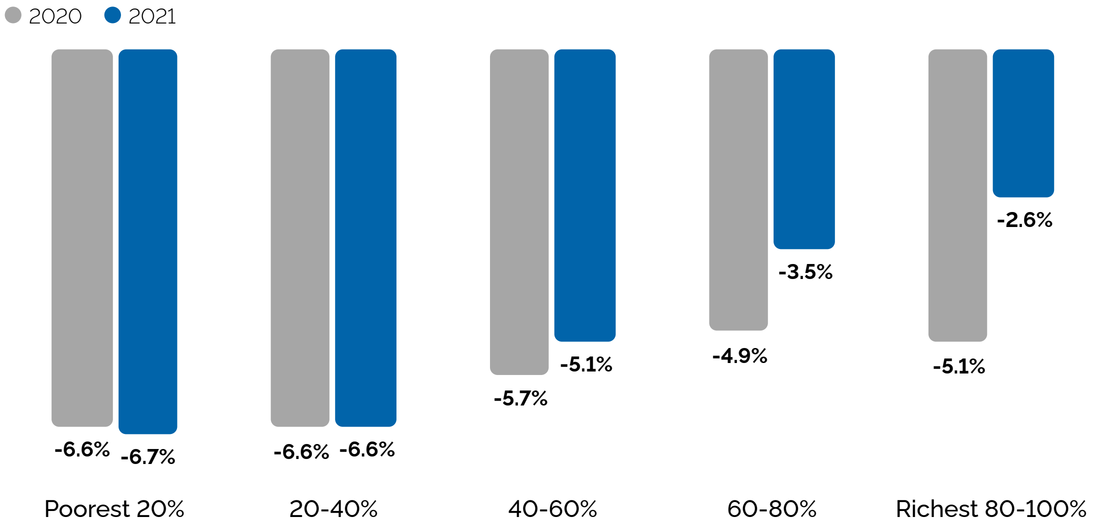


Note. Global poverty refers to a poverty headcount ratio at $3.65 a day (2017 PPP)—this is a definition of poverty adopted in lower-middle-income countries. Global extreme poverty refers to a poverty headcount ratio at $2.15 a day (2017 PPP)

Source: World bank WDI data and author's estimates

Evidence shows that the poorest 20% of the world's population experienced the largest decline of income both in 2020 and in 2021[22]. This is because vulnerable groups—the young, the elderly, women, migrants, people with low qualification and the informally employed—were hit the hardest. Meanwhile, incomes of the richest did not fall as significantly throughout the two years, as the decline in 2020 was offset in 2021 by around 45%. These are clear signs of rising inequality both globally and at country levels.

Figure 2.9 Percent of income loss by income quintile due to COVID-19 compared to pre-pandemic estimates



Source: Yonzan, C. via the World Bank Blog[23].

Poverty and inequality are a part of the global agenda of the UN Sustainable Development Goals (SDG) adopted in 2015 along with economic and environmental dimensions of development. The agenda highlights the most important global issues which must be either solved or at least partially tackled by 2030. However, out of roughly 140 targets that can be evaluated, half of them are not on track to be achieved by 2030. Moreover, more than 30% of these targets saw no progress since 2015 or, even worse, regressed below the baseline[24].

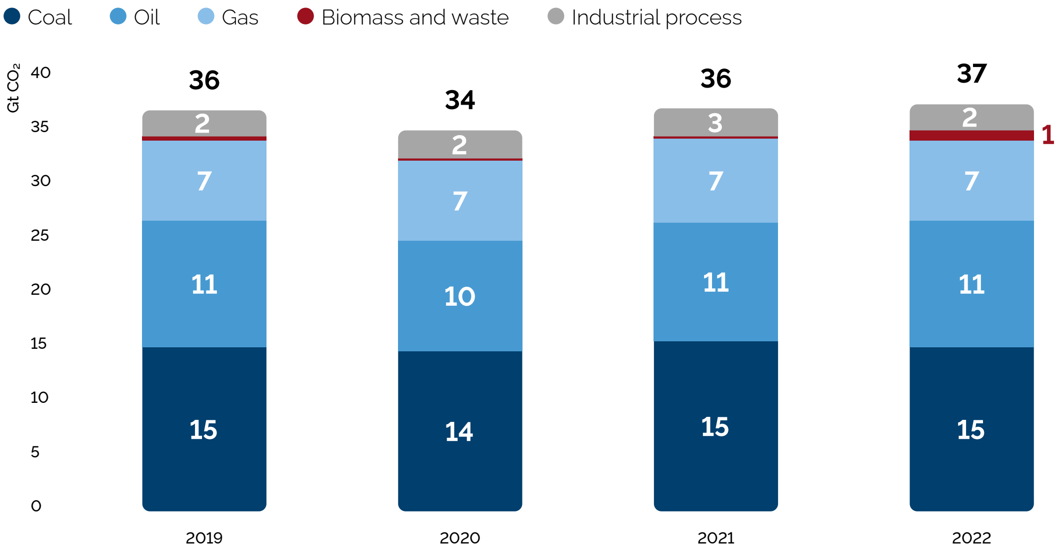
Among those issues still requiring urgent attention on behalf of governments and international organizations are not only poverty and hunger, which both have been growing back to the worst levels in more than two decades, but also energy access, quality & coverage by education & healthcare, and peace, justice, and institutions[25]. The perpetual deficiencies in these development aspects in emerging markets, mostly tackled in richer countries, are putting developing countries face to face with a perspective that traditional growth models and international support may be delivering on the promise of a better life for the absolute majority of the global population.

Weak International Regimes for Climate and Health

The complexity of development issues, differing views on national development trajectories, and geopolitical tensions are all challenging global institutions to tackle the development issues at hand. Two fundamental threats to development—health and climate change—illustrate the limits of what global cooperation institutions can do.

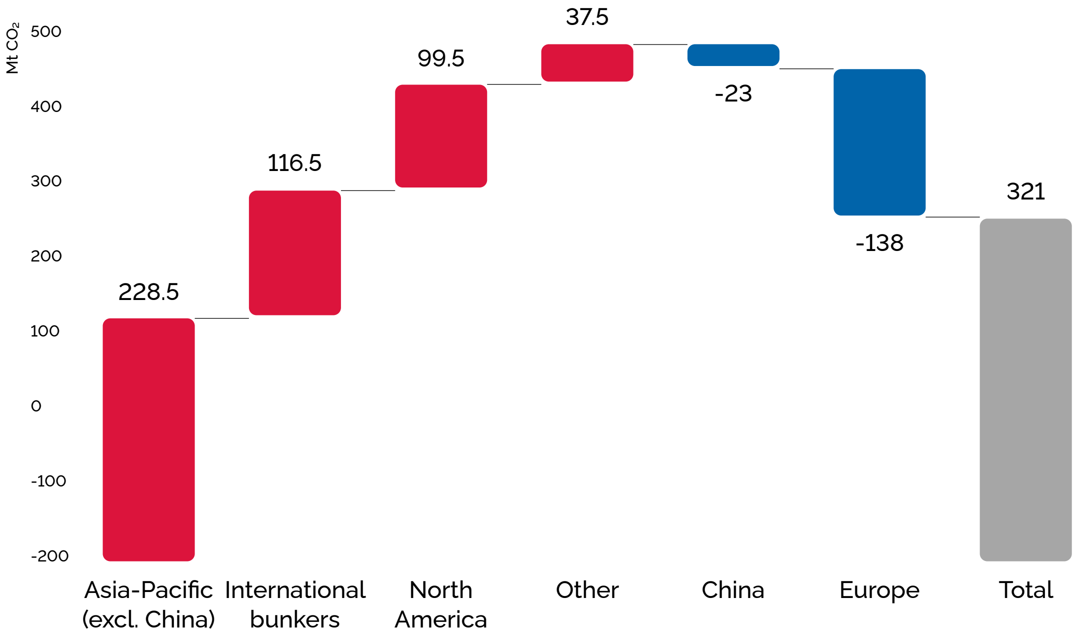
Climate change threatens the viability of social, environmental, and economic systems and may make some regions less habitable due to food and water scarcity, leading to swelling hunger, increasing climate migration, and rising casualties resulting from natural disasters. Yet, while the total volume of greenhouse gas emissions declined during 2020 by 5.2% YoY due to economic crises, it started to increase again with the upswing of economic activity. In particular, global CO_2 emissions reached a new all-time high of 36.8 Gt by the end of 2022, increasing everywhere except China (due to economic slowdown) and Europe (due to the energy crisis).

Figure 2.10 Energy and process CO_2 emissions (Gt)



Source: International Energy Agency[26].

Figure 2.11 Change in CO_2 emissions by region, 2021–2022 (Mt)



The Paris Agreement has launched a new era of international cooperation on climate change, but the mechanisms still do not deliver on the intended mitigation and adaptation goals. According to the latest Nationally Determined Contributions (NDCs) by the Paris Agreement parties, global GHG emissions are projected to be 0.3% above the 2019 level in 2030—they need to decline by 43–60% to achieve the long-term goal of keeping the warming to 1.5°C[27]. Even if all the conditional elements of the NDCs are implemented, global emissions would still be 3.1–6.6% higher than in 2019. This means that there is a significant gap between the projected emission levels and the levels needed to achieve the long-term goals of the Paris Agreement.

Simultaneously with putting efforts into reducing GHG emissions, countries have to spend resources on adapting to climate change that is already taking place. Estimated adaptation costs in developing countries are 5–10 times higher than currently dedicated climate finance, and this gap is only projected to widen[28].

There are plenty of announced climate initiatives on the global, regional (such as European Green Deal and REPowerEU), and in-country (China's green strategy[29] for example) levels, but they are often not carried out in reality. One of the main reasons for these mechanisms' inefficiency is unresolved differences on burden-sharing between developed and developing countries. While developed countries are now pioneering in commitments towards energy transition, developing countries do not feel able to match the ambition of those commitments, pointing out that historically emissions accompanied growth of the developed countries' economic growth and thus appropriate "carbon space" should be allowed for.

Initially developed countries pledged spending $100 bn a year in 2009–2020 for their developing peers to take climate action, yet, according to the UN[30], they neither reached this sum (the maximum was $83.3 bn in 2020), nor distributed the funds equitably (just 8% of the total went to low-income countries and about 25% to Africa as a whole). In addition to government spending, investment has come from international organizations (i.e., the World Bank, the IMF, and others) and the private sector. At present, public and private climate finance in total may have reached up to $940 bn in 2021 (which is more than twice as large as in 2010, yet still low compared to global green needs).

Another vivid example of global institutions struggling to provide effective mechanisms for international cooperation between the developing and developed countries was the global vaccination campaign. The Global COVID-19 Vaccine Platform, COVAX and other international initiatives (such as UNICEF vaccine supplies) fell short of providing the needed support to developing, and especially low-income countries. Total share of doses[31] imported by low-income economies was just 6.3% of total and the share of fully-vaccinated population in 2022 in these countries reached only 19%[32] (compared to 75% in high-income countries). The majority of international vaccine exports were supplied via bilateral deals (Figure 11), mostly from China, EU, India and the United States.

Figure 2.12 Imports of vaccines by country group, million doses

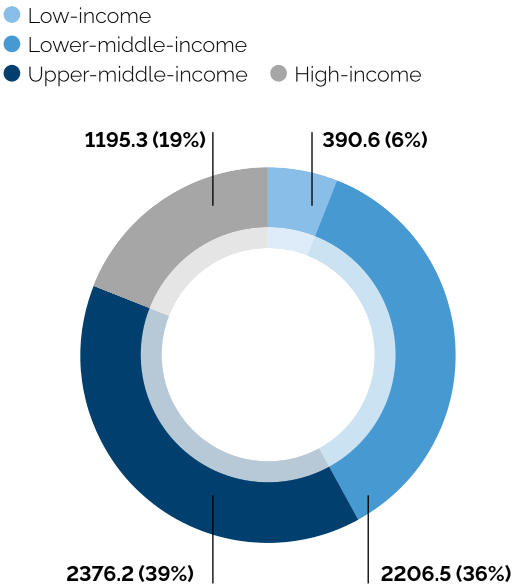
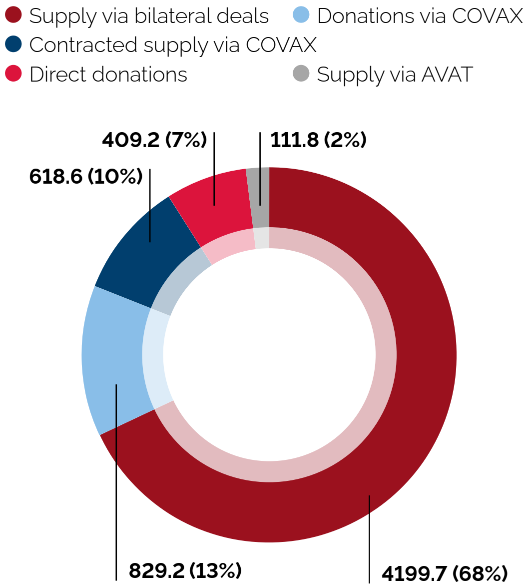


Figure 2.13 Exports of vaccines by source, million doses



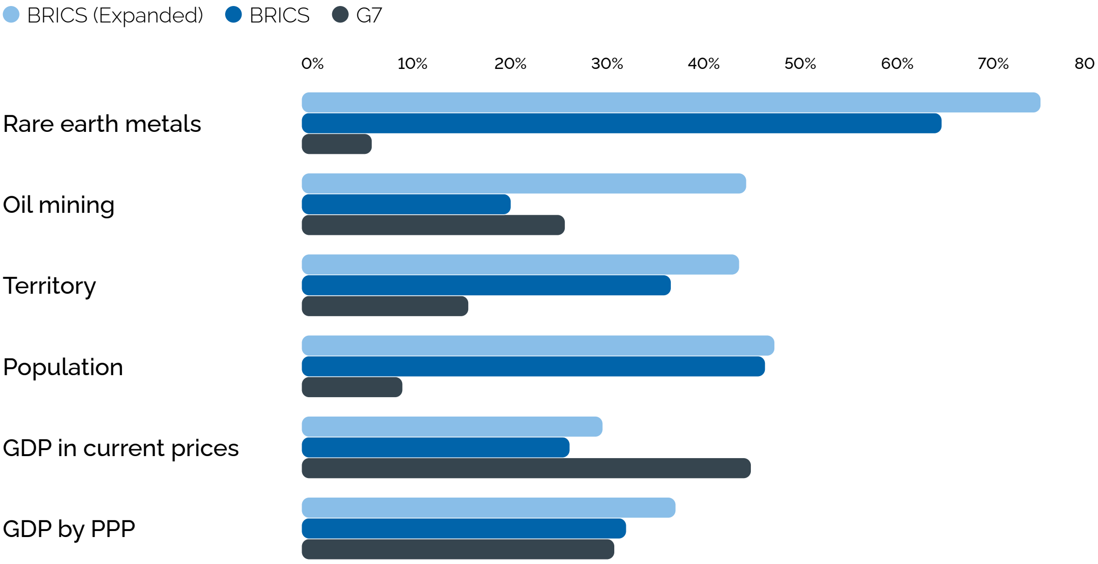
Source: WTO-IMF Vaccine Trade Tracker[33].

Note. As of 31 May 2022, imports are defined as the number of doses received from producing economies, mirroring the information provided in the exports section. This definition does not take into account imports of vaccine substances in bulk form to be used in "fill and finish" sites.

New Centers of Power in the Multipolar World

Ineffectiveness of developed countries and global institutions in responding to global challenges leaves a vacuum for new platforms and coalitions to emerge. Developing countries are forming new alliances that can resolve some of the issues pertinent to emerging markets on their own terms. One example of such a platform is BRICS. The group has surpassed G7 in terms of total GDP by PPP, and the expansion of BRICS discussed during their summit in 2023 (with Egypt, Iran, UAE, Saudi Arabia, and Ethiopia joining the club in 2024) will only further advance the alliance's ability to serve as an economic forum of developing countries (Figure 12).

Figure 2.14 Select aggregate indicators of the Group of Seven (G7), BRICS, and BRICS (Expanded), % of world

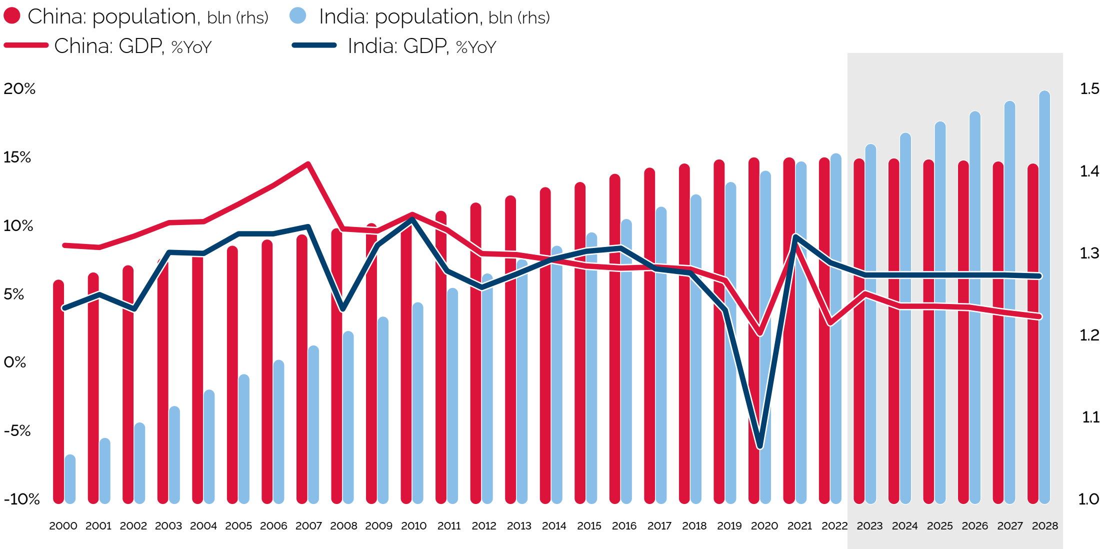


Note. Latest data available for 2022 and/or 2021.

Source: Global Barometer HSE[34].

The dynamics within developing countries are undergoing a transformation. Over the past few decades, the Chinese economy, after a period of rapid expansion, has entered a phase of slowed growth rates—a transition that economists had anticipated[35,36] due to a predictable economic cycle. The initial surge in growth emanated from commencing at a low economic base, utilizing the mobilization of capital and labor production alongside their effective rearrangement. As expected, this approach was destined to yield diminishing returns once the potential of these factors was maximized. Like other economies aiming to surpass the "middle-income trap[37]," China now confronts the challenge of sustaining growth through increased productivity via innovation—a more intricate task. While China possesses a robust innovation system compared to Southeast Asian economies like Thailand, Vietnam, and Malaysia, it grapples with challenges such as stifled demand, demographic pressures, and structural issues. Projections indicate China is set to maintain an annual growth rate of around 5%—slower than before but still outpacing most developed economies. The jury is still out on whether the country will successfully move to high-income status. Meanwhile, international attention has turned to India in recent years, with its economy gaining momentum due to sound economic policies, a rising population, and ongoing industrial development.

Figure 2.15 Economic growth and population in China and India, 2000–2028



Source: IMF[38].

Shifting Tides: Some Companies Move Production from China to Southeast Asia, Some Stay

A growing number of manufacturing and tech companies are relocating their production from China to Southeast Asia. This trend is driven by several factors, including increasing labor costs in China, the ongoing US-China trade war, and a desire to diversify supply chains. The stringent response of China to the pandemic with the zero-COVID policy and lockdowns, which disrupted the ability of China-based manufacturers to deliver goods to the rest of the global economy, has further aggravated this trend.

Over the past five years, FDI flows into ASEAN member states rose by 41%, to $222 billion[39]. As a part of this trend, several major manufacturers and tech companies have shifted parts of their production. Apple relocated some of its iPhone production to Vietnam, Samsung expanded its smartphone and electronics manufacturing to Vietnam and Indonesia, Dell chose Vietnam as a hub for laptop production, HP diversified notebook production to Taiwan and Thailand, and Nike and Adidas moved portions of their footwear production to Vietnam and Indonesia. Additionally, Tesla is constructing a new electric vehicle plant in Indonesia, Panasonic shifted some battery production to Indonesia, and Sony relocated a segment of its semiconductor production to Japan and Malaysia. This reflects the increasing prominence of Southeast Asia as a desirable manufacturing destination for these companies.

These companies are drawn to Southeast Asia due to its low labor costs, a large and youthful workforce, and its proximity to China. The region also benefits from a growing number of free-trade agreements, making it easier for companies to export their products globally.

At the same time, many companies are choosing to remain in China. The country remains a major destination for foreign investment in manufacturing and is likely to continue playing a significant role in the global manufacturing landscape for years to come.

Companies that are staying in China are doing so for various reasons. Some are attracted to China's large domestic market and expanding middle class with rising disposable incomes. Others stay because of the country's skilled workforce. Additionally, some companies have already made substantial investments in manufacturing operations in China or have become accustomed to the well-established industrial infrastructure that is costly to replicate elsewhere.

The response that emerges among producers to this ambiguity of choice is the so-called "China+1" strategy. Companies keep their manufacturing base in China, but diversify it by adding a production base in at least one another emerging market, typically Vietnam, Indonesia, India, or Mexico to hedge risks of sudden disruptions in supply chains. Notable examples of companies that have employed this "China+1" strategy include Intel (Vietnam), Foxconn (India and Mexico), Bose (Malaysia), General Electric (India).

The increasing realization is that global institutions and leading global powers cannot solve every economic or political issue that the world is facing, therefore the significance of middle powers continues to rise. In contrast to great powers, these economies aim to find their own spheres of influence rather than try to shape the world. They usually enjoy a regional presence, have substantial economic and military capacity, important historical and cultural backgrounds, and a limited (generally regional) scope of ambitions[40]. While this concept was initially more noticeable in the developed countries cohort, with Japan, France, and Germany becoming important allies in shaping solutions for the economic problems, recently the importance of middle powers became more noticeable among the developing countries, too. These economies, such as Brazil, India, South Africa, Iran, Indonesia, Turkey, Nigeria, and Ethiopia, have become key for international interactions in various fields, and they help to balance the global cultural, political, and economic connections in an increasingly fragmented world.

Crouching Fragmentation, Hidden Protectionism

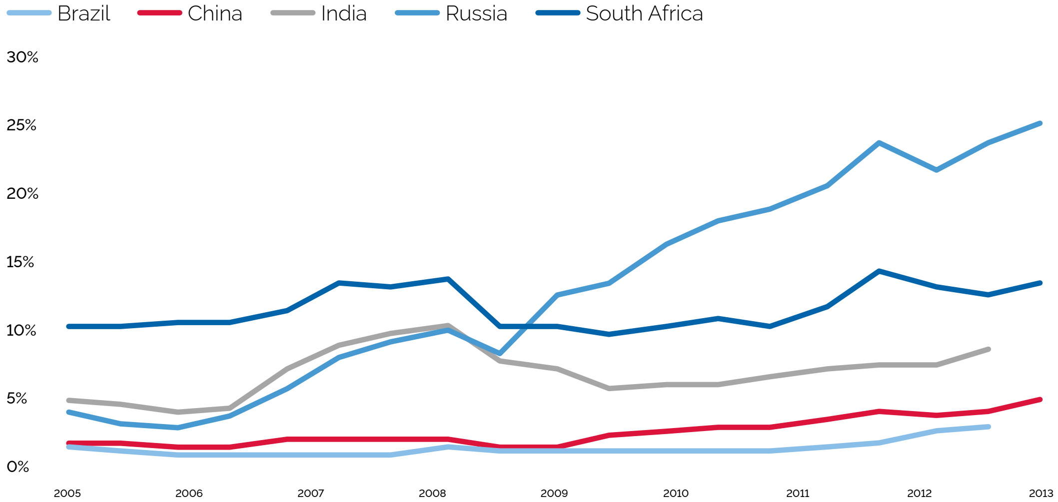
Meanwhile, fragmentation continues to deepen. The majority of countries are strengthening their protectionist measures, often due to placing national security and politics above economic interests. Recent events such as the pandemic and geopolitical tensions in Europe, Asia, and the Middle East in 2022–2023, have further exacerbated the situation. The world's largest economies are resorting to protectionist instruments to reduce their dependence on other countries. New trade restrictions introduced annually increased from around 250 in 2010 to almost 3,000 in 2022[41].

“ The world's largest economies are resorting to protectionist instruments to reduce their dependence on other countries. New trade restrictions introduced annually increased from around 250 in 2010 to almost 3,000 in 2022.

Increasing fragmentation is also noticeable through the rising number of investment and trade agreements in the world (the latter increased from 256 in 2008 to 595 in 2023[42]), including bilateral, multilateral, and even mega-regional ones. The largest free-trade agreement signed recently was the Regional Comprehensive Economic Partnership (RCEP, effective from 1 January 2022), which includes ten members of ASEAN and China, Japan, South Korea, Australia, and New Zealand.

Fragmentation is also noticeable in global reserves and currency trends. In the 2010s, many developing countries started settling transactions in national currencies and increasing the share of gold in forex reserves, lowering their dependence on the US dollar. At the same time, the Chinese renminbi got more demand due to its inclusion in the IMF Special Drawing Rights basket and an increase in China's trade and investment volumes. Although the US dollar remains the principal currency of international settlements, there are a growing number of signs of a decrease in its importance[43].

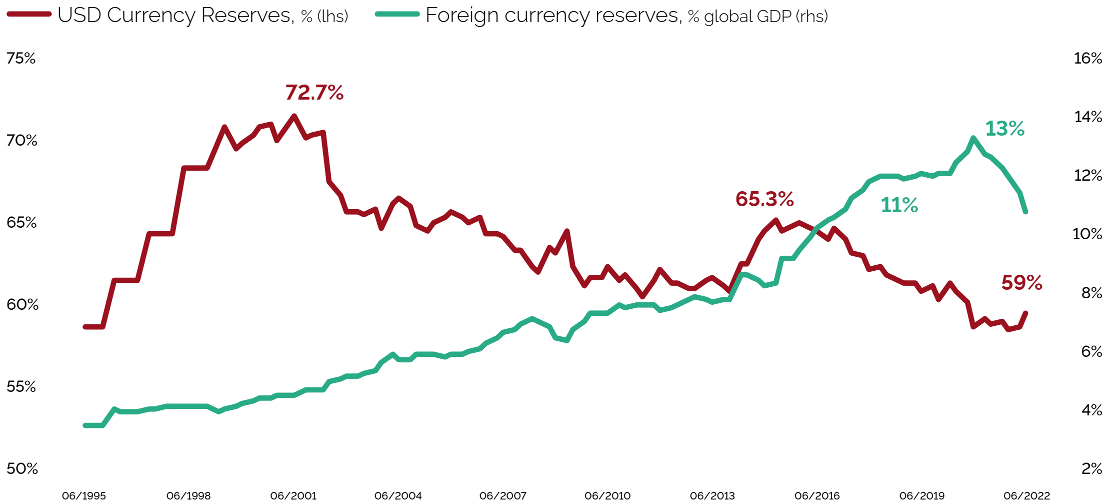
Figure 2.16 Share of gold in reserves, BRICS countries



Sources: Central Banks of BRICS countries (2023), National Statistics

Note: The latest available data is: 09.2023 for Russia, 03.2023 for South Africa, 08.2023 for China

Figure 2.17 Structure of foreign exchange reserves



Source: IMF

Economic measures are also becoming not only tools for the support of economic growth, but weapons in peace restoration or global competition. For instance, the sanctions imposed by the international community on Iran and Venezuela were intended to prompt changes in the ruling regimes of these countries. However, the U.S. sanctions on Iran and Venezuela had the unintended consequence of driving up global oil prices, benefiting U.S. oil companies. Similarly, sanctions on China were ostensibly aimed at restoring the observance of human rights, but concurrently, they positioned U.S. companies favorably by impeding the competitive capabilities of Chinese firms in the U.S. market.

Despite the utilization of these strategies, the effectiveness of economic sanctions remains a subject of ongoing debate. Some critics, including the Peterson Institute for International Economics, argue that such measures frequently fall short of achieving their intended objectives. According to their research, only roughly one-third of cases[44] involving sanctions imposed by the international community result in any changes in policy moving in the intended direction. At the same time, sanctions do affect global economic growth prospects by reshuffling supply chains and thus imposing transactional costs, raising the price of commodities and—more importantly—introducing additional risk and uncertainty, fomenting hedging strategies at increased cost[45].

As sanctions are proving to not be a reliable tool for winning in global economic competition, countries are resorting to increasing the role of the state in economic matters. On the national level, rising geopolitical pressures prompt countries to increase military expenses and support of the state companies. On the sector level, the highest attention is directed to critical technologies, where excessive reliance on suppliers in developing countries proved to be risky in recent years.

The adoption of the CHIPS ("Creating Helpful Incentives to Produce Semiconductors for America"), the Inflation Reduction Act, and the Science Act in the USA in 2022 is one of the most striking examples of protectionist policies introduced in developed countries in recent years. Through this act, the United States expects to support domestic manufacturers, increase US competitiveness, and restrain the rapid development of the Asian—mainly Chinese—semiconductor sector. At present, the US accounts for about 10% of the market, while East Asia accounts for 75%[46]. As a part of the CHIPS and Science Acts, the US government allocated vast investments to support the domestic tech industry—in total $280 bn[47]. The Inflation Reduction Act also announced an investment of $370 billion by 2030 in clean energy and energy efficiency industries through tax credits and incentives. These policies are likely to cause retaliatory measures in other countries, leading to a subsidy race globally.

In developing countries, a notable example is the "self-reliant" India campaign (Atmanirbhar Bharat Abhiyaan) and its main approach: "Make in India." This policy is aimed at developing domestic production, making citizens and producers *"independent and self-reliant in all senses"*[48] by reducing dependence on imports, in particular reducing imports from China[49]. As a result of this policy, average import tariffs in India have increased significantly. The WTO estimates that most favored nation (MFN) import duties for all products in India were at 18.3% in 2022, the highest among the world's major economies[50].

Populism Shrugged

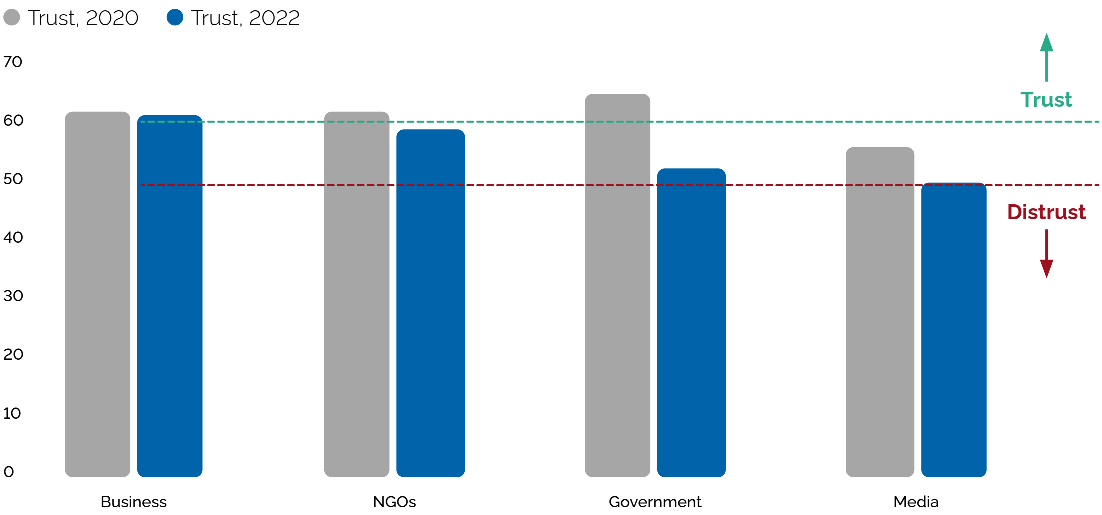
Along with more intense governmental intervention into the economy, populism trends are rising. To get support from the electorate, politicians adapt to popular opinions, promise quick solutions, and blame the current government—and foreign adversaries—for most of the existing problems, increasing polarization inside the country.

On the right-wing side, there is a notable worsening attitude towards migrants in Europe and North America or towards Muslims in non-Muslim countries. This is resulting in amended migration laws, making migration for minorities more difficult (such as the "Citizenship Act" in India or reforms in European countries on both the regional[51] and country-level[vii]). Typical right-wing policy examples include "Brexit" in the United Kingdom, the election of D. Trump as the US president[52], the election of a new right-wing government in Italy in 2022 (which aimed to build "a new Italian imagination"), and the rising popularity of far-right parties in Germany in 2023.

On the left-wing side, rising populist trends are increasing attention to minorities' equality, green policy, and poverty. Recent developments in Peru and Brazil are great illustrations of rising nation-wide left-wing movements. Peru saw seven presidents replaced since 2016. In 2021, Pedro Castillo became the first left-wing president in more than a generation, using a populist slogan: "No More Poor People in a Rich Country." In December 2022, he was ousted because of a corruption scandal. Similar to other two recent impeachments of a populist president, Castillo's loss led to major social unrest in poor regions which supported him, as well as human casualties[53]. In Brazil, populist Jair Bolsonaru won the election in 2018. During the Covid-19 pandemic, he opposed wearing masks and the introduction of quarantines (which led to a high death toll[54]), not to mention mismanaging economic support (GDP fell by 3.3% in 2020). As a result, in 2022 Bolsonaro lost the election to his opponent L. de Silva.

vii For example, in 2023 Sweden challenged conditions for family member immigration and restricted possibilities for residence permits on humanitarian grounds

Figure 2.18 Public trust towards institutions, 2020 and 2022

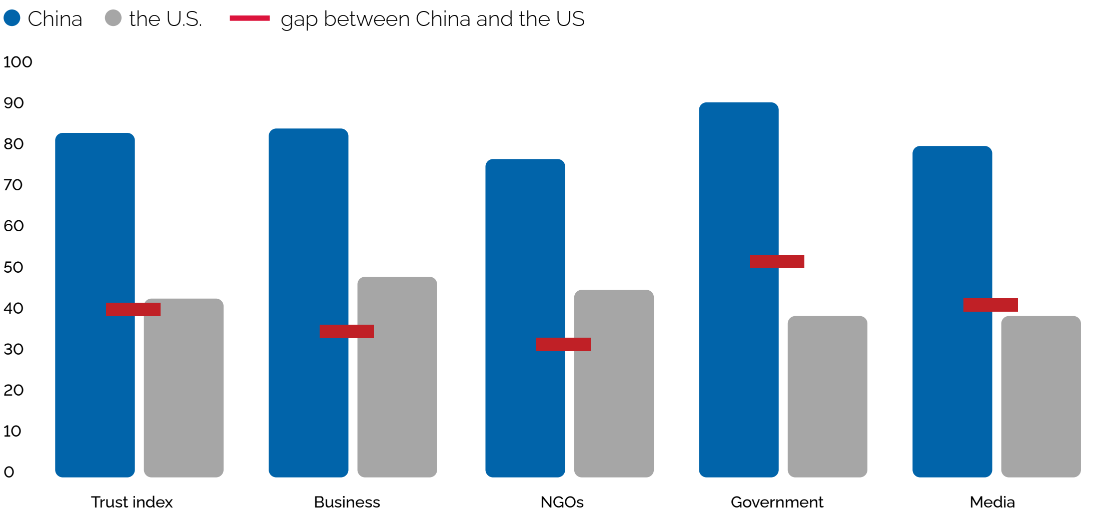


Note. 27 countries, i.e., Argentina, Australia, Brazil, Canada, China, Colombia, France, Germany, India, Indonesia, Ireland, Italy, Japan, Kenya, Malaysia, Mexico, Russia, Saudi Arabia, Singapore, S. Africa, S. Korea, Spain, Thailand, The Netherlands, the UAE, the UK, the US.

Source: Edelman Trust Barometer[55]

These populist promises are often not fulfilled, which leads to rising resentment and mistrust towards politics, media, and international organizations among the population. Business appeared the only trusted institution in 2022, with government and media coming very close to the "mistrust" threshold in 27 countries, both developed and developing. The sharpest drop in public confidence was in the United States[56] and the EU[57] as a result of mismanaged responses to the pandemic, geopolitical pressures, increasing cost of living, and rising rates. Developing countries tend to have comparatively higher trust levels, with China, the UAE, Indonesia, India, and Saudi Arabia topping the list. The divergence in public trust between Chinese and American respondents has widened to the all-time high, exemplifying the differences between emerging and developed economies.

Figure 2.19 Trust divergence between China and the United States, 2022



Source: Edelman Trust Barometer[58]

Trust in social media is also falling both in developed[59] and developing[60] countries. Respondents believe that social media makes it easier to manipulate people and increase polarization in society, and while it helps to stay informed, the news consumed via social media platforms might turn out to be fake. 76% of respondents globally[61] worry that false information can be used as a weapon.

In conclusion, the intricate interplay of economic challenges, health crises, and geopolitical tensions in the 2020s has triggered a reversal of progress in poverty reduction and reshaped global dynamics. As a result, the trends of fragmentation, regionalization, and deglobalization are expected to intensify, leading to increased trade and migration restrictions, logistical barriers, and financial challenges. The long-term impact of this fragmentation could result in a global GDP loss ranging from 0.2% to 12%[62]. The extent of this disruption hinges on the ability of emerging markets to serve as new regional leaders, contributing to the reshaping of the global economy. The world faces a critical imperative to foster international cooperation, address climate change, and bridge divides to navigate the challenges of our current era effectively.

2.3. People Power: How Demographics Shape Economic Policies

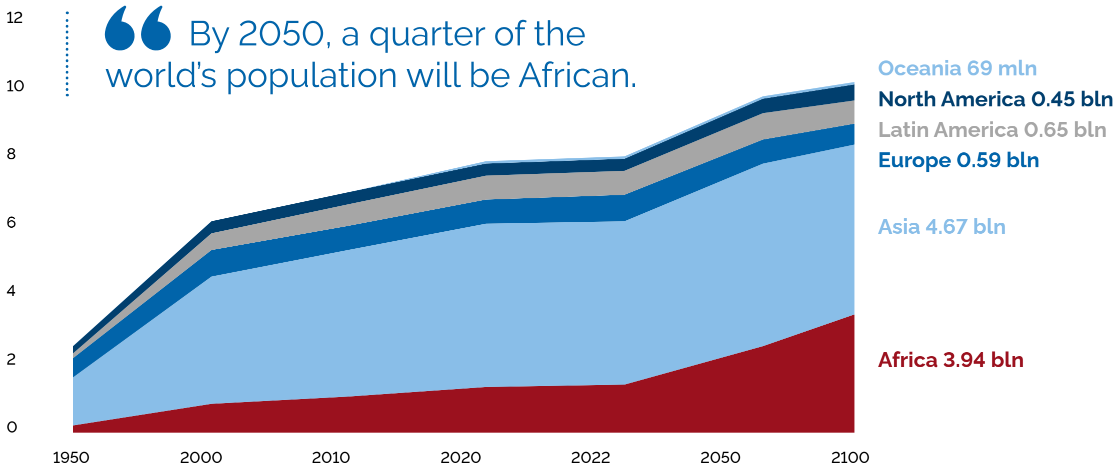
Demography plays a dual role, acting as both a catalyst and a challenge. Economies like Japan, Hong Kong, Singapore, Taiwan, South Korea, and China once rode the demographic wave to prosperity, but now they grapple with the demands of an aging population. On the other hand, India and several African nations, including Nigeria and Kenya, are harnessing their demographic potential, although not without hurdles. The concept of the "demographic dividend" prevails, where countries with youthful populations can experience economic growth, but seizing this dividend requires prudent planning.

The dynamics in Asia demonstrate the contrast between aging established economies and emerging nations benefiting from their youth. China has already depleted its first demographic dividend, while India holds great potential if it can address youth unemployment. Latin American countries face the challenge of missed opportunities due to low labor productivity and insufficient global integration, causing them to grapple with poverty and inequality. In Africa, a youthful population could be a treasure, but labor market mismatches and the risk of premature deindustrialization need to be addressed for this potential to be unlocked.

The focus on boosting productivity and establishing social welfare systems is pivotal for both aging and young nations. The transition in the consumer class is undergoing change as the silver economy expands. As life expectancy increases, the elderly population's share rises, impacting markets worldwide. The aging of populations in high-income nations alongside economic growth in less affluent countries is causing a surge in migration, leading to significant economic changes in developing countries. Asia has outpaced Europe in terms of migrant inflow, especially as countries like Japan and South Korea begin to liberalize their immigration policies. A key asset for countries experiencing emigration is remittances, which have surged in recent years and have become a crucial source of financing for low-income countries. Innovations in remittance technologies, including blockchain-powered solutions, are gaining momentum. Furthermore, migration is shaping countries' demographics, with diasporas becoming influential economic players, forming powerful political and economic communities engaged in international commercial networks.

Demography can be both a headwind and a tailwind: it once propelled Japan, Hong Kong, Singapore, Taiwan, South Korea, and eventually China to success. However, it now presents these nations with new challenges as they grapple with an aging population's demands on healthcare and infrastructure. Meanwhile, India, African nations such as Nigeria, the DR Congo, Kenya, and others are seizing their demographic opportunity while facing demographic challenges of their own.

Figure 2.20 Total population per region, bln



Source: UN Population Division.

Demographic Dividend or Liability

It is now an article of faith that economies with younger populations can enjoy higher economic growth and gross domestic product compared to countries with larger shares of dependents, often dubbed the "demographic dividend."

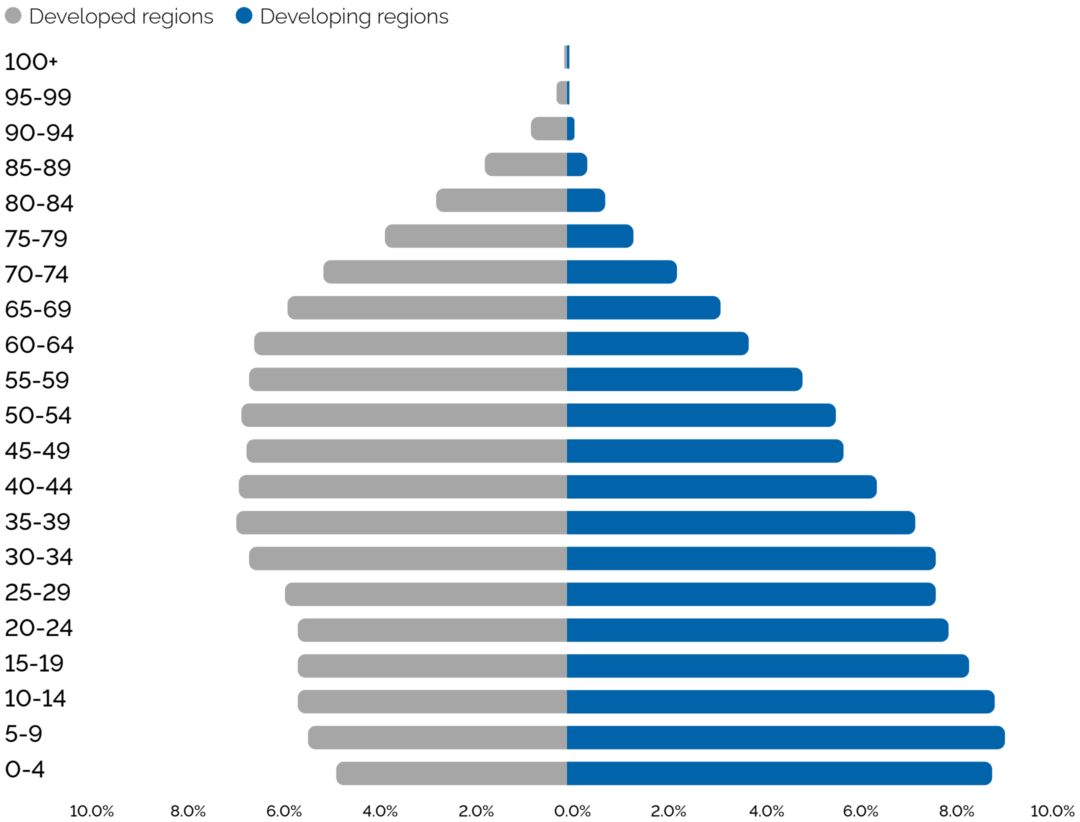
This dividend is fueled by demographic transitions, when moving from low-productivity to an industrial economic structure is accompanied by a decline in mortality rates and sustained high fertility rates. The young human resources available from such a transition can be directed towards economic development and contribute up to 0.6% of GDP growth[63], known as the first demographic dividend. Economies could potentially also benefit from the second dividend, when after the demographic transition (i.e., when both mortality and fertility rates go down, as observed in developed countries), the elderly continue to contribute to economic growth with its accumulated human and financial capital resources, adding up to ~1% of GDP[64]. To capitalize on any of these two dividends, though, governments should plan in advance.

Table 2.1 World demographic characteristics

	POPULATION, MILLIONS	SHARE OF WORLD POPULATION, %	TOTAL FERTILITY RATE	LIFE EXPECTANCY AT BIRTH, YEARS	SHARE OF POPULATION AGED 65+, %	SHARE OF POPULATION AGED 80+, %	RATIO OF WORKING-AGE TO NON-WORKING AGE POPULATION	SHARE OF INTERNATIONAL MIGRANTS IN POPULATION, %
High-income	1,252	16%	1.6	80.9	19.2	5.3	1.4	14.7
Upper-middle-income	2,526	32%	1.5	76	12.2	2.2	1.6	2
Lower-middle-income	3,432	43%	2.6	67	6.1	0.9	1.2	1
Low-income	738	9%	4.5	63	3.1	0.4	0.8	1.8

Source: IMF Analysis on Aging[65].

Figure 2.21 Demographic pyramids, developing vs developed countries, 2023



Source: UN Population Division.

In Asia, a dichotomy unfolds as the region embraces two divergent scenarios: the aging of established economic powerhouses and the demographic and economic surge of emerging nations. And while China, Singapore, Thailand are "graying", South and Southeast Asian countries such as India, Pakistan, Bangladesh, Philippines, and Indonesia are reaping the demographic dividends[66].

One country which has already used up its first demographic dividend is China. Its population peaked in 2022, when India then overtook the title of the most populous country. India is a vivid example of embracing the competitive advantage of the young population with a median age of 28 years and 600 million people aged between 18 and 35[67]. Its first demographic dividend has the potential to propel the Indian economy from $3 trillion to $9 trillion by 2030[68]. However, India faces a challenge of youth unemployment, when the non-agricultural sectors cannot generate enough jobs to absorb the labor force, which is both young and transitioning from the farming sector. From 2012 to 2022, every year 4.8 million on average people joined the labor force[69], but in 2022, Just about 1/4 of young Indians were jobless, which was worse than in Bangladesh or Indonesia[70]. This means that India needs to create employment opportunities before its demographic dividend turns into liability.

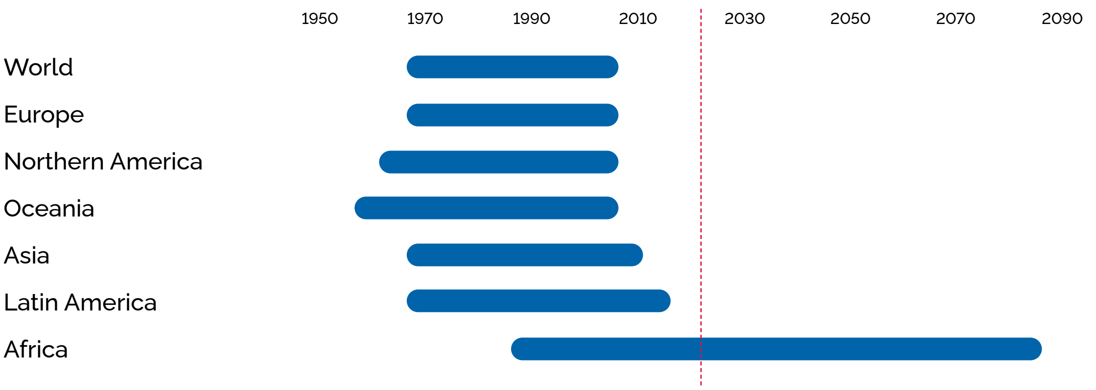
Furthermore, the complex interplay of socio-economic factors has added layers of intricacy[71] to the demographic dynamics in Latin American countries with their 662 million people. The region's struggle to translate its demographic potential into economic gains can be linked to historical challenges such as political instability, prevalence of shadow economies, limited openness to the global economy in 1970–1990s[72], inadequate social infrastructure, and disparities in access to education and healthcare. When the population of Latin America was young and rapidly growing, the countries did not use this advantage to industrialize their economies as skillfully as their Asian peers.

Now, population growth in the region is already decelerating, projected to peak at 752 million by 2056[73]. Fertility rates are dwindling from 5.8 children per woman in the 1980s to 1.9 in 2021[74] thanks to the improvements in healthcare access and decreasing mortality rates. The process of aging is inexorable, with the average median age being 31, and the proportion of people aged over 60 reaching 13% in 2022[75]. The high emigration rates from countries like Brazil and Argentina[76], while reflective of a globalized world, also pose a substantial challenge. The loss of skilled labor and talent exacerbates the difficulties associated with addressing poverty and inequality. These countries are grappling not only with the consequences of a diminishing labor force but also with the strain on social welfare systems as an increasing proportion of the population ages.

The opportunity to use the first demographic dividend is gone for Chile and Costa Rica[77]. On the positive side, nations like Paraguay, Bolivia, and Guatemala are still within the window of demographic opportunity, and they have the potential to learn from the experiences of their counterparts. Strategic investments in education, healthcare, and infrastructure, coupled with policies that foster innovation and entrepreneurship, could position these countries to harness the demographic dividend more effectively.

As Latin America navigates this intricate demographic landscape, policymakers face the delicate task of balancing short-term challenges with long-term goals. Tapping into the potential of a youthful population requires not only addressing immediate socio-economic issues but also implementing forward-looking policies that promote sustainable development and resilience in the face of global uncertainties. The coming decades will be critical for shaping the trajectory of Latin America's socio-economic landscape, and proactive, well-informed decisions will be essential for unlocking the region's full potential.

Figure 2.22 Extension of demographic dividend



Sources: IDB, UN

Note: The bars depict the period in which the total dependency ratio is declining[78].

Africa by 2050 will account for a quarter of the world population, and by the year 2100, every 2 out of 5 people will be African[79]. The continent's hidden treasure lies in its youth. In 2021, the average median age in Africa reached 18.6 years, and by 2030, 42% of the global youth will come from the African continent. In the world's youngest country, Niger, the median age is 14.8 years[80].

Africa has only just started its demographic transition, and to unlock its potential, such young and emerging African countries as Ethiopia, Nigeria, Tanzania, Uganda, and others need to address labor market mismatches[81]. In Sub-Saharan Africa, 11.9 million people on average entered the labor market every year from 2012 to 2022[82], while said market expanded by only 3.7 million positions[83].

On top of that, the continent is on the verge of an insidious malaise—premature deindustrialization—where economies are stagnant after transitioning directly from agrarian to service-based economies without passing through the industrialization phase.

“ In Sub-Saharan Africa, 11.9 million people on average entered the labor market every year from 2012 to 202282, while said market expanded by only 3.7 million positions.

African nations find themselves either trapped in the cycle of exporting agrarian products and making a direct shift from agrarian to service-based economies, as exemplified by Ghana, or are heavily reliant on commodities exports, as observed in Botswana. This leaves them exposed to the volatilities of global market prices, hindering the development of other industries that could be less susceptible to such fluctuations. Even South Africa, acknowledged as the most industrialized economy in the Sub-Saharan region, is not immune to the perils of premature deindustrialization. The nation's dependence on mining and heavy manufacturing, while contributing significantly to the economy, exposes it to the risks associated with global commodity price fluctuations. The undiversified industrial base in South Africa further perpetuates historical inequalities, limiting opportunities for certain segments of the population to benefit from more productive sectors of the economy. This, in turn, sustains high unemployment rates, exacerbates skills shortages, and widens wage disparities.

Premature deindustrialization is bad because it traps countries in a low-productivity, low-growth trap. The tertiary sector, which is dominated by services such as retail and tourism, is typically less productive[84] than the industrial sector, as it lacks economies of scale, automation opportunities and high-skilled jobs. Additionally, the tertiary sector is often dominated by traditional services that are difficult to export, which limits countries' abilities to be globally competitive. Finally, the tertiary sector is more vulnerable to shocks, such as economic recessions and natural disasters.

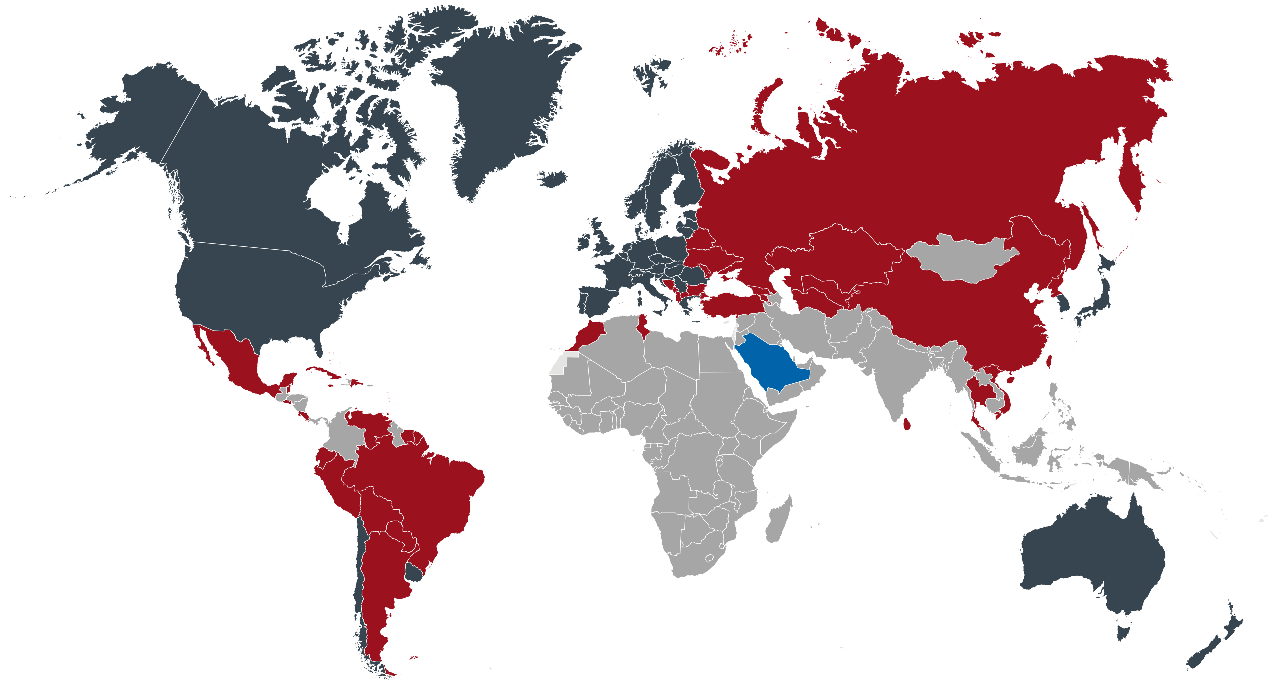
Premature deindustrialization in Africa comes at sharp contrast with export-promoting industrialization paths adopted by East Asian economies that enabled their industries to expand worldwide[85]. Thus, the key to African growth is structural transition from agriculture, now constituting 49% of the region's overall employment, towards increased labor productivity and the cultivation of emerging industries.

Old Before Rich vs. Rich Before Old

As countries like India, Nigeria, Pakistan, and Indonesia approach the peak of demographic momentum, the looming risk of aging before achieving prosperity calls for a focus on boosting productivity and establishing social welfare systems.

For some developing countries, getting rich yet old will remain a pipe dream. While the notion of establishing a prosperous retirement stratum akin to that of Japan or Western Europe may be alluring, a number of nations are facing an aging society long before their elderly have accrued ample resources.

Figure 2.23 World map by economic demography category



Source: South African Institute of International Affairs[86].

Globally, improved access to medicine and technology has bolstered life expectancy, while fertility rates are declining. This phenomenon propels an acceleration in demographic shifts. In stark contrast to the US, whose transition to an aging society took 69 years, France (115 years), Australia (73), Philippines (35), Japan (24), and such countries as Malaysia, Thailand, Singapore are aging rapidly[87].

In Thailand, the speed of aging (measured by the time it took for the population aged over 65 to increase from 7 to 14 percent) amounted to a mere 7 years [88]. By 2029, the kingdom will become a superaging society where more than 20% of the population are older than 65[89]. However, in contrast to Japan and South Korea, which faced this challenge after economic breakthroughs, Thailand finds itself at a different juncture[90]. Approximately 34% of Thai seniors live below the poverty line, and over 41% of them possess savings totaling less than ~1400 US dollars[91], which makes the Thai economy ill-prepared for the future demand in infrastructure and welfare, not to mention labor force.

> “ In Thailand, the speed of aging (measured by the time it took for the population aged over 65 to increase from 7 to 14 percent) amounted to a mere 7 years.

Aging in China is also faster compared to Western developed countries. In just 6 years, the share of people aged 65 and above has risen from 10% to 14%, placing a growing burden on the working-age population[92].

China enjoyed the demographic dividend in 1980–2010s, preparing to face the aging society challenge. The policy response included promoting industrialization and migration of rural population, developing a comprehensive healthcare and welfare system, and transforming the education system. Such efforts helped to increase labor productivity of young generations and sustain the benefits of the demographic dividend. Yet, the “one-child policy” sped up population aging and created new unanticipated distortions, such as distorted sex ratio at birth[93]. These imbalances still remain. In 2022, China’s fertility rate reached a record low of 1.09, which is below

Japan's rate for the same year[94]. Meanwhile, the monthly youth unemployment rate in urban areas reached 21% in May, 2023[95].

Now, China strives to become a higher-income country, despite having an aging population. Since 1990, only four countries have managed to do so: Uruguay, the Czech Republic, the Russian Federation, and Slovakia[96]. Whether China will share Japan's destiny or follow Thailand's aging path depends on the ability of both policymakers and businesses to create new economic opportunities.

Emerging Trends: Demographic Shifts Reshaping Market

The key to economic development lies in the effective combination of the size of the labor force and the efficiency of its usage and allocation in the economy. For both countries with an aging population and those with a young one, the primary tasks include managing the spheres which are inextricably intertwined with productivity: education and social welfare.

Education for All Ages and Regions

The demographic shifts highlight the need for building adequate educational capacities, which are one of the predictors of workforce productivity.

For young countries that seek to tap into their demographic dividends, it is crucial to provide adequate access to and quality education. In India, with its 96% children enrolled in schools, only a half of children in grade 5 could read at a grade-2 level fluently[97]. To address that, "Teaching at the Right Level" initiatives by Pratham, a non-governmental organization, introduced a tailored approach for children aged 6–8[98]. In the same vein, in Africa, where Internet penetration rates have just passed the ~40% margin[99], digital literacy initiatives like the "Smart Classrooms Initiative," "VIVADA C3," "KALAAN," and others are trying to bridge the gap in digital skills and infrastructure for Africans[100].

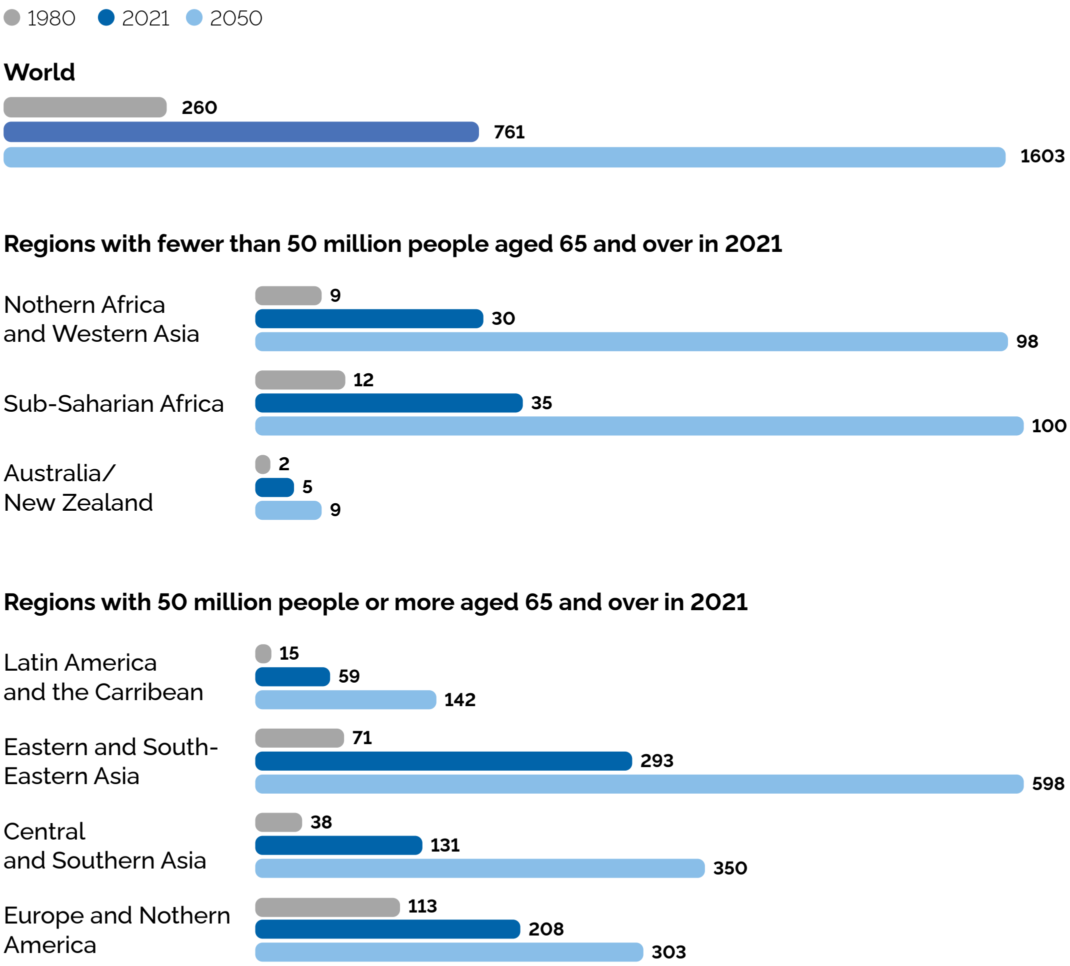
China has a remarkable track record of adapting its educational system to both favorable and unfavorable demographic shifts. While enjoying the demographic dividend, it increased its educational investments to achieve a "youth education effect," which, in turn, leads to "higher-quality growth"[101]. Given the recent population decline, the Chinese government currently puts a premium on improving and expanding vocational training. Moreover, in some provinces, professional institutions are being transformed into universities. According to the guidelines issued in 2021, the share of vocational university enrollment is to be increased to at least 10% by 2025[102].

In both young and aging societies, the solution to the labor productivity and dependency ratio dilemma is lifelong learning. By developing new skills, lifelong education extends the working life of the workforce, thus sustaining pension systems. Lifelong education is gaining prominence, given many industries are becoming redundant and throwing the employees out of the labor market[103]. Indonesia has been recognized as a remarkable example of implementing lifelong education policies[104]. The state Pre-Employment Card program enabled 17 million people to upgrade their skills[105]. Meanwhile, addressing the demographic challenges becomes the agenda of edtech companies. Notably, lifelong learning is one of the fastest growing edtech segments globally, with India's market size alone projected to reach $5 billion[106].

The Silver Lining of an Aging Society

Given profound demographic shifts, the very face of the consumer class is changing. By 2030 it is poised to increase to 5.6 billion people, while the share of elderly consumption will increase by 66% from 459 million to 760 million. The silver economy is poised to transition from OECD nations to burgeoning Asian markets[107]. By 2030, the top 10 biggest silver economies list is expected to include alongside the US and European states such countries as China, Japan, Russia, India, and Brazil[108].

Figure 2.24 Number of people aged 65 years old or above, millions



Source: UN Population Division[109].

By 2025, China is projected to become one of the largest eldercare markets, totaling $800 billion[110]. The senior care model in China is based on a distribution of 90% at home, 7% in intermediate facilities, and 3% in nursing homes, which fuels demand for smart medical devices, home-based nursing, rehabilitation, and telemedicine[111]. To meet demand, China incentivized foreign investment in elderly care in 2022 and allowed establishment of foreign-owned enterprises in 2018[112].

An aging society also entails increasing demand for private health insurance. According to data from 1996 to 2010, approximately 20% of elderly medical expenses in China were funded through personal means, while 13% were covered by private insurance[113]. Between 2014 and 2018, China's commercial health witnessed an annual growth rate of 36%[114].

> According to data from 1996 to 2010, approximately 20% of elderly medical expenses in China were funded through personal means, while 13% were covered by private insurance. Between 2014 and 2018, China's commercial health witnessed an annual growth rate of 36%.

Along with public health, unprecedented growth of elderly populations strains the pension system[115]. China operates a three-pillar pension system: state-run pensions, enterprise annuity, and personal pensions[116]. The state-run pillar is on the brink of deficit: by 2035, the urban worker pension fund is projected to deplete[117]. Today, some provinces have already experienced pension shortfalls: in Heilongjiang the deficit reached ~$5.1 billion[118].

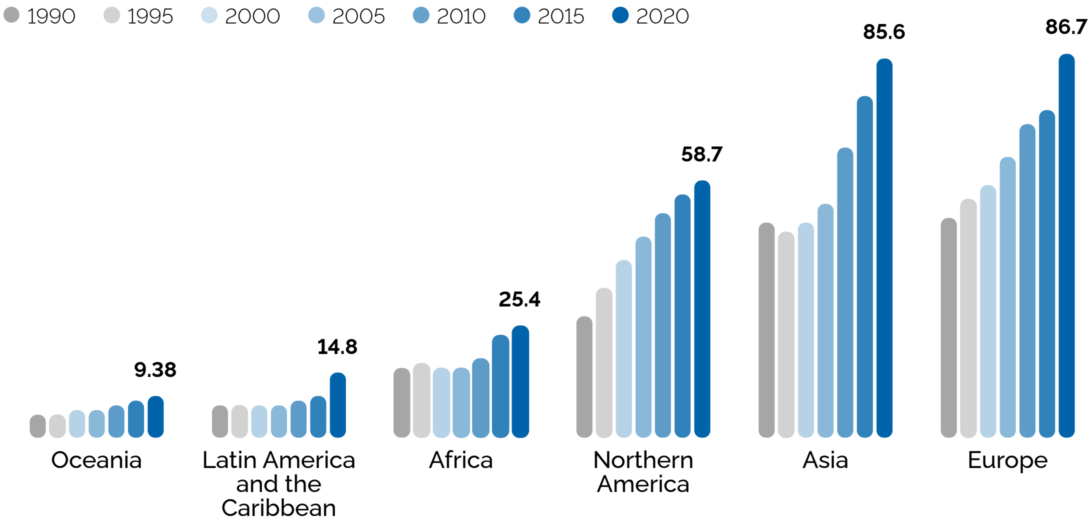
With the public pension system meeting a risk of budget deficits, the stage is set for private pension funds. Even in China, in 2022 the pension funds and banks from a selected list were allowed to offer private pension products—by 2025, the industry is poised to rise to $1.7 trillion[119]. Also, within the framework of the new pension scheme, the Chinese government introduced tax incentives for the private pensions programs' participants, indicating the direction of future private sector engagement in managing the aging population[120].

Migration Policy at a Crossroads

The gradual aging of populations in advanced high-income nations, alongside robust economic growth observed in less affluent countries, has fostered migration. The fusion of these migration dynamics will have far-reaching consequences, significantly reshaping the economic terrain in developing countries. Immigrants in advanced economies boost productivity: a 1% increase in immigrant inflow relative to total employment yields nearly a 1% output increase in 5 years[121].

A 1% increase in immigrant inflow relative to total employment yields nearly a 1% output increase in 5 years.

Figure 2.25 The number of international migrants per region, from 1990 to 2020, millions



Source: World Migration Report 2020, UN[122].

Among all regions, from 2000 to 2020 Asia has outpaced Europe in terms of growth of migrant inflow with 74% and 37 million people[123]. Asia accounted for nearly 40% (~111 million people) of international migrants, with 69 million people coming from other Asian countries.

As Asian countries are becoming more affluent, they strive to lure foreign professionals to address labor shortages. Even Korea and Japan, traditionally reluctant to boost their immigration inflow with a marginal 2% and 4% share of foreign residents, are starting to liberalize their migration policies[124]. Along with them, this race for talents is already joined by Singapore, Malaysia, and others[125].

A possible channel of migration is expanding labor mobility through preferential regimes. For example, in 2006 and 2007, Japan concluded Economic Partnership Agreements with Indonesia and Philippines, which included labor mobility provisions. Such mobility has been a win-win channel of labor migrants for Japan and inflow of remittances for Indonesia and Philippines[126].

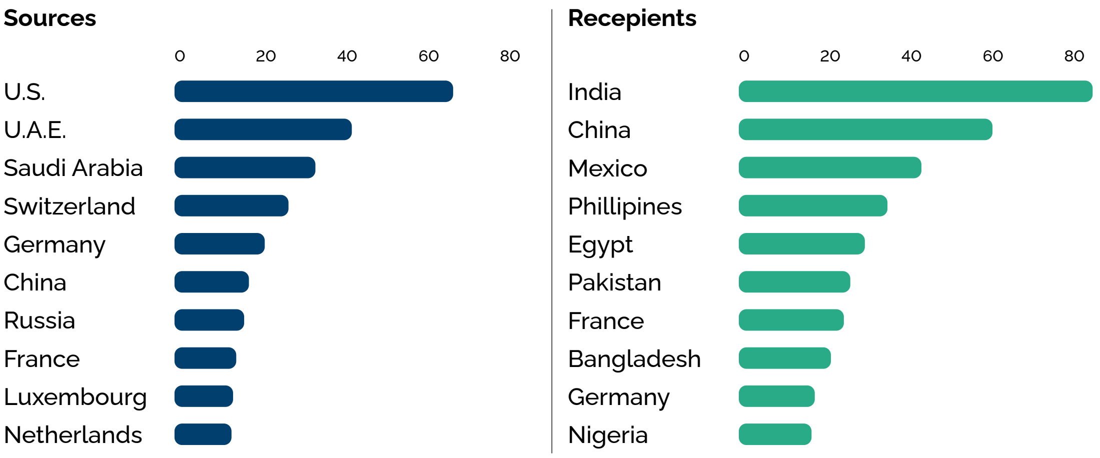
While the economic benefits of migration lie on the surface, there are also less studied effects of it in terms of social and cultural impacts. Migrants face challenges in adapting to the new environments, not to mention occasional cases of discrimination and violence towards them. The recipient countries are also struggling with adjusting to the new reality of having large inflows of foreigners and making timely adjustments to all the public systems.

> As Asian countries are becoming more affluent, they strive to lure foreign professionals to address labor shortages. Even Korea and Japan, traditionally reluctant to boost their immigration inflow with a marginal 2% and 4% share of foreign residents, are starting to liberalize their migration policies.

The Remittances Asset

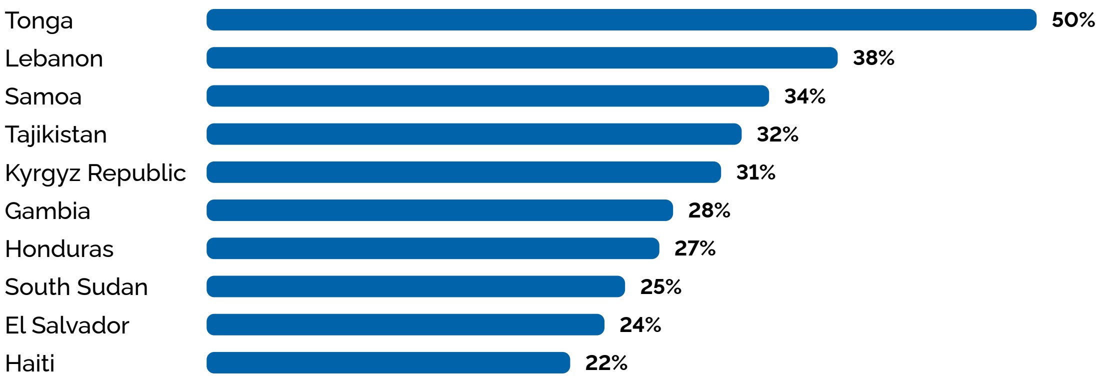
For countries experiencing emigration, remittances are becoming a growing asset. In 2000, migrants sent home more than $126 billion, and in 2022, global remittances totaled $794. The top 5 recipients include countries with large emigration flows: India (~$100 bn), Mexico (~$60 bn), China (~$51 bn), Philippines (~$38 bn), and Egypt (~$32 bn)[127]. Remittances are especially crucial not only for migrant nations, but for countries experiencing political and economic disruption: the share of remittances in GDP is remarkably high in Lebanon (38% of GDP) and Tajikistan (32%)[128]. With China excluded from calculation, migrant money transfers exceed the amount of official development assistance and foreign direct investment, being the largest source of financing for low-income countries[129].

Figure 2.26 Largest remittances' sources and recipients, bln USD, 2020



Source: World Migration Report 2022, UN[130].

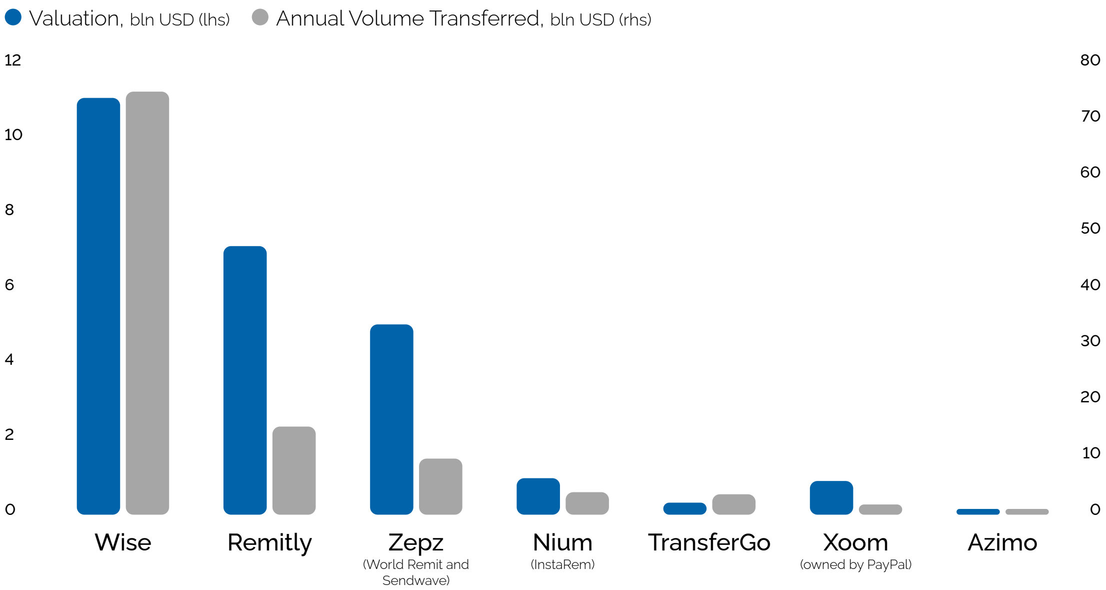
Figure 2.27 Largest remittances' recipients by share of GDP, %, 2022



Source: World Migration Report 2022, UN[131].

The increasing volume of international transfers is driving the demand for cutting-edge solutions to reduce remittances costs. Remtech is gaining momentum in Africa, Southeast and South Asia, Middle East, and Latin America, where such startups like "M-pesa" (a Kenyan mobile-payments platform[132]), "UPI" (an Indian system[133]), and the South African "MTN"[134] are gaining momentum along with the established market leaders[135].

Figure 2.28 Remtech market leaders



Source: Nicias, T. via IMF Blog[136].

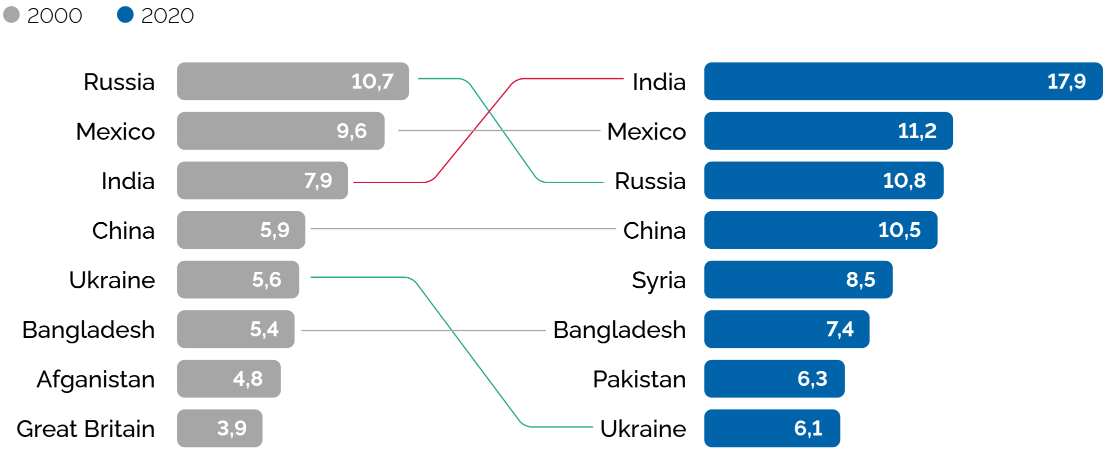
Amid the ongoing national-level discussions regarding the legalization of cryptocurrencies, they have already established themselves as a significant tool for remittances. Due to embedded blockchain technologies, such transfers reduce transaction costs and can be cheaper, faster, more accessible, and decentralized. While the average fee for sending a remittance transfer via traditional banking is ~$45, using such crypto currencies as Bitcoin or Ethereum will cost $1.5 and $0.75 per transaction respectively[137].

Crypto- and blockchain-powered remittances can be the lifeline for underbanked countries like Myanmar. As ~3 million Myanmar people work in Thailand, Singapore FinTech Everex was developed to address their need for secure transactions by partnering with Myanmar Shwe Bank to enable instant Myanmar-Thailand blockchain remittance[138]. Thus, reducing the costs and accessibility of transfers may be a game-changer in case of remittances and will support the demand for crypto-based solutions.

The Economic Force of Migrant Networks: Impact of Diasporas

In some countries, migration is changing the structure of the population: as an example, according to UN data from 2020, 88.1% of UAE total population consisted of immigrants[139]. A more notable shift is coming when migrants sharing ties with the homeland form diasporas that can become influential economic actors both in terms of their sizable population and economic clout.

Figure 2.29 Top countries of origin for international migrants, millions



Source: Statista[140].

Diasporas can build powerful political and economic communities which are engaged in international commercial networks[141]. As an example, India boasts the largest diaspora of more than 18 million people. Indians are the highest-paid migrant group in the US, and 25 chief executives at S&P 500 companies list have Indian roots[142].

Another notable example is the Chinese diaspora in Southeast Asia, the "huaren" or "huaqiao". Building the so-called "bamboo network", ethnic Chinese comprise ~76% of the population of Singapore, ~24% in Malaysia, ~9% in Brunei Darussalam, and ~10% in Thailand[143]. In 2019, 78 out of 109 billionaires in the ASEAN region, who controlled a combined total of $286 billion, were of Chinese descent[144]. The Chinese diaspora has historically been one of primary sources of foreign direct investment in China back in the 1980s, and now its political clout is becoming a full-fledged political factor in the domestic political life of countries like Malaysia.

Diasporas exhibit varying degrees of engagement with their host countries. A brief examination of two prominent examples, namely the Indian and Chinese diasporas in North America, highlights the contrasting levels of integration. The former demonstrates a proclivity towards embracing active participation in the societal fabric of the new home country, while concurrently preserving cultural ties. In contrast, the latter tends to prioritize safeguarding its autonomy. Interestingly, a divergent pattern emerges among similar ethnicities in Southeast Asia, where the Chinese diaspora is more likely to be deeply embedded in the local society, while the Indian diaspora exhibits a tendency towards lesser integration. Consequently, the extent of influence is contingent upon specific cases, exhibiting a nuanced variability.

Hence, diasporas are growing far from the donors of remittances—they are becoming strategic assets for developing counters. And as the global distribution of wealth continues to be dispersed unevenly, migrant flows and diasporas will keep shaping both population and income structure in developed countries.

2.4. Consumer Takes It All: the Consumer Class in Emerging Markets Becomes a Strong Force

In June 2023, the consumer class reached 4 billion individuals globally, and by 2031, it is projected to grow to 5 billion, with about 95% of new consumers coming from developing countries. Asian economies, particularly India and China, are driving this trend with favorable demographics, rapid urbanization, and government policies promoting domestic consumption.

E-commerce plays a crucial role in the growing consumption trend, with over 60% of global internet users residing in developing countries, adopting online shopping at a rapid pace. In many emerging markets, mobile payments and digital wallets have become the preferred mode of transaction. However, rapid technological growth often outpaces regulation, leading to concerns about fraud and scams.

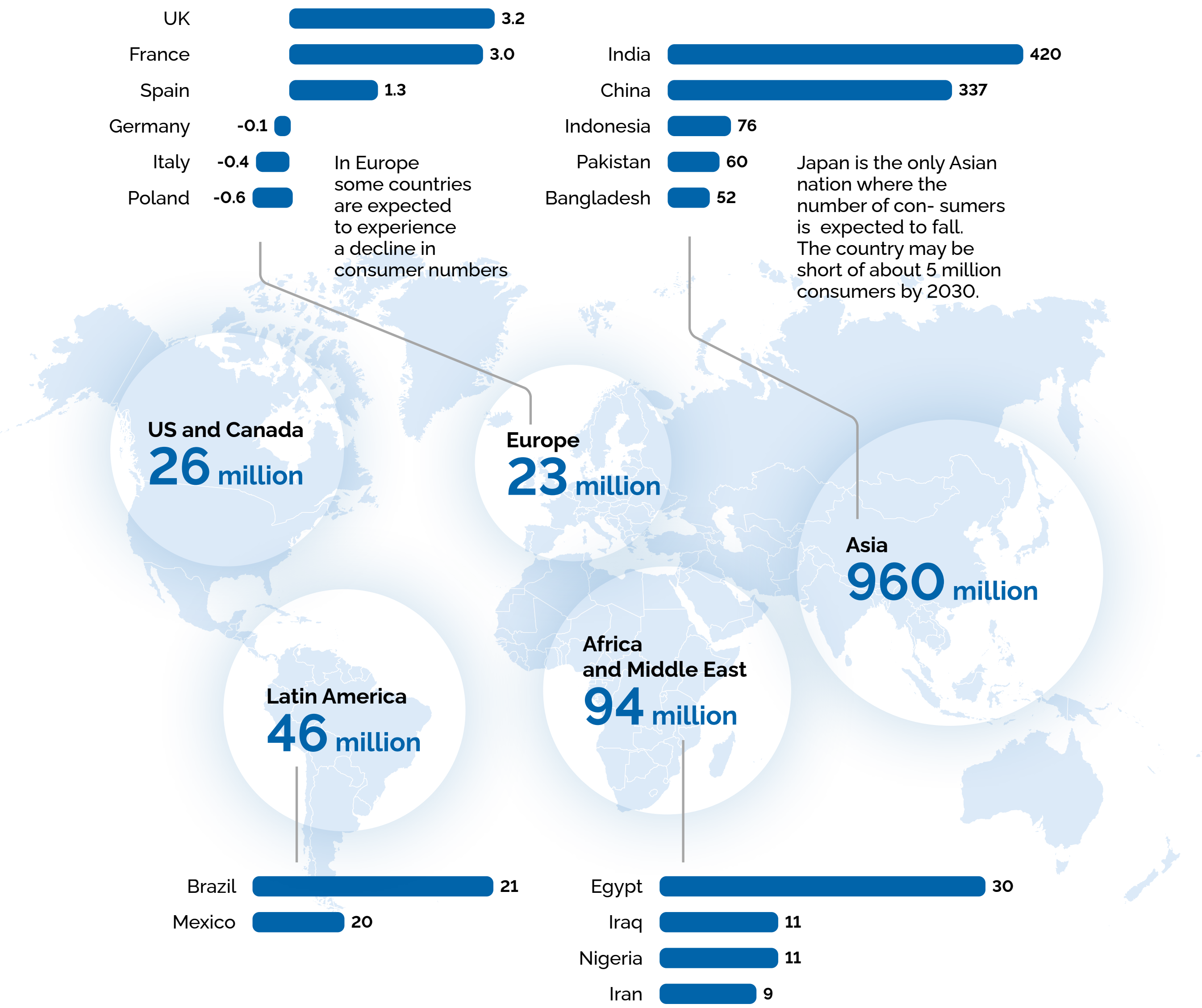
As these economies grow, local businesses have emerged as strong competitors in the market, especially in sectors traditionally dominated by international players. Local brands are gaining recognition and success in their home markets. Finally, the luxury goods market has been significantly impacted by the rising middle class in developing countries, particularly in Asia. China's share in luxury consumption is growing, and other Asian countries, including India, are expected to play a more prominent role in the luxury market.

Emerging Markets are Taking Over

In June 2023, the consumer class[viii] surpassed 4 billion individuals, making it half of the global population. By 2031, this number is projected to swell to 5 billion. About 95% of these new consumers—defined as those who spend more than $12 per day[145]—will be coming from developing countries. Even now, there are four times[146] more households that belong to the middle class in emerging markets than in mature ones.

viii In this publication, we are using the following definitions: individuals spending from $10 to $50 per day belong to the middle class; individuals spending more than $12 a day belong to the consumer class.

Figure 2.30 Number of new consumers, 2020-2030



Source: Brookings[147].

Asian economies are driving this trend. In 2024, out of the 113 million new consumers globally, 33 and 31 million will come[148] from India and China respectively. Other Asian countries contributing over 1 million new consumers are Indonesia, Bangladesh, Vietnam, Philippines, and Thailand.

This exponential growth is driven by not only fundamental economic factors such as favorable demographics, rapid urbanization, and infrastructure development discussed in other sections of the report, but also by purposeful governmental policies.

Export-led or import-substitution economic growth models no longer work when an economy reaches middle-income level and tries to join the rich countries club. At that point, higher reliance on domestic consumption, as well as improvement in the population's quality of life, become key.

For example, in 2020 China adopted the policy of dual circulation, highlighting the transition from a growth model driven by global demand for Chinese exports and infrastructure investment to a model that equally relies on domestic demand. Experts have long predicted[149] that investment-led growth would plateau, but the COVID-19 pandemic along with geopolitical uncertainties sped up this policy transition.

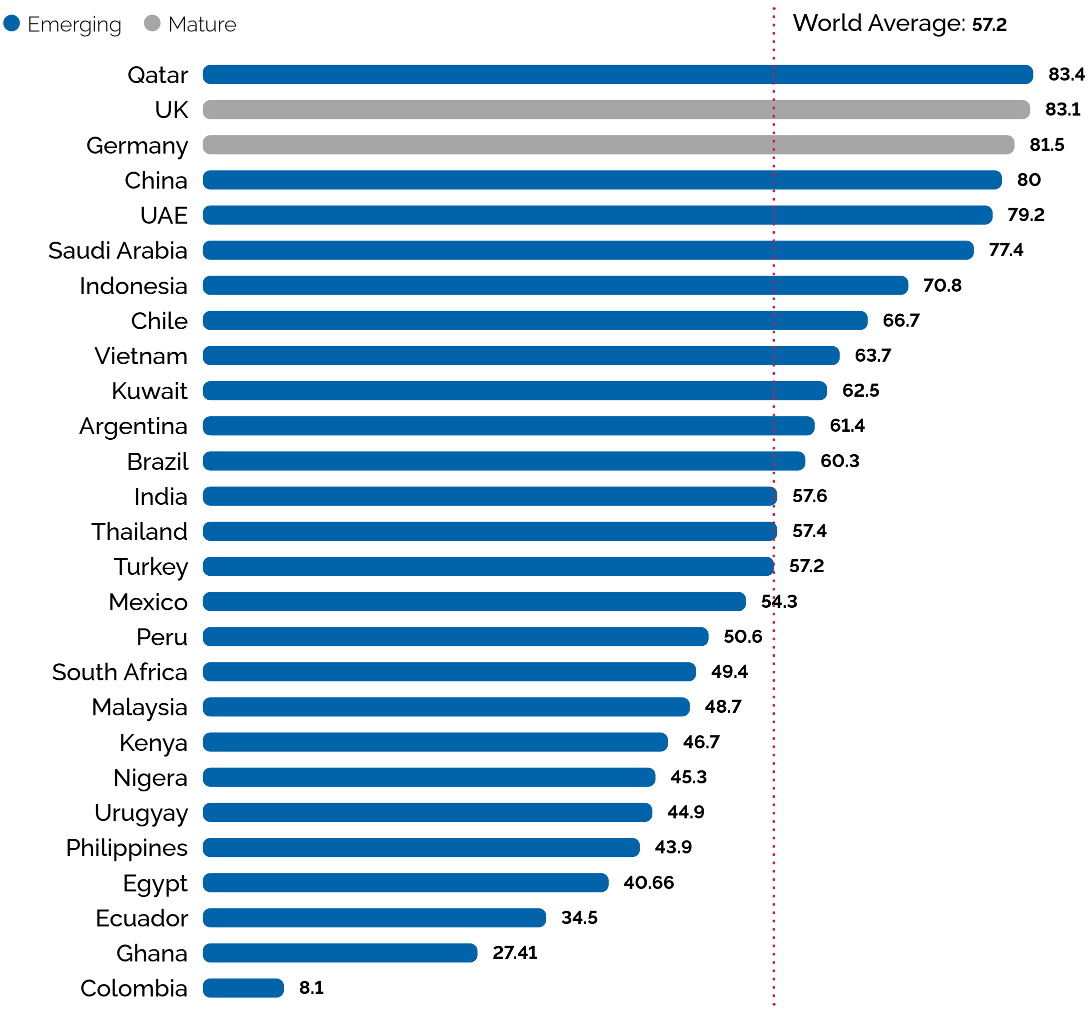
The Spread of E-commerce

In today's global economy, one of the key drivers of domestic consumption in developing countries is e-commerce. Emerging markets are leapfrogging in their adoption of online shopping, coming from almost zero usage 15 years ago to being global leaders today. Thanks to the rapid spread of Internet access and mobile devices, over 60% of global Internet users (about 3 billion people) now reside in developing countries. E-commerce adoption, measured as the percentage of people who recently made an online purchase, had surged past 50% in those markets, not far from the global average[150] of 57.2% . Only a few emerging African nations are still lagging behind, although quickly ramping up with an average annual growth rate exceeding 8%.

What's even more important, developing countries are pushing the envelope in terms of the monetary value. Almost two thirds of the digital sales revenue in 2023 will come from the developing markets ($4 trillion out of $6.3 trillion), driven by the Chinese and other Asian consumers.

> Over 60% of global Internet users (about 3 billion people) now reside in developing countries. E-commerce adoption, measured as the percentage of people who recently made an online purchase, had surged past 50% in those markets, not far from the global average of 57.2%.

Figure 2.31 E-commerce penetration by country



Source: Statista[151].

Vietnam: E-Commerce as a National Priority

A few countries like Vietnam, Egypt, and Singapore implemented comprehensive nation-wide master plans to promote e-commerce. Vietnam in particular stands out with its ambitious objectives, aiming to more than double online sales in 3 years (from $16.2 billion[152] in 2022 to $35 billion by 2025). Another goal is to achieve active participation of 55% of the population in online shopping, with the average annual expenditure of $600 on online goods and services. The program also encompasses various initiatives, such as increasing the share of non-cash payments to 50%, cutting delivery costs, and encouraging greater participation of SMEs in e-commerce activities.

Policies aimed at reaching these targets include:

1. Popularization of E-commerce through Education. By 2025, 50% of higher and vocational education organizations will provide formal training in e-commerce.

2. 4.0 Industrial Revolution. Developing infrastructure and talent in big data analysis, Internet of Things, AI, and machine learning to facilitate e-commerce;

3. Enhanced Management. Fighting against commercial fraud, infringement of intellectual property rights, and unfair competition;

4. Infrastructure Enhancement. Strengthening the infrastructure for goods delivery, improving quality and accessibility of the Internet and introducing auxiliary services to create a more robust digital commerce ecosystem.

These policies are expected to have a positive spillover effect on modernization of the general economic infrastructure, business growth and accessibility of entrepreneurship.

The distinctive feature of e-commerce in emerging countries is its mobile-first, if not mobile-only, nature. Most users in developing economies first experienced the Internet on a mobile screen, and unlike their peers in developed countries, never owned a PC. In 2019, only 36% of households in emerging markets possessed[153] desktop computers, compared to nearly 90% in the developed world. Mobile usage, on the contrary, is more widespread. In Asian economies, 68% of the Internet traffic comes[154] from mobile, in African economies this number is 69%, but in most developed countries, it is less[155] than 50%.

Mobile phones are also changing the trajectory of personal finance in emerging markets. Many of these markets skipped the stage of widespread ownership of bank cards and jumped straight to the adoption of mobile wallets. For example, in Thailand only 32% of transactions are made[156] with bank cards, but already 25% of transactions are done through digital wallets.

Explosive growth of technologies outpaces regulation in emerging markets, creating a lot of risks for consumers. A recent survey found that 91% of Egyptian online shoppers[157] are at risk of becoming victims of fraud, while 26% of Indian organizations reported[158] that they lost over $1 million due to e-commerce scams. Thus, despite the spread and convenience of mobile technologies, consumers in emerging economies still look at mobile payments with caution. Concerns about the risk of online scams and fraudulent transactions made cash-on-delivery (COD) the top choice of consumers in many emerging markets. For instance, COD is preferred by 83%[159] of consumers in India, 66%[160] in Morocco, 57% in Egypt, and 40% in Kenya.

Developing markets also became pioneers in certain consumption trends. Social commerce, where products are sold directly through social media platforms, is a new term coined in China. Leading Chinese social media platforms like Douyin, WeChat, and Xiaohongshu have evolved into central hubs for merchants to collaborate with influencers. These content creators not only promote products through posts but also engage in live broadcasts, showcasing products and locking deals with the viewers in real time. For instance, Chinese bloggers that go by the nickname Rainbow Couple sold[161] items of more than 4 million RMB (around $546 thousand) in just one day of livestreams. As for 2023, there are 150 million such streamers in China, with 6 million of them earning[162] more than 100 thousand RMB (around $13.6 thousand) a month.

Chinese e-commerce platforms like Taobao are keeping up with social media by integrating streaming components and influencers' posts into their interface. This trend has already extended beyond typical e-commerce products, with even unconventional items such as coal[163] and construction equipment being sold via live streams.

The popularity of social commerce stems from both psychological and economic factors. Psychologically, influencer livestreams are more engaging than traditional e-commerce sites, offering direct interaction and product demonstrations. In fact, these livestreams are even more popular than other forms of entertainment, with 60.8% of Chinese respondents favoring[164] social commerce over all other livestream formats[ix]. Economically, livestream merchants often provide lower prices, on-the-spot promotions, and valuable product recommendations, streamlining the shopping experience.

Today, this trend has crossed borders, with global social media platforms incorporating similar features into their services worldwide. However, the market size of social commerce in the US is just $36 billion, compared to a tremendous $360 billion[165] in China.

Africa: Overcoming Business Challenges through Entrepreneurship.

According to data[166] from the Global Entrepreneurship Monitor, African countries tend to have some of the highest entrepreneurship intentions indexes globally. Thus, not surprisingly, the startup and venture capital landscape in Sub-Saharan Africa has been dynamic and promising. The region has seen a growing interest from both local and international investors, contributing to a burgeoning ecosystem of innovative startups.

Several factors have fueled this growth, including a rising middle class, increased mobile penetration, and a youthful population eager to embrace technology. Fintech has been a particularly active sector, with companies addressing financial inclusion challenges through mobile payments, lending, and other innovative solutions.

Key tech hubs, such as Lagos (Nigeria), Nairobi (Kenya), and Cape Town (South Africa) have emerged as hotspots for entrepreneurial activity. Governments and organizations are also playing a role in fostering innovation through supportive policies and initiatives.

Despite these positive trends, challenges persist, including infrastructure limitations, regulatory complexities, and access to funding for early-stage startups. However, the overall trajectory suggests a promising future for the Sub-Saharan African startup ecosystem, with diverse sectors attracting attention and continued efforts to overcome obstacles to growth.

These are the prominent African "unicorns" (with their capitalization):

1. OPay, Nigeria, $2 billion USD:
   A fintech company providing mobile payment services and a consumer platform for transfers, payments, loans, savings accounts, and other services. It has over 18 million users.

2. Chippers, Uganda-Ghana, $2 billion USD:
   A fintech startup facilitating cross-border payments across Africa. Founded in 2018 by two African entrepreneurs from Uganda and Ghana. Operating in Ghana, Uganda, Nigeria, Tanzania, Rwanda, South Africa, and Kenya.

ix In this survey, respondents needed to choose which format they "enjoy watching" and were allowed to choose multiple options.

3. Andela, Nigeria, $1.5 billion USD:
   A global outsourcing platform for software developers in emerging markets. Established in 2014, it started in countries such as Kenya, Ghana, South Africa, Uganda, Rwanda, and Egypt.

4. Flutterwave, Nigeria, $1 billion USD:
   A fintech company founded in 2016, providing payment infrastructure to global sellers and payment service providers across 10 African countries, including Nigeria, Kenya, and Ghana.

5. Interswitch, Nigeria, $1 billion USD:
   A fintech company established in 2002, specializing in digital payments and e-commerce. It has issued 22 million debit and credit cards through its Verve offering. Interswitch operates in Uganda, Kenya, and Nigeria, with plans to expand in two more West African countries.

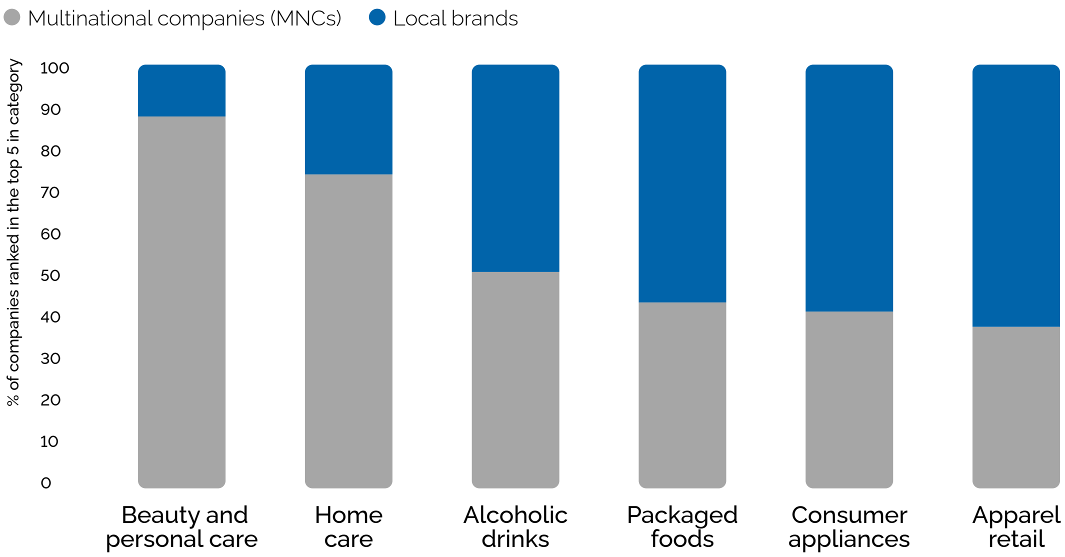
6. Jumia, Nigeria, $1 billion USD:
   An e-commerce company founded in 2012, valued at $1 billion in 2016. Traded on the New York Stock Exchange, it has 6.8 million active customers and 8.1 million orders. Jumia operates in Egypt, Morocco, Ivory Coast, Kenya, South Africa, and other markets, expanding its platforms like Jumia Food, Jumia Travel, Jumia Deals, Jumia One, and Jumia Pay.

7. Fawry, Egypt, $1 billion USD:
   The largest electronic payment platform in Egypt, founded in 2008. It provides payment services to nearly 30 million customers, allowing online and digital payment of bills through ATMs, retail outlets, and digital wallets.

Distinctive Consumer Preferences

As economies grow, local businesses gain access to a larger consumer base and capital pool. This scale allows them to manufacture products of higher quality at competitive prices. Leveraging their deep understanding of local consumer preferences, they excel at appealing to their audiences. Furthermore, they benefit from government support, driven by the goal to reduce dependence on foreign producers. The combination of these factors, along with the surge of consumer patriotism, has given rise to another noteworthy trend in emerging economies: the rising popularity of local brands.

Figure 2.32 Multinationals vs local companies ranked top 5 per category in emerging markets



Source: RBC Global Asset Management[167].

There are numerous local and global success stories of brands from developing countries, even in sectors typically dominated by major international players. For example, consider Li-Ning, a sports-wear brand founded by a Chinese Olympic gymnast in 1989. It has since evolved into a national champion and presently operates stores in both Europe and the Americas. Similarly, the Brazilian flip-flop brand, Havaianas, has gained its name by revolutionizing modern flip-flop designs, selling an impressive 220 million pairs annually.

In the world of electronics, the Vietnamese brand Vingroup JSC is particularly noteworthy. In 2018, the company launched its inaugural smartphone—Vsmart. Being cost-effective, innovative, and homegrown, Vsmart struck a chord with the Vietnamese audience. Vsmart became[168] one of the top three best-selling smartphones in Vietnam, despite the country being[169] a global base for Samsung's smartphone assembly.

In Indonesia, many challenges unique to the large domestic consumer market went unaddressed by multinational companies, which led to emergence of a plethora of local startups, including 14 unicorns (companies with capitalization over 1 billion dollars). Particularly, in the financial sector recent successes include[170] Akulaku, FinAccel, Dana Wallet, and Xendit.

Local FMCG Brands Challenging Global Ones

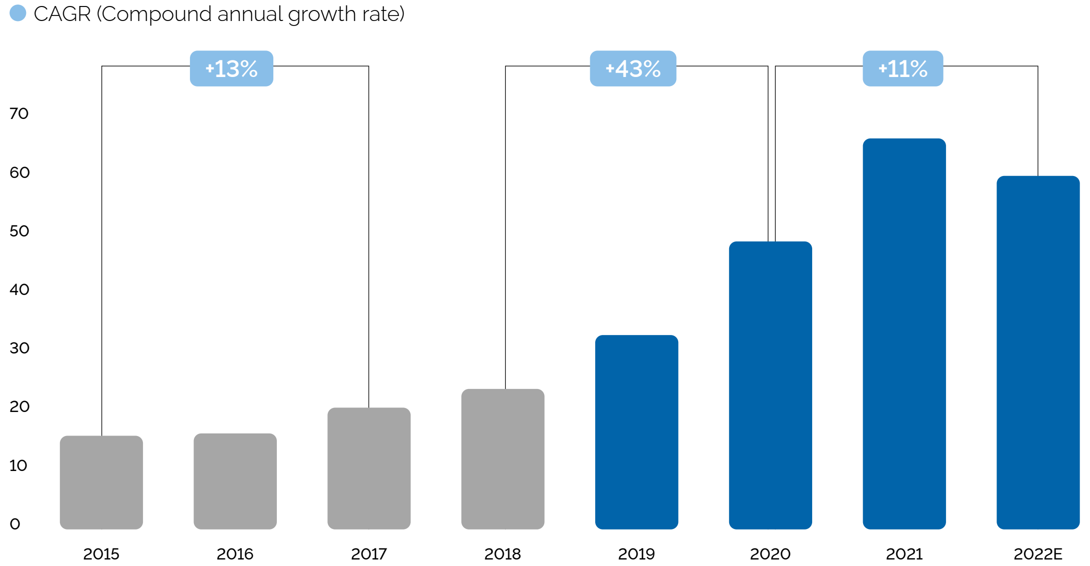
The soft drink industry is typically dominated by global giants like Coca-Cola, PepsiCo, and Unilever. In this context, the story of Thums Up, an Indian brand, truly stands out.

Founded in 1977, Thums Up seized an opportunity when multinational competitors exited the Indian market due to political instability. The brand retained its market share even after PepsiCo and Coca-Cola returned in the early 1990s. Thums Up had much fewer resources at its disposal compared to its competitors, resulting in the brand being sold to the Coca-Cola Company, but it still maintained local positioning and marketing. Thums Up leveraged its understanding of the consumer preferences, emphasizing its drinks' stronger and fizzier taste, a feature akin to spicy foods and robust coffee popular in India. The brand still has 20%[171] of all the cola drinks market share in India.

As consumers in emerging markets become richer, their appetite for luxury goods grows. In 2022, 38% of the personal luxury goods market value originated from Asia[172], outpacing both Europe and the Americas, which stood at 27% and 32% respectively.

China's growing share in luxury goods purchases is especially prominent. The market doubled in size from 2019 to 2021 and is now rapidly rebounding[173] after the 10% fall[174] in 2022. The country's share of global luxury consumption is projected to reach 40% by 2025[175]. International brands have already started responding to the needs of Chinese consumers. For example, the recent emphasis of the Chinese government on reducing social inequality has brought a shift in the market landscape. Many consumers now opt for a subtle expression of luxury over prominent logos, and brands are responding, offering quiet luxury products.

Figure 2.33 Mainland China personal luxury sales, mln USD, 2015–2022



Source: Bain[176].

Other Asian countries are rapidly catching up with China in luxury consumption. These nations are home to an aspirational group of consumers often referred to as HENRYs (High Earners, Not Rich Yet). This stratum is growing even faster than the middle class, and is expected to account for 21% of the region's population by 2030. With HENRYs' help, ASEAN is poised[177] to hold about 11% of the global luxury goods market by 2032. India is also becoming a center of gravity for more luxury brands. The country's luxury market is expected[178] to grow 3.5 times its current size and reach the $200 billion mark by 2030.

Persian Gulf countries remain prominent players, with consumers in the UAE, for example, spending six times more on luxury goods than their Chinese counterparts. However, due to the relatively small population size, their global share is insignificant. Africa, meanwhile, is still in the process of cultivating its middle class, with the luxury market anticipated[179] to experience a modest annual growth rate of 1.32% from 2023 to 2028.

“Other Asian countries are rapidly catching up with China in luxury consumption. These nations are home to an aspirational group of consumers often referred to as HENRYs (High Earners, Not Rich Yet). This stratum is growing even faster than the middle class, and is expected to account for 21% of the region's population by 2030.

In conclusion, emerging markets are poised to take center stage in the global economic landscape. With the consumer class surpassing 4 billion individuals, representing half of the global population, the vast majority of new consumers (about 95%) are expected to emerge from developing countries. Asian economies, particularly India and China, are driving this transformative trend, shifting from export-led growth models to emphasizing domestic consumption. The rapid adoption of e-commerce in these regions, notably mobile-first, is reshaping consumer behaviors and driving significant digital sales revenue, poised to reach $4 trillion out of $6.3 trillion in 2023. The distinctive consumer preferences in emerging economies, marked by a rising affinity for local brands, showcase the deep understanding of local markets by businesses. As emerging markets become richer, there is a growing appetite for luxury goods, with Asia, led by China, expected to hold a substantial share of the global luxury goods market. This shift not only underscores the economic prowess of emerging markets but also highlights the need for global businesses to adapt to evolving consumer landscapes.

2.5. Continental Shifts: The Urbanization of Africa and Asia

> Urbanization is a cornerstone of emerging markets, with 41 of the world's 50 largest urban agglomerations situated in these regions. Asian megacities, mainly situated in India and China, claim the spotlight. They are projected to account for 9.4% of the world's total GDP and 6.6% of the global population by 2025. African megacities are rapidly rising in prominence, marked by a notable demographic growth. By 2035, the west coast of Africa, spanning from the Ivory Coast's Abidjan to Nigerian Lagos, is projected to house 51 million people, a population comparable to the Boston-Washington corridor in the United States.
>
> It should be stated that these cities have become hubs of economic and social activity, fostering a higher quality of life, expanding the consumer class, and providing more favorable labor markets. Additionally, the concentration of economic activities in these urban centers has led to the development of efficient supply chains.
>
> That being said, urbanization also presents its share of challenges, including the strain on infrastructure, traffic congestion, air pollution, and soaring property prices. Furthermore, the vulnerability of many megacities to natural disasters and the potential disruption of global trade during crises pose substantial risks.
>
> Despite these hurdles, urbanization remains essential for sustainable economic growth. Cities with populations exceeding 1.2 million tend to transition into more innovative and service-driven economies, benefiting from the concentration of capital, skilled labor, and consumers. This shift towards a service-oriented economy is underpinned by the fact that the service sector contributes to approximately 70% of the GDP in developed countries.

Among the 50 largest urban agglomerations in the world, 41 are located in emerging markets[180]. Asian megacities dominate the list, and by 2025, they are expected to make up 9.4% of the world's total GDP and 6.6% of the global population[181]. In the coming decades, India and China will maintain their lead, but neighboring countries will contribute to the growing list of megalopolises: Tehran, Ho Chi Minh City, and Baghdad are all expected to overcome the 10 million barrier by 2050[182].

Similarly, Asian megacities will soon be joined by their African counterparts. According to the UN estimates, by the end of the century, Africa will become home to roughly 3.9 billion people, representing 40% of the world's population[183]. The west coast of Africa, especially the stretch of land from the Ivory Coast's Abidjan to Nigerian Lagos, will be at the forefront of demographic records. 51 million people are expected to inhabit this area by 2035, almost the same number as in the Boston-Washington corridor—the largest urbanized zone in the US. Unparalleled population growth in Africa in the last 30 years has already transformed the map of the continent. Since 1990, the number of cities has doubled[184], and the percentage of urban population has grown from a modest 31% to 44%[185]. Kinshasa, Abidjan, and Dakar are now second only to Paris in a bid to be the largest francophone agglomeration in the world.

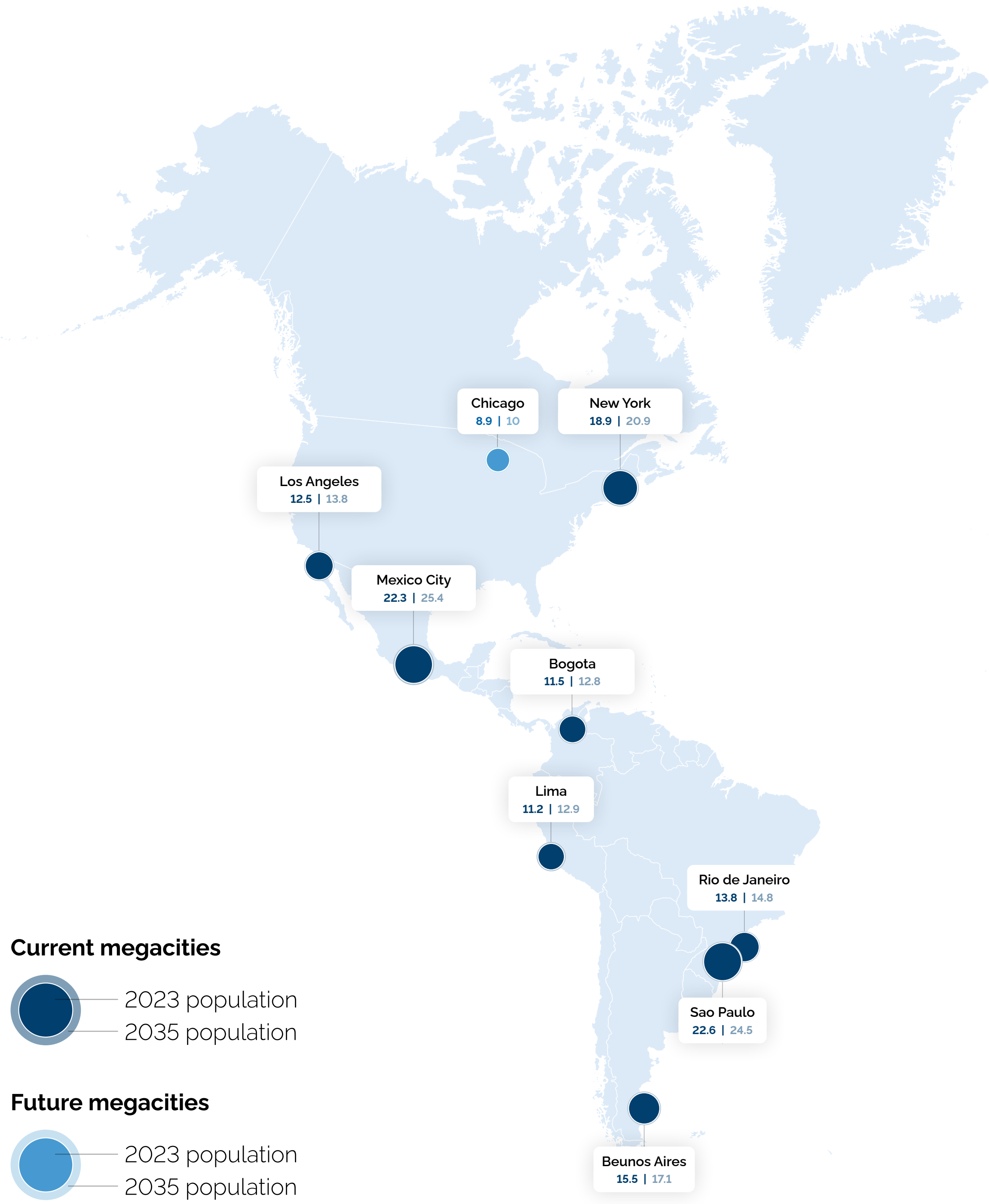
Concrete Dreams: Building Prosperity through Urbanization

While megacities (with populations of over 10 million people) are the most prominent examples of the drastic changes happening in the distribution of the population, the biggest change in absolute numbers is actually driven by megapolises (cities with populations of over 1 million people). By 2050, 68%[186] of the world's population will be living in large urban areas.

Urbanization's economic influence greatly outweighs the sheer number of urban residents. Despite only 56% of the world's population residing in cities, metropolitan areas account for more than 80% of the world's total GDP[187]. Moreover, rapid urbanization in emerging markets leads to significant economic, social, and even political shifts, extending far beyond the numbers seen in GDP statistics and influencing regions well beyond city limits.

Firstly, social infrastructure, typically found only in urban areas within emerging markets, radically improves citizens' quality of life. Higher salaries, quality healthcare, better education, and access to public goods are among the main motivations for urban migration. The average hourly wage in African rural areas is two times lower than in cities[188]. Even air quality in the countryside is often worse than in urban zones: households without access to electricity burn solid fuels for domestic needs, creating hazardous smoke[189]. According to recent studies, 4 million deaths per year globally are related to household air pollution[190].

Figure 2.34 Current and future megacities, 2023 and 2035



Source: UN Population Division

Wuhan 8.7 | 10
Moscow 12.6 | 12.8
Xi'an 8.8 | 10.4
Beijing 21.8 | 25.4
Tianjin 14.2 | 16.4
Chengdu 9.6 | 11.2
London 9.6 | 10.6
Shanghai 29.2 | 34.3
Tehran 9.5 | 10.6
Dhaka 23.2 | 31.2
Istanbul 15.8 | 18
Seoul 9.9 | 10.2
Hyderabad 10.8 | 14.2
Baghdad 7.7 | 10.8
Paris 11.2 | 12.1
Tokyo 37.2 | 36
Ahmedabad 8.6 | 11.2
Osaka 19 | 18.3
Chongqing 17.3 | 20.5
Lahore 14 | 19.1
Nanjing 9.6 | 11.5
Lagos 15.9 | 24.4
Cairo 22.1 | 28.5
Shenzhen 13.1 | 15.2
Guangzhou 14.2 | 16.7
Karachi 17.2 | 23.1
Kinshasa 16.3 | 26.7
Kolkata 15.3 | 22.3
Metro Manila 14.6 | 18.6
Dar es Salaam 7.7 | 13.4
Mumbai 21.3 | 27.4
Ho Chi Minh 9.3 | 12.2
Bangkok 11.1 | 12.7
Pune 8.1 | 10.8
Luanda 9.2 | 14.5
Surat 8 | 10.8
Jakarta 11.3 | 13.7
Delhi 32.9 | 43.3
Chennai 11.8 | 15.4
Bangalore 13.6 | 18.1

Prominent Megapolises

City, country	São Paulo, Brazil
Population (2024 or latest available)	22.6 million[191]
Population (projected by 2030)	23.8 million[192]
City's contribution to the country's overall GDP (%)	10.3% GDP[193]
Current city profile with its up to 3 distinctive features	São Paulo, the largest monocentric agglomeration in Latin America, is a key driver of Brazil's economic landscape, hosting the headquarters of major Brazilian companies and contributing significantly to the nation's economic vitality. Recognized as a global startup hub, the city ranks 17th globally in the 2023 Global Startup Ecosystem Index[194], showcasing its vibrant entrepreneurial scene and representing 46% of Brazil's startups[195].
Future outlook, e.g., key objectives from the latest city's development plan/smart city strategy (i.e., what the city aspires to be)	São Paulo, known as the "Office city," is prioritizing the strategic restructuring of residential and business areas, aiming to bring jobs closer to its residents, fostering a more accessible and integrated urban environment. Additionally, the city is actively boosting its business potential by hosting events, creating dedicated business corridors, supporting creative and high-tech industries, and investing in education to elevate the skillset and efficiency of the available labor force[196].
Any additional information you wish to highlight/share about the city	São Paulo is marked by socio-economic disparities with a 19%[197] poverty rate and a high Gini coefficient of 0.534%[198]. Nevertheless, the city stands out globally as a fintech hub, ranking as the 4th largest in the world[199] and showcasing its resilience and innovation in the face of economic challenges.

City, country	Istanbul, Turkey
Population (2024 or latest available)	15.85 million[200]
Population (projected by 2030)	17.12 million[201]
City's contribution to the country's overall GDP (%)	30.1%[202]
Current city profile with its up to 3 distinctive features	Istanbul, Turkey's largest city, is home to about 38% of Turkish industries and is responsible for 40% of the nation's tax revenue[203]. Despite its economic success and cultural diversity, Istanbul grapples with urban challenges, such as traffic congestion, administrative overlap, and unequal distribution of essential public services, stemming from a transformation driven by neoliberal economic models since the 1990s[204]. This shift has led to suburbanization and exclusion, reflecting the complex interplay between economic forces and the need for sustainable development.
Future outlook, e.g., key objectives from the latest city's development plan/smart city strategy (i.e., what the city aspires to be)	Istanbul is proactively addressing urban challenges through comprehensive initiatives, emphasizing transportation, environmental management, and sustainability. Notably, the city aims to transform into a logistics center supporting the circular economy by 2050, underlining its commitment to fostering economic resilience. Istanbul is also strategically positioning itself as a global city, facilitating spatial transformation to cater to future job opportunities for the youth, showcasing creativity, innovativeness, and technology hubs as integral components of its urban vision.[205]
Any additional information you wish to highlight/share about the city	Istanbul faces a significant earthquake risk, with a 64% likelihood of a magnitude 7 tremor before 2030[206], posing potential threats to the city's economic resilience. Past earthquakes have demonstrated substantial negative impacts on GDP, wealth, income, and physical capital, emphasizing the urgent need for increased preparedness and recovery measures to safeguard Istanbul's future outlook[207].

City, country	Bangalore, India
Population (2024 or latest available)	21.31 million[208]
Population (projected by 2030)	16.2 million[209]
City's contribution to the country's overall GDP (%)	3.25%
Current city profile with its up to 3 distinctive features	Bangalore, often termed the "Silicon Valley of India," is the second-fastest-growing metropolis in India with a robust 7-10% economic expansion annually[210]. Renowned as a technological powerhouse, Bangalore is responsible for an impressive 38% of the country's total IT exports[211]. However, amidst its economic success, the city grapples with challenges linked to rapid urbanization, including traffic congestion, environmental issues[212], and social inequalities[213], reflecting the intricate balance between economic prowess and urban development challenges.
Future outlook, e.g., key objectives from the latest city's development plan/smart city strategy (i.e., what the city aspires to be)	Bangalore's development prioritizes comprehensive mobility, environmental conservation, and urban amenities to address current challenges. The proposed transformation plan emphasizes attracting IT giants with favorable incentives, implementing megaprojects, and stringent ecological measures, aiming to position Bangalore as a sustainable, culturally rich, and people-centric metropolis.
Any additional information you wish to highlight/share about the city	Bangalore is projected to achieve the highest global GDP growth rate by 2035, showcasing its potential for sustained prosperity[214].

City, country	Mumbai, India
Population (2024 or latest available)	21.29 million[215]
Population (projected by 2030)	24.57 million[216]
City's contribution to the country's overall GDP (%)	9.2%[217]
Current city profile with its up to 3 distinctive features	Mumbai, India's largest urban economy, serves as the nation's financial hub, hosting major stock exchanges and headquarters of key financial institutions. Boasting a per capita GDP (PPP) of $23,000, double the national average[218], Mumbai contributes 25% to Indian industrial output[219] and 60% of its maritime trade[220]. The city also dominates the Indian skyline, having over 250 skyscrapers under development[221]. Despite economic strengths, Mumbai faces challenges of rapid urbanization, including underemployment, slums, and pressure on resources. These issues have led to a major population shift, with central Mumbai losing 140,000 residents and suburban areas gaining 13.2 million from 1981[222].
Future outlook, e.g., key objectives from the latest city's development plan/smart city strategy (i.e., what the city aspires to be)	Mumbai envisions transforming into a smart city, particularly through the use of the Internet of Things (IoT) technologies. The strategic vision emphasizes e-governance and ICT for transparent civic administration, while addressing challenges through innovative solutions such as public-private partnerships. Mumbai aspires to emerge as a modern, sustainable, and citizen-friendly urban center, prioritizing public spaces, health, safety, education, and environmental sustainability[223].
Any additional information you wish to highlight/share about the city	The city faces a significant threat of submersion by rising water levels due to climate change, with an estimated population of 30 million by 2050[224].

City, country	Kinshasa, The Democratic Republic of the Congo
Population (2024 or latest available)	16.3 million[225]
Population (projected by 2030)	21.9 million[226]
City's contribution to the country's overall GDP (%)	85%[227]
Current city profile with its up to 3 distinctive features	Kinshasa, Africa's largest city, is a crucial economic and cultural hub, with trade, telecommunications, and transport being the main industries[228]. However, the city faces significant challenges, including widespread poverty, poorly planned urbanization, notorious traffic congestion, and a staggering 75% of the population residing in slums[229], impacting mobility and overall quality of life.
Future outlook, e.g., key objectives from the latest city's development plan/smart city strategy (i.e., what the city aspires to be)	Kinshasa is allocating a $500 million investment to address its urban development issues. Focused on improving infrastructure, services, and socio-economic opportunities, the project aims to benefit 2 million people in four neighborhoods by providing water connections, reducing flooding, and creating green urban spaces. With a strong emphasis on sustainability, the project includes low-maintenance solutions, resilient urban infrastructure, and socioeconomic empowerment initiatives to build a more inclusive and resilient future for the city's nearly 15 million residents[230].
Any additional information you wish to highlight/share about the city	Kinshasa is not only an economic powerhouse, but also a vital cultural hub. From the internationally acclaimed Congolese rumba to events like the annual Kinshasa Fashion Week[231], the city pulsates with artistic vibrancy. It embraces its cultural heritage and demonstrates resilience amid complex urban dynamics. Beyond its historical landmarks, Kinshasa's lively street life, bustling markets, and diverse culinary scene contribute to its status as the beating heart of Congo's identity.

City, country	Cape Town, South Africa
Population (2024 or latest available)	4.9 million[232]
Population (projected by 2030)	5.5 million[233]
City's contribution to the country's overall GDP (%)	9.8%[234]
Current city profile with its up to 3 distinctive features	Cape Town, a vital economic hub in South Africa, hosts major corporations and is a global startup leader with a $1.2 billion ecosystem, ranking first in Regional Ecosystem Knowledge[235]. With an annual allocation of approximately ZAR 8.4 billion for infrastructure, the city emphasizes transport solutions[236]. Over 800 km of fiber-optic cables provide internet access to over 1 million people through 400 free Wi-Fi zones, enhancing connectivity[237]. Challenges include urban sprawl, exacerbating spatial inequalities, and population pressure straining resources, emphasizing the need for sustainable urban development strategies.
Future outlook, e.g., key objectives from the latest city's development plan/smart city strategy (i.e., what the city aspires to be)	Cape Town aims to transform into a highly skilled, innovative, and resource-efficient society. The plan includes improving "hard infrastructure," introducing business-friendly tax breaks, engaging advanced city management for marketing, and addressing health disparities through increased education and contraception access. The vision also aspires to position Cape Town as a global meeting place and achieve top rankings in indices such as the Nature Index and Sustainable Happiness Index[238].
Any additional information you wish to highlight/share about the city	Cape Town, an English-speaking and multinational city, boasts a developed agricultural sector encompassing animal husbandry, plant breeding, and wine production. Known for mineral mining, including gold and diamonds, it stands as Africa's maritime hub between the Atlantic and Indian Oceans, recognized for its safety and hosting prestigious events like the most beautiful marathon in the world[239].

City, country	Tehran, Iran
Population (2024 or latest available)	9.5 million[240]
Population (projected by 2030)	10.2 million[241]
City's contribution to the country's overall GDP (%)	21.7%[242]
Current city profile with its up to 3 distinctive features	Tehran, marked by an aging population and a high proportion of unemployed individuals with higher education, faces multifaceted environmental challenges. From severe air pollution to critical water shortages, fast ground subsidence, and haphazard urban expansion, the city's infrastructure strains under the weight of unplanned development. Additionally, Tehran's inadequate transportation system, now accommodating over 5 million vehicles[243], exacerbates congestion, reflecting the city's struggle to sustainably manage its growth and address pressing societal and environmental issues.
Future outlook, e.g., key objectives from the latest city's development plan/smart city strategy (i.e., what the city aspires to be)	Tehran's development vision includes achieving cultural prominence, enhancing the knowledge-based economy, and improving quality of life[244], as well as prioritizing transparency, citizen satisfaction, sustainable urban development, partnerships, digital transformation, and urban innovation[245]. These initiatives highlight Tehran's commitment to holistic and forward-thinking approaches, emphasizing both cultural and technological advancements for the city's future.
Any additional information you wish to highlight/share about the city	Tehran's environmental issues cause severe damage to its residents' health. Human health effects alone are estimated to lead to monetary losses of $2.6 billion per year[246].

The case studies were generously provided by the SKOLKOVO MBA candidates of the Class of 2025 (MBA-16). The report team would like to express sincere gratitude for the exceptional contributions of all participants, as well as for the inspiring and insightful debates that took place at SKOLKOVO from November 9 to 12, 2023.

Secondly, urbanization brings about the growth of the consumer class and of internal demand for goods and services. Megacities rely heavily on substantial quantities of electricity, water, food, and other essential goods for survival. As a result, industrialized cities stimulate rural areas by creating demand for natural resources and farm products[247]. Additionally, people tend to spend more money within the metropolitan areas: higher income, status demonstration, and availability of goods strongly affect the level of consumption[248]. Since 2010, consumer expenditure in rapidly urbanizing Africa has grown at a compounded annual rate of 3.9%[249], consistently outpacing the global average[250]. Under these circumstances, businesses rising to meet demand is inevitable. For instance, the rapid growth of telecom business in Africa can be viewed as a direct consequence of urbanization. Economic growth and population density in big cities make mobile services more available for citizens. All three major giants of the African telecom industry (Orange Egypt, Safaricom, and MTN) were founded less than 30 years ago but already have 412 million mobile subscribers—more than the population of the US and Canada combined[251]. Most of their customers are located in countries with the highest urbanization rates on the continent[252].

“ Economic growth and population density in big cities make mobile services more available for citizens. All three major giants of the African telecom industry (Orange Egypt, Safaricom, and MTN) were founded less than 30 years ago but already have 412 million mobile subscribers—more than the population of the US and Canada combined.

Thirdly, high population density and improving living standards enhance the quality of the labor market. Educational opportunities, quality healthcare, reduced commute time, and increased competition among workers make the labor force in cities extremely attractive for businesses. This variable is significant for developing countries, since many aim to transform their economic structure. Some emerging markets, especially in Africa, are still overly dependent on the agricultural sector. In some cases, this accounts for more than 25% of GDP[253]. This reliance makes them highly vulnerable to climate crises and raises opportunity costs since the added value of farm products is much smaller than in other segments of the economy[254]. The better-educated and geographically concentrated labor force in cities contributes to the emergence of new industries and export items[255]. The booming fintech industry in Africa is one example of this: Lagos, the largest megacity in Nigeria, recently became a residence for Flutterwave, Interswitch, and Opay, fintech unicorns whose combined market value exceeds $1 billion[256].

Fourthly, advanced supply chains between and within big cities are more convenient for trade than branched logistics of rural areas. A high concentration of labor force, production, and customers lower the potential cost of transportation: in the USA, significant declines in logistical expenses coincided with the growth of urban agglomerations[257]. In developing countries, one of the critical priorities is establishing new transportation routes to connect major cities. Anticipated projects like the Lagos-Abidjan highway or the Diamond Quadrilateral railway are expected to significantly reduce travel time between major cities on the west coast of Africa and in India, respectively. Some already implemented projects, such as the Indian Golden Quadrilateral railway, were recouped in less than two years, raising the manufacturing sector's real income of the whole country by almost 3%[258]. Moreover, most megacities are coastal or located at the crossroads of crucial transport arteries, making them attractive as international trade hubs.

Last but not least, global demand for technological innovation in cities is propelling the evolution of the industrial and technological sector. In 2020, the smart cities market reached $650 billion, projected to soar to $6.1 trillion by 2030[259]. Leading urban centers are crucial drivers of this tech-driven transformation. For example, high-tech sectors constitute approximately 60%[260] of Shenzhen's ("China's Silicon Valley Capital") industrial output. By generating demand for technologies in next-generation connectivity, big data platforms, expertise in artificial intelligence, cloud computing, and the Internet of Things (IoT), "smart cities" goals of urban centers are contributing to the economic growth of emerging markets, as well as making public governance more effective and the lives of the citizens more comfortable.

The Urbanization Puzzle: Addressing Key Challenges

Social and economic benefits brought by megacities come with various side effects. Most notably, the pace of cities' infrastructure development cannot keep up with the inflow of settlers and increase in traffic. One illustrative example is Indian megacities, notably Mumbai. Ranking among the ten most populous cities in the world[261], it has faced numerous challenges related to infrastructure, particularly to its public transportation system. As a result, daily commutes are marked by congestion, delays, and discomfort for residents. On average, workers in Mumbai waste 55% of their commuting time stuck in traffic jams[262]. The absence of affordable and convenient infrastructure also contributes to high levels of inequality. Approximately 41% of Mumbai's population, which is over 9 million people, reside in slums[263]. Around half of their population lacks water and electricity and are deprived of urbanization's main advantages.

As the number of urban residents grows, these challenges tend to accumulate. That is why attempts to take retaliatory measures are often doomed to fail. In 2015, Jakarta earned the dubious distinction of having the worst traffic in the world[264], with the average citizen spending around 400 hours a year in road congestion[265]. The long-awaited metro, Jakarta Mass Rapid Transit, was opened in 2019. However, travel time within the city only continues to grow[266], and only about 20% of the population regularly use public transport, in contrast to more than 50% in cities like Tokyo, New York, and Seoul[267].

High levels of air pollution and rising health costs are direct results of poor infrastructure. Just the 25 largest megacities alone are responsible for more than half of the world's urban greenhouse gas emissions[268]. The leading cause is the inefficiency of public transport that produces exhaust fumes by itself or due to incentivizing citizens to use personal vehicles. In megacities like Jakarta or Beijing, vehicles are responsible for around 70% of total air contamination[269]. The situation is worsened due to the concentration of commodity and energy production. Deterioration of city residents' health seems to be the price that authorities are willing to pay for economic growth: in developing countries, there is a tendency for pollution to rise in correlation with per capita income[270].

The adoption of environmental restrictions would only partially solve the problem. Although some mature megacities, such as Paris[271], have been successful in reimagining urban planning to be more sustainable and resilient, it remains challenging for the majority of their up-and-coming peers[272]. Starting from 1972, African countries signed over 1,100 environmental agreements, but, according to UN estimates, most were poorly enforced[273].

Resource constraints, weak public administration, and ubiquitous informal markets are the main reasons for noncompliance. Moreover, as illustrated by a recent case in Lagos, enforcing environmental rules can have a devastating effect on the local economy. The city is known for its bustling markets, which play a crucial role in the Lagos economy, offering citizens everything from food to electronics. At least five big markets were closed due to the strict enforcement of the state's environmental law of 2017, putting the lives of its citizens in jeopardy[274].

Megacities are also highly vulnerable to inflated property prices[275]. Due to rapid urbanization, the growing demand for real estate in big cities is often not matched by supply. The potential problem with that is at least two-fold.

First, it has a detrimental effect on the quality of life of its citizens. When real estate in a prime location is too expensive to buy or rent, people with a median or lower income are forced to live far away from city centers. Add to this often-inefficient public transportation, and you have citizens forced to either take lower paying jobs near their place of residence or to spend enormous amounts of time commuting. For instance, in Mumbai, which has shown the sixth-highest year-on-year increase in prime real estate prices[276], citizens waste 11 days a year in traffic[277].

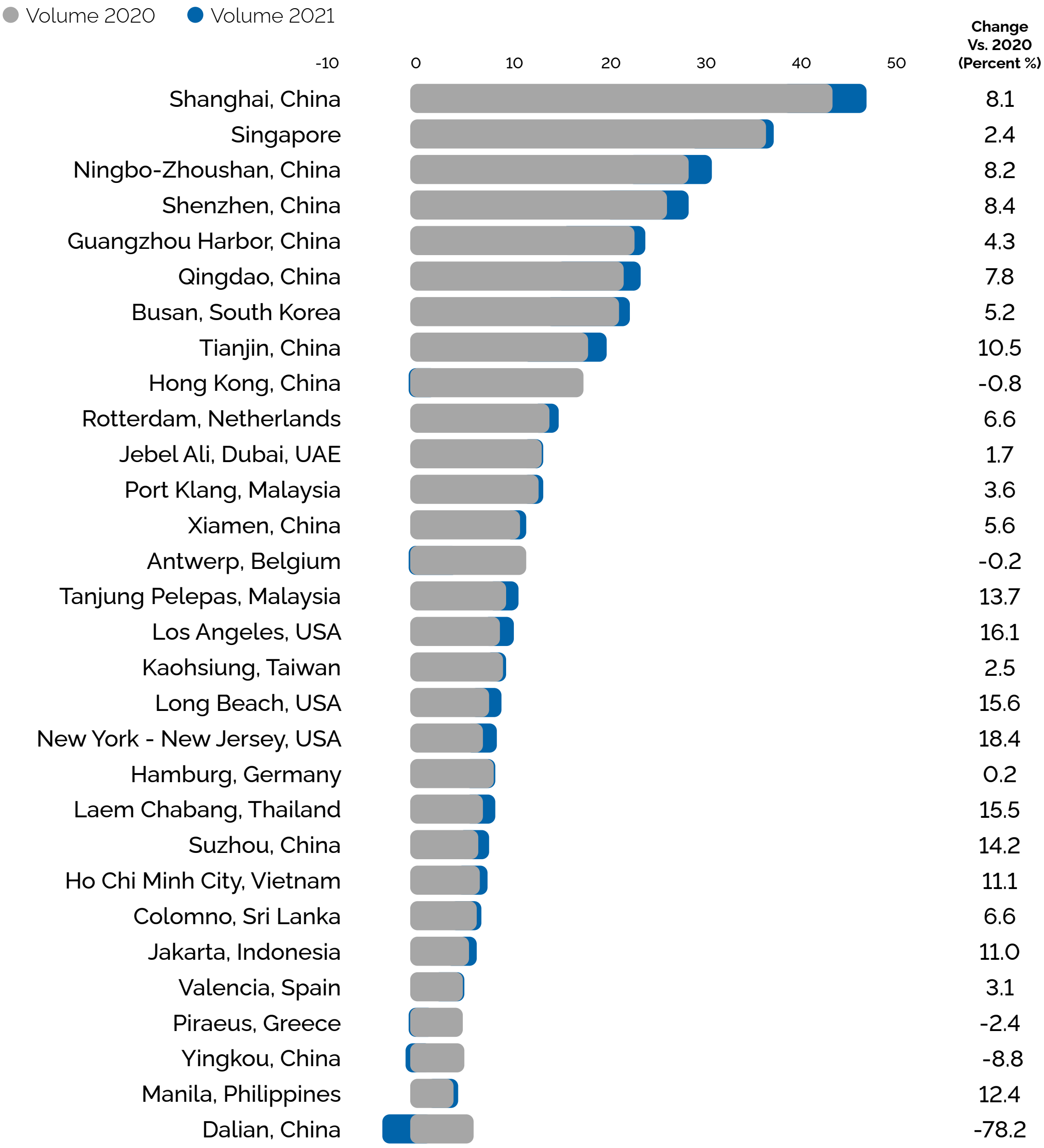
Second, it leads to the emergence of financial bubbles in the real estate sector that, if burst, could infect the whole economy. As property prices rise, many people choose to invest in property. If authorities fail to put prudential policies in place, the non-performing loans pile up, putting the financial sector at risk. When the real estate "bubble" bursts, in the best-case scenario it negatively affects the economic growth of the particular city due temporary reduction in economic activities. However, the IMF suggests that instability in even one of the megapolises could rapidly spread to peer cities, given the interconnectedness among them[278].

The geographic location of megacities poses a challenge in itself. Many, if not the majority, are situated in areas susceptible to various natural hazards. For instance, Los Angeles, Tokyo, and Mexico City face earthquake risks[279], while Manila, Mumbai, Shanghai, and Calcutta are exposed to the dangers of floods and cyclones. Given the high populations of these areas, the potential cost of these catastrophes could be enormous.

The density of settlement can also play a fatal role during a health crisis. This problem is particularly acute in developing countries: Dhaka, the capital of Bangladesh, has a staggering population density of more than 30,000 people per square km, almost six times more than Tokyo[280].This environment fosters incidental human-to-human interactions, which, while essential for urban life, can heighten the potential for virus transmission. During the COVID-19 pandemic, megacities like Delhi, New York, and San Paulo were responsible for a large portion of confirmed cases within their respective countries[281].

The concentration of economic activities in megacities also creates certain risks. Logistical bottlenecks tend to appear in geographical points where the majority of trade routes converge. Over 80% of international trade is done by sea transportation, making large ports the backbone of the global economy[282]. More than 2/3 of the 30 biggest ports are located in emerging markets[283]. During the pandemic, supply chains were disrupted multiple times due to China's zero-Covid policy lockdowns. The disruption of port operations in megacities such as Shanghai, Guangzhou, and Hong Kong nearly doubled the time required for global deliveries[284]. The COVID-19 case has shown how a high concentration of trading activity in a few areas makes global trade vulnerable to unpredictable crises and subsequent policy decisions.

Figure 2.35 Top 30 ports by total sea cargo traffic, 2020 and 2021, Million TEU



Source: World Shipping Council[285].

Note: TEU stands for "twenty-foot equivalent unit," a standard measurement unit in the cargo industry.

While it might be tempting to blame megacity authorities for the problems accompanying their growth, these issues are inherent to economic development and simply become more visible in urban settings[286]. Clusters of slums next to luxurious skyscrapers clearly showcase inequality, while poverty in countryside villages is less visible. To a middle-class Brazilian, the favelas of Rio may appear uninhabitable, but in reality, these areas might offer a significant improvement from the dire conditions of rural poverty.

Although the emergence of large cities poses new problems and potential risks, there is no recipe for prolonged economic growth without continuing urbanization. As has been empirically shown in recent studies, when a city crosses the threshold of 1.2 million residents, its economy will likely transform into more innovative and service-driven due to the concentration of capital, a high-skilled labor force, and more consumers[287]. Due to its essential characteristics, such as a low entry barrier and high added value, the service economy contributes to around 70% of a developed country's GDP and can be viewed as the key driver for economic growth in emerging economies[288].

2.6. There is No Infrastructure Without Debt

Emerging markets rely heavily on infrastructure investment, necessitating between 4.5% and 8.2% of their GDP to propel economic growth. These investments are crucial for enhancing productivity, connectivity, and access to education and healthcare. The global infrastructure investment landscape is expected to expand substantially, with projections indicating an influx of $66 trillion from 2021 to 2040, primarily flowing into emerging markets. However, this presents a formidable challenge, as it requires approximately $1.5 trillion annually to bridge the infrastructure funding gap, particularly in regions like Africa, South Asia, and Latin America.

Debt financing remains a common practice in infrastructure projects, with debt levels raising concerns, especially in developing countries. Some nations have faced financial turmoil due to excessive debt incurred for infrastructure development. Governments are increasingly involving the private sector in financing infrastructure projects, prioritizing those with appealing commercial returns. Institutions like multilateral development banks play pivotal roles in mobilizing investments for cross-border projects.

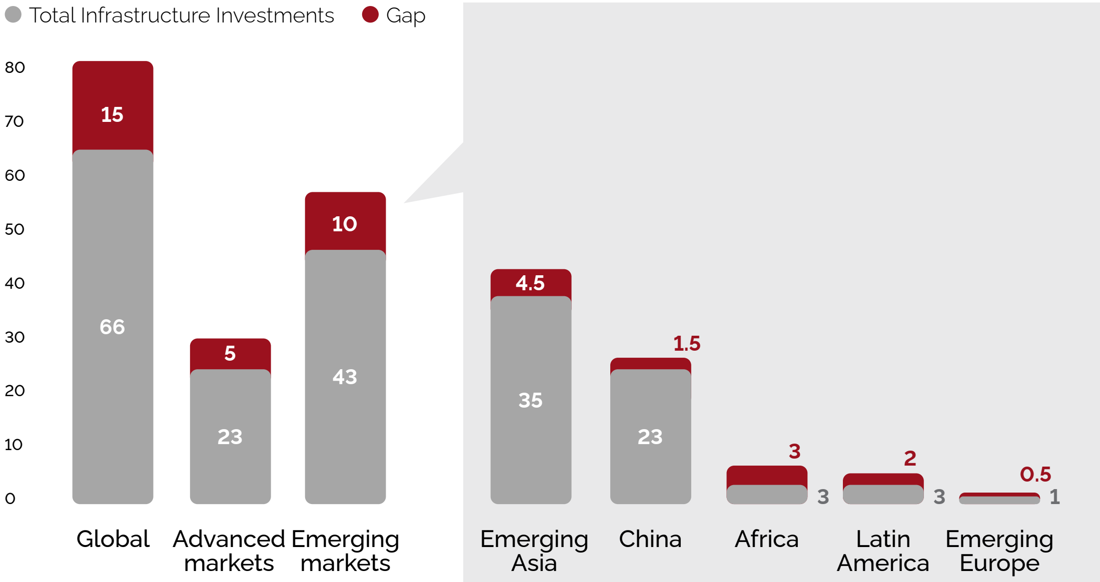
Furthermore, there is a growing emphasis on environmental, social, and governance (ESG) considerations in infrastructure investments, with climate-smart projects expected to cost between 2% to 8% of GDP per year for low- and middle-income countries. Emerging markets are poised to lead the shift towards greenfield projects, contributing to the projected doubling of global infrastructure spending by 2050.

In terms of sectors, transportation, particularly road projects, has made a notable comeback, led by investments in countries like China and India. In India, government reforms and infrastructure investment trusts have attracted private investors, resulting in substantial investments in the transport sector. The energy sector, while witnessing a 12% dip, continues to embrace renewables, with 90% of new electricity projects involving clean energy sources.

The foundation of development in emerging countries lies in infrastructure, propelling economic growth, connectivity, and investment. Reliable transportation, energy, and communication systems enhance productivity and access to education and healthcare. To prosper, these countries should attract from 4.5% to 8.2% of GDP for infrastructure investments in the long-term progress range, focusing on transportation and electricity[289].

Projections suggest a substantial leap in global infrastructure investment, reaching 66 trillion USD from 2021 to 2040. Notably, two-thirds will flow into emerging markets, averaging USD 2.2 trillion annually and accumulating to a formidable 43 trillion USD by 2040[290]. A significant hurdle emerges as developing countries must allocate approximately 4.5% GDP, equivalent to 1.5 trillion USD annually, to bridge the infrastructure funding gap. Presently, Africa, South Asia, and Latin America are contending with gaps amounting to 6.5%, 3.3%, and 1.1% GDP[291], respectively—a financial burden surpassing the capacity of governments to independently finance.

Figure 2.36 Estimated total infrastructure investment and gap, emerging markets,
2021–2040, USD trillions

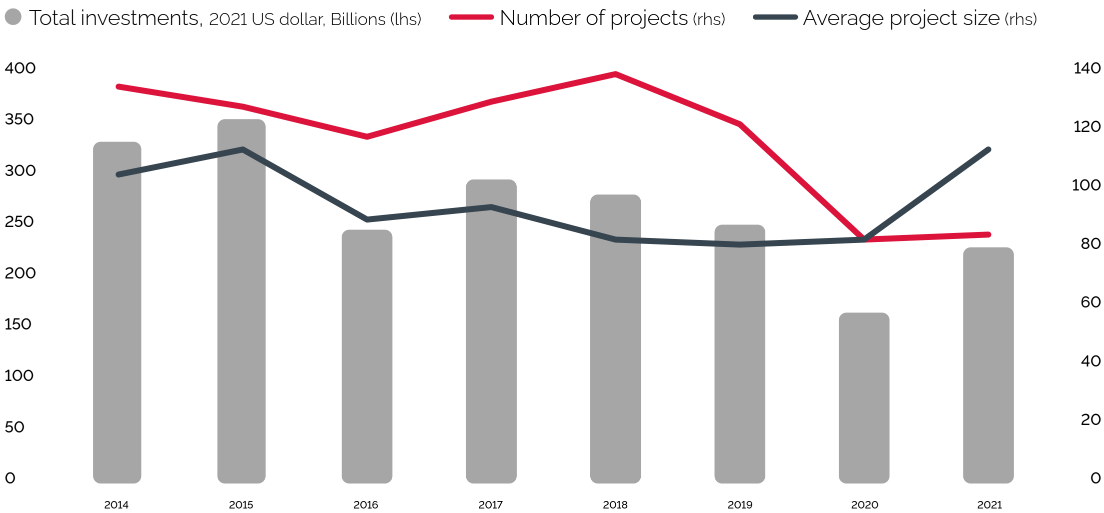


Source: Swiss Re[292]

Even before the COVID-19 pandemic, emerging markets confronted issues of slowing growth, stagnant productivity, growing inequality, and pressures on social cohesion. The pandemic and the subsequent global response have heightened pre-existing vulnerabilities, imposing significant human and economic costs on developing countries. Inflationary pressures and worsening financial conditions since the proliferation of recent political instability have added further strain on developing economies.

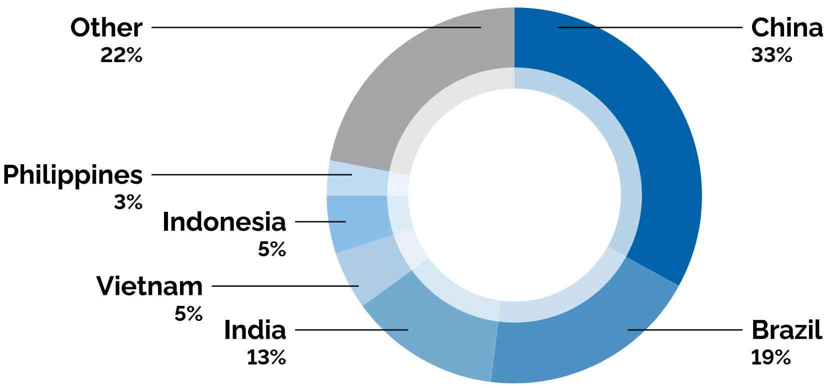
Infrastructure investment projects before the pandemic did not show stable growth. After COVID, projects become bigger but fewer in numbers. The recovery trends unveil a concentration of investments in five countries from the advanced group—China, Brazil, India, Indonesia, and Vietnam—which captured $68.3 billion, constituting 75% of the global total.

Figure 2.37 Investment commitment in infrastructure projects with private participation in emerging markets, 2013–2022



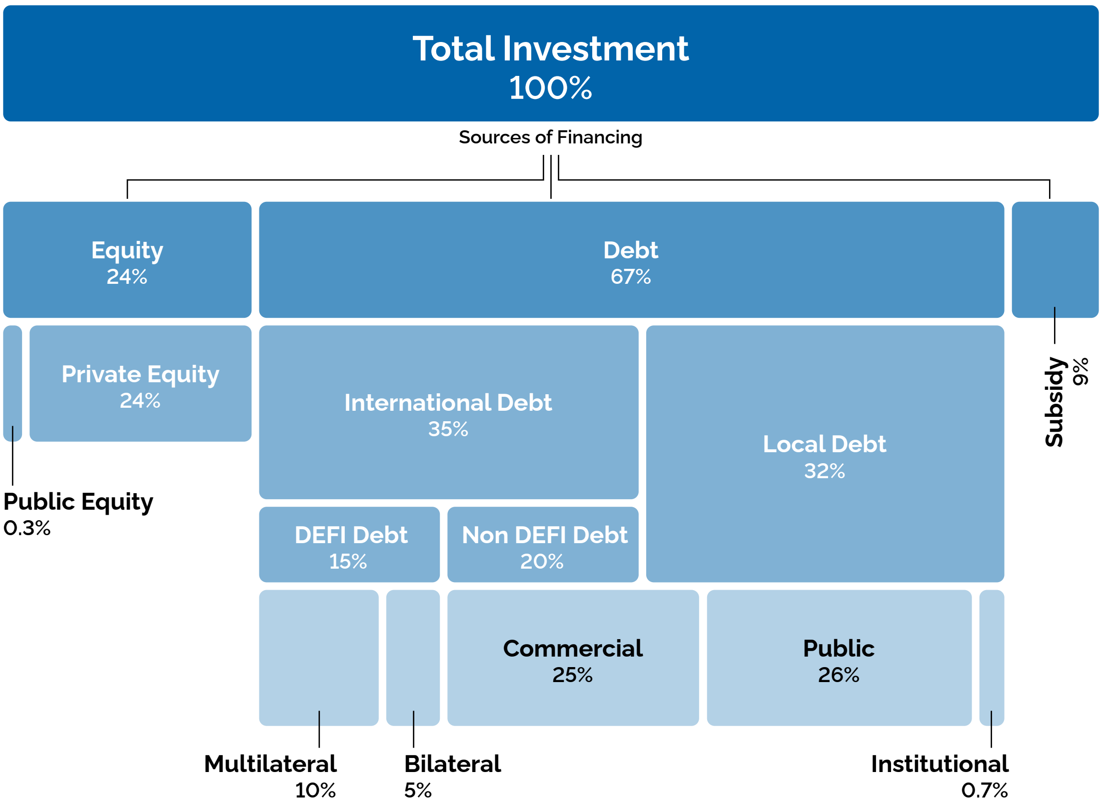
Source: The World Bank[293].

Figure 2.38 Investment commitment in infrastructure projects with private participation in emerging markets by country, 2022



Infrastructure projects continued to be highly debt reliant in 2022 as per norms of infrastructure financing, with a total debt of US$24.5 billion[294]. The concerning trajectory of debt indicators in developing countries persists, with external debt reaching a staggering $9 trillion by the end of 2021—more than double the amount a decade ago. 60% of the poorest countries are now at a heightened risk of debt distress[295].

Figure 2.39 Sources of financing infrastructure projects in emerging markets



Source: The World Bank[296].

Note: Development and Export Finance Institution (DEFI) refers to multilateral institutions and bilateral agencies with a development mandate.

Some countries faced financial turmoil due to excessive debt incurred by infrastructure development. Between 2008 and 2021, China committed $240 billion to rescue 22 countries heavily engaged in the Belt and Road Initiative (BRI), such as Argentina, Pakistan, Kenya, and Turkey. Beijing handles the financial distress of BRI borrowers with a tailored approach. Low-income countries undergo debt restructuring without new funds, while middle-income countries receive financial assistance, mainly through a balance of payments support, to prevent default. Chinese banks prioritize maintaining liquidity for major overseas borrowers, particularly middle-income nations, which constitute over 80% of China's total overseas lending. Low-income countries, comprising 20% of China's total overseas lending, are less likely to receive bailouts, reflecting a more selective strategy focused on key borrowers for the stability of the Chinese banking sector.[297]

Navigating the Shifting Tides: Infrastructure Investment in an Evolving Landscape

Governments are increasingly turning to the private sector for financing, prioritizing projects with appealing commercial returns. To ensure comprehensive funding, it's crucial to involve various stakeholders. Capital is primarily sourced from multilateral development banks (MDBs), regional and national development banks, sovereign wealth funds (SWFs), public wealth funds (PWFs), equity funds, and state-sponsored green investment funds. Recently, a few new big institutions have been established: the New Development Bank (2015), covering BRICS markets, the Asian Infrastructure Investment Bank (2016), covering primarily Asian developing countries, and the National Bank for Financing Infrastructure and Development (2021), with a mandate specific to India. Innovations in MDBs' and development finance institutions' (DFI) operations enhance their impact, such as local currency financing for capital market solutions and risk mitigation. The New Development Bank (NDB) aims to increase local financing from the current 22% to 30% by 2026[298]. MDBs and DFIs play a pivotal role in mobilizing investments for cross-border projects. The Inter-American Development Bank (IADB) supports a 33.1-kilometer highway project in Bolivia, aiming to integrate countries in Latin America and the Caribbean into regional and global value chains. This initiative facilitates the transportation of over 80% of Bolivian exports, predominantly reliant on road transport[299]. The African Development Bank (AfDB) invested over $44 billion[300] over the last seven years into infrastructure projects such as road corridors, ports, and railways, thus connecting countries on the continent to boost economic development.

The West coast of Africa: projected growth by 2035

51 million

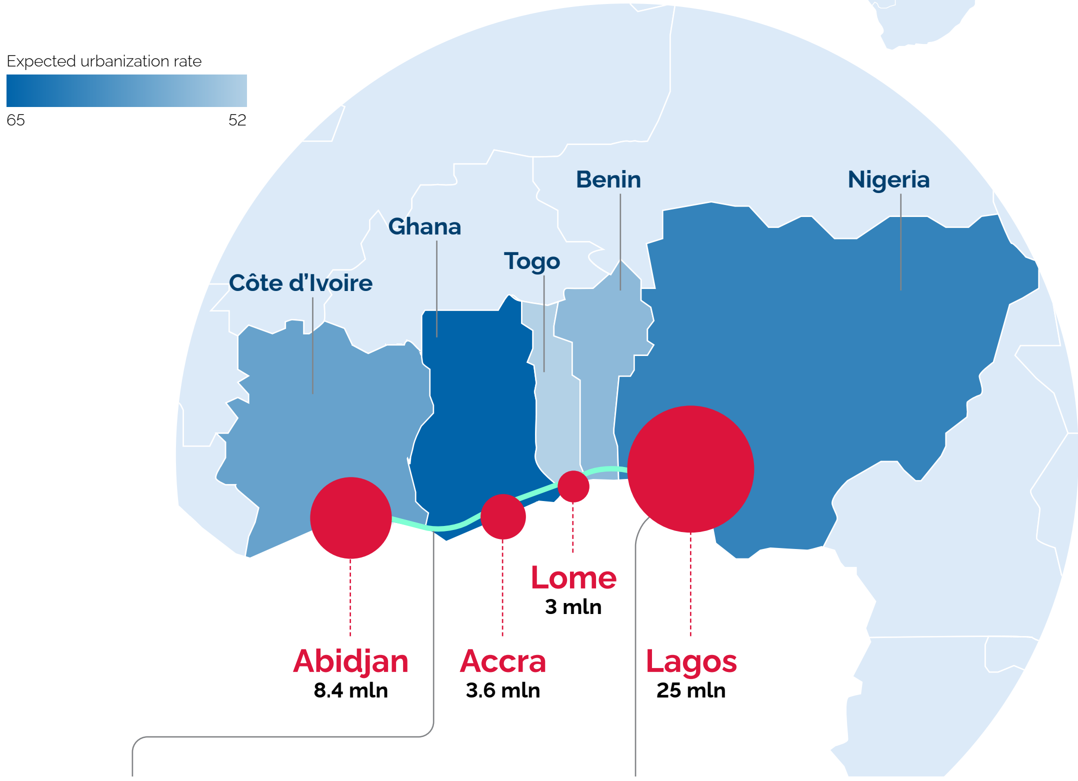
Expected population[301]

All Africa – 1.8 billion

60.2%

Expected urbanization rate[302]

Average for Africa – 50%



Lagos-Abidjan highway

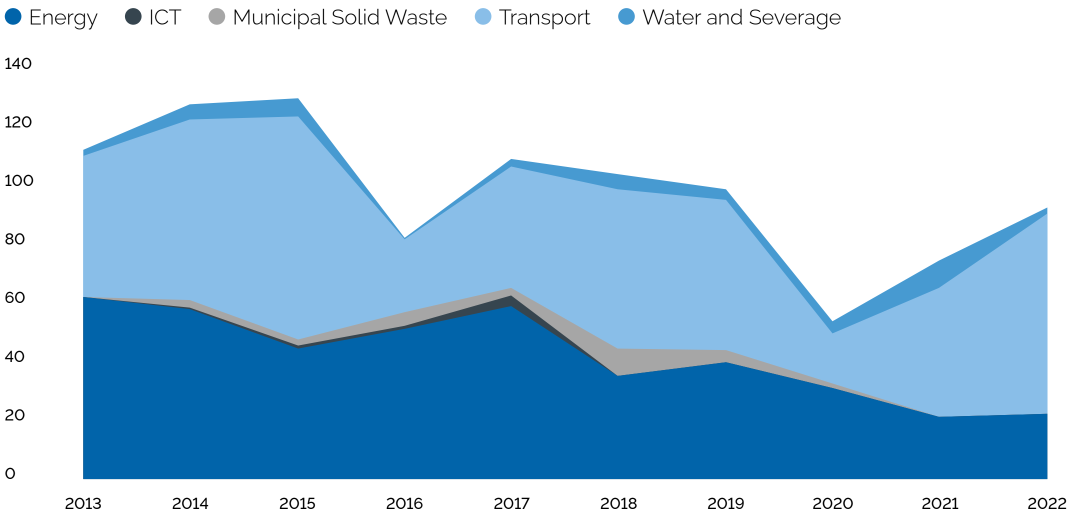
The 1,028-kilometer supranational highway will link the economic hubs of five West African nations, specifically Côte d'Ivoire, Ghana, Togo, Benin, and Nigeria. The project will extend across and have a positive impact on a minimum of 40 million people in Nigeria alone[303].

Lekki Sea Port

This multi-purpose sea port and deepest in Sub-Saharan Africa will be used for commercial operations across Nigeria and the West African region. It is anticipated to yield an approximate revenue of $361 billion and potentially generate up to 170,000 new job opportunities[304].

Responding to mounting pressure from diverse stakeholders, infrastructure investors are intensifying their focus on environmental, social, and governance (ESG) considerations, seeking investments in environmentally sustainable assets. The World Bank projects that the implementation of new climate-smart infrastructure could entail costs ranging from 2% (US$640 billion) to 8% (US$2.7 trillion) of GDP per year through 2030 for low- and middle-income countries. The forthcoming decade anticipates a significant surge in infrastructure spending, with emerging markets poised to lead this charge primarily through greenfield projects, contributing to the projected doubling of global infrastructure spending by 2050[305]. According to a recent International Finance Corporation (IFC) report, cities in emerging markets hold the potential to attract over US$3.1 trillion in climate-related investments by 2030[306], spanning renewable energy, public transportation, waste, and water initiatives. In 2021, the Asian Infrastructure Investment Bank (AIIB) allocated 2.9 billion USD to climate finance, representing 48% of total approved financing, with a target to reach 50% by 2025.

Figure 2.40 Investment commitments in infrastructure projects by sector, emerging markets, 2013–2022



Source: The World Bank[307].

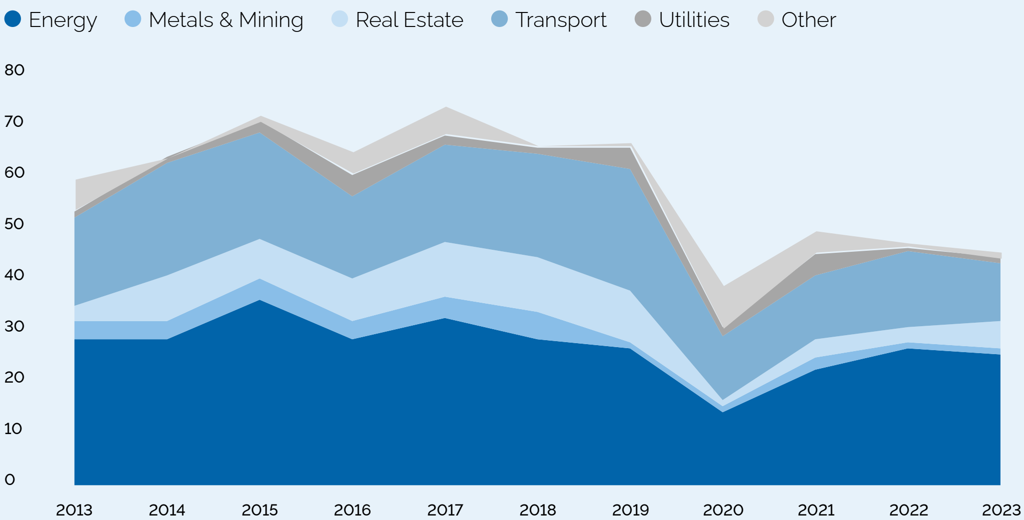
Amidst the challenges posed by the COVID-19 pandemic, the transport and energy sectors have historically dominated infrastructure investments in emerging markets. While the transport sector suffered severe setbacks during the pandemic due to international travel restrictions and supply chain disruptions, it has now emerged as a driving force in the ongoing recovery. Notably, the transport sector spearheaded the revival with 62.1 billion USD in PPI investments across 85 projects in 2022, constituting a remarkable 68% of total PPI investments—the second-largest volume in the past decade. This surge is attributed to substantial road Public-Private Partnership (PPP) projects, particularly in China and India. China secured 25.9 billion USD in PPI investment commitments for 25 road projects, contributing to the addition of 2,370 km of highways.

Chinese BRI: how is it going?

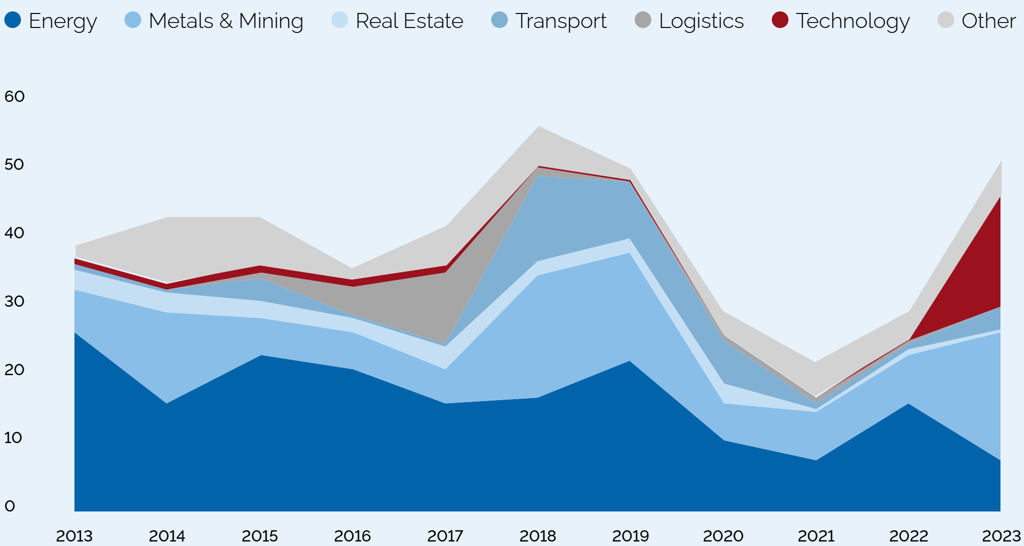
China's One Belt One Road Initiative (BRI) encountered a complex journey over the past decade. The COVID-19 outbreak posed a substantial setback, leading to a global economic slowdown and challenges in debt repayment. Zambia's late 2020 default marked a critical moment for China as its major creditor. Concurrently, other nations like Ethiopia, Sri Lanka, and Pakistan faced debt crises, causing annual BRI engagement to drop to $63.7 billion in 2020, down from a peak of over $120 billion in 2018[308].

Figure 2.41 Chinese engagement in BRI projects by sector, 2013–2023 H1

Construction Contracts (typically financed via loans), mln USD



Investment Engagement (typically financed via equity stakes), mln USD



Source: Green Finance & Development Center[309].

A decade into the BRI, cumulative engagement has exceeded USD 1.016 trillion, comprising about USD 596 billion in construction contracts and USD 420 billion in non-financial investments. Sub-Saharan Africa has emerged as a major growth region, driven by countries like Namibia, Eritrea, and Tanzania[310].

China's investment strategy within the BRI has transformed, revealing four key trends. Firstly, there's a notable shift towards greener initiatives to address global environmental concerns. Secondly, a move from grand projects to more refined endeavors demonstrates strategic adaptability. Thirdly, concerns about debt sustainability have prompted a reassessment of financing models. Lastly, an increased presence of private enterprises signifies a diversified BRI approach[311].

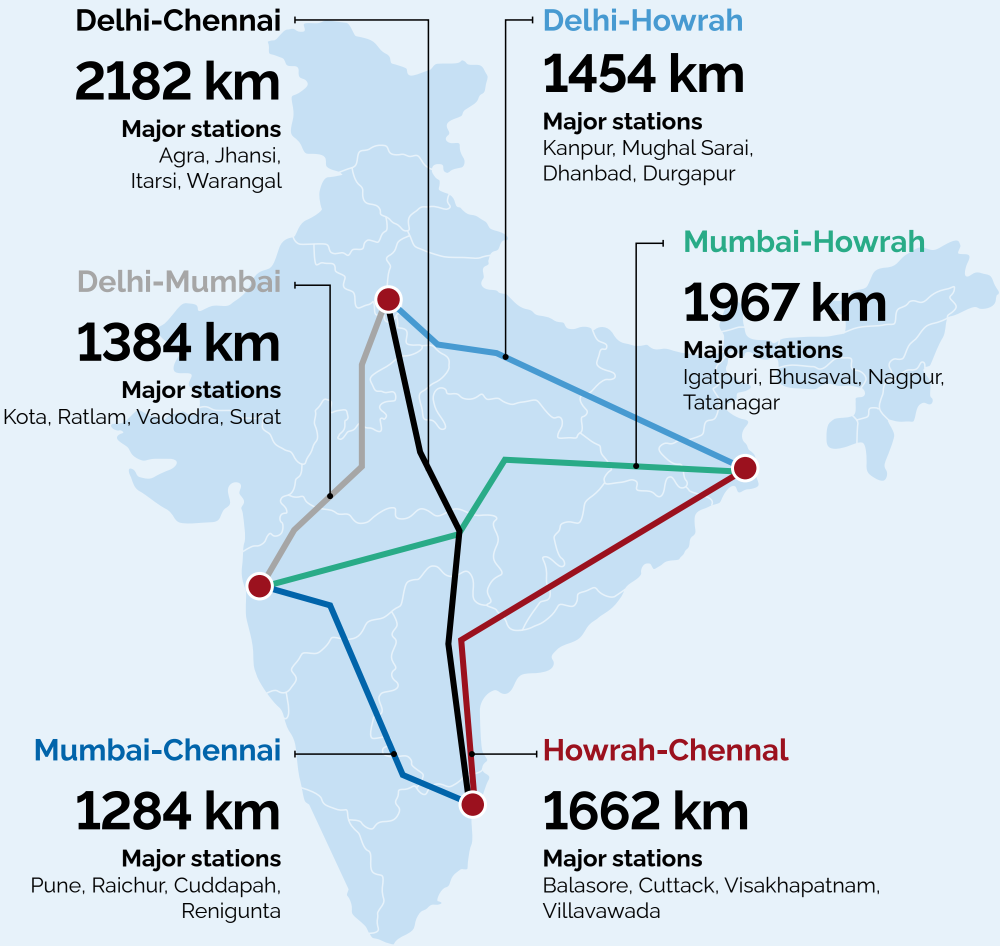
Looking ahead, BRI's future engagements are anticipated in six key project types: manufacturing in new technologies, renewable energy, trade-enabling infrastructure, ICT, resource-backed deals, and high-visibility or strategic projects.

In South Asia, notably India, there was a notable increase in road PPI investments, fueled by the government's reforms such as the National Monetization Pipeline. These reforms, including leasing, concessions, and infrastructure investment trusts, aimed to attract private investors interested in India's infrastructure assets. The transport sector in India witnessed significant investments, with 16 road projects securing financial closure, amounting to 6.3 billion USD and adding 1,308 km of highways. Moreover, there is a surge in railway sector investments, totaling 7.8 billion USD in five projects (2022), slightly surpassing the previous five-year average. The São Paulo Metro Line 6 project in Brazil stood out, with reported investments of 3.4 billion USD, led by the Concessionária Linha Universidade consortium, ACCIONA from Spain and partners, and Brazil's National Bank for Economic and Social Development (BNDES)[312].

Diamond Quadrilateral Railway Project

India's aging railway system, which has its roots in the colonial era, spans a vast 65,436 kilometers[313] and is the transportation mode for approximately 8.4 billion people annually[314]. The problem has been partially solved with the construction of the Golden Quadrilateral in 2013. However, the current railways' capacity is insufficient to meet the demand of fast-growing Indian megacities.

The Diamond Quadrilateral project is designed to establish a high-speed rail network that links major metropolitan cities in India, with the goal of reducing travel time by up to half.



The primary terminals for this project will be located in Delhi, Mumbai, Visakhapatnam, Thiruvananthapuram, Bangalore, Chennai, Hyderabad, and Kolkata. These high-speed trains will be designed to run at a speed of 320 kilometers per hour, traversing through 14 states and territories of India[315].

In contrast, the energy sector witnessed a 12% dip from 2021, reaching a current 10-year low. Despite this, 90% of the 55 new electricity projects embraced renewables, comprising 44% of new investments[316]. The expansion of clean energy hinges on grid development and storage technologies, with increasing private sector involvement in energy storage. Initiatives like ILACC, led by the Development Bank of Latin America (CAF), aim to enhance the competitiveness of carbon credit supply, reducing greenhouse gas emissions and mobilizing resources for climate change. These institutions experiment with tools aligning infrastructure projects with sustainability priorities, financing up to 50% of new power generation capacity in low- and middle-income countries between 2000 and 2020, with renewable energy comprising over half of newly added capacity from 2011 to 2019[317].

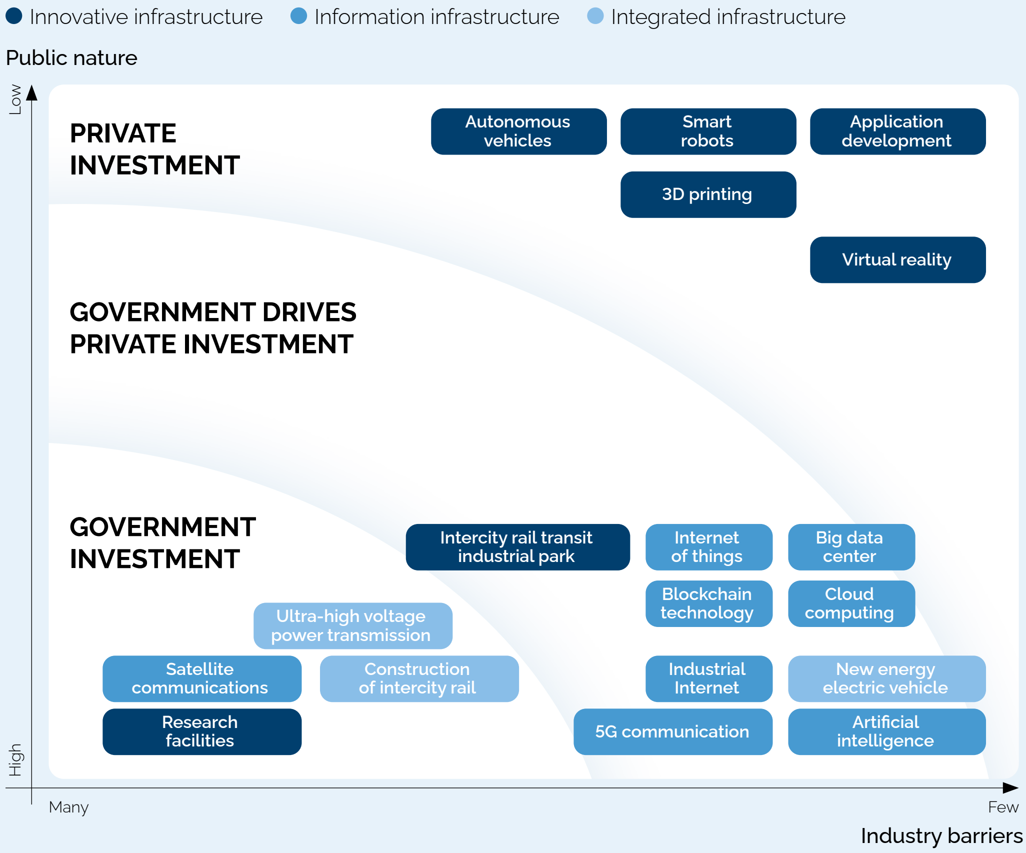
Chinese New Infrastructure

China's visionary "New Infrastructure" plan embodies a transformative shift, signaling the nation's departure from solely investing in physical structures towards a landscape where digital components play a pivotal role. Despite "new infrastructure" presently forming a modest segment of the overall investment, traditional infrastructure retains a central focus for investment funds. In 2021, the scale of investment in new infrastructure soared to 158 billion USD, constituting approximately 7.7% of the total infrastructure investment. While this proportion is anticipated to double to 15–20% by 2025, the enduring influence of traditional infrastructure in driving economic growth remains unshaken.

China's strategic advancements in sectors where it holds a leading position, notably 5G and EV, are anticipated to fuel a cumulative surge in new infrastructure investment, reaching a staggering 1800 billion USD by 2030. This strategic maneuver is not only re-shaping China's digital economy, but it also steers the global trajectory of infrastructure development[318].

In contrast to the state-driven investment surge in traditional infrastructure following the 2008 global financial crisis, the 2020 stimulus package is notably characterized by increased reliance on market forces and private investment. This shift opens up abundant opportunities for business stakeholders to actively engage in China's ongoing development. Government investment will be prominent in research and satellite communications, while private investments will play a key role in application development, virtual reality, 3D printing, and smart robot production. These sectors present relatively low industry barriers for foreign investment, marking a distinctive feature of the current phase of China's economic evolution.[319]

Figure 2.42 Industry barriers for new technology investment



Source: China Briefing News[320].

In conclusion, the trajectory of development in emerging countries hinges on robust infrastructure as the linchpin for economic progress. The imperative is to allocate substantial resources—ranging from 4.5% to 8.2% of GDP—towards infrastructure projects, with a focus on transportation and electricity. Projections indicate a substantial surge in global infrastructure investment, with two-thirds flowing into emerging markets, albeit accompanied by the challenge of allocating funds to bridge the infrastructure funding gap. Despite pre-existing vulnerabilities exacerbated by the COVID-19 pandemic, there is a notable shift towards private sector financing and a growing emphasis on environmental, social, and governance considerations. As emerging markets lead the surge in infrastructure spending, especially in greenfield projects, the need for strategic collaboration, innovation, and a strong focus on sustainability becomes paramount. Navigating the evolving landscape of infrastructure investment requires concerted efforts to ensure inclusive and resilient development in the face of emerging challenges.

2.7. New Technologies: A Double-Edged Sword

The COVID-19 pandemic has accelerated digitalization in emerging markets, with internet penetration increasing by 8-10 percentage points on average. Mobile penetration has reached 100%, while fixed broadband is growing, although it is still relatively low. The development of digital infrastructure has been driven by businesses, and more than 50% of executives believe remote work will continue post-COVID. However, the pace of digitalization varies across regions, with South Asia leading the way and Latin America lagging behind.

Automation is on the rise in emerging markets, with many firms expecting acceleration in adoption. China leads in industrial robot installations, with four other emerging markets—Mexico, India, Turkey, and Thailand—entering the top 15 countries for robot installations in 2022. However, robot density remains low in most of these countries. While automation can displace jobs, its impact depends on factors like productivity and demographic changes. For some emerging markets, automation may offer growth opportunities rather than job threats. AI is also becoming a major automation tool, with potential to complement, not replace, jobs.

Technology is driving global competitiveness, impacting consumption patterns, production efficiency, market complexity, and human development. This presents a new set of opportunities and challenges for emerging markets.

While several advanced emerging markets such as China, India, and Russia view technological advancement and self-reliance as a goal of its own, most emerging markets predominantly use existing global technology solutions to achieve their broader goals. Digital technology has long been instrumental to leapfrogging in economic development, increasing labor productivity, financial inclusion, access to education and healthcare and quality of public service delivery.

Digital Technology: Faster but Uneven Adoption

The COVID-19 pandemic has accelerated the pace of digitalization, boosting demand for internet infrastructure as well as digital services in the consumer and business segments. Internet penetration improved by 8–10 percentage points on average throughout the emerging markets during the two years of COVID lockdowns. One exception is South Asia, which saw a massive surge in the number of new internet users in 2020, resulting in a leap of 15 percentage points in two years, almost twice as much as in similarly positioned Sub-Saharan Africa.

Mobile penetration in emerging markets reached 100% as early as 2018, with East Asia, Latin America and Middle East boasting more than 1 subscription per person while South Asia and Sub-Saharan Africa hovering above 80% penetration rate. On the contrary, fixed broadband penetration, which traditionally lagged behind mobile connections in emerging markets and grew 5–15% on average before the pandemic, saw an uptick in growth in 2020. However, overall fixed broadband penetration levels are still rather low everywhere except East Asia & Pacific. Since broadband is crucial for remote work[321], this may hamper the shift towards working from home in emerging markets, at least until mobile broadband (5G) becomes commonplace.

Figure 2.43 Internet penetration by market, % population, 2019–2021

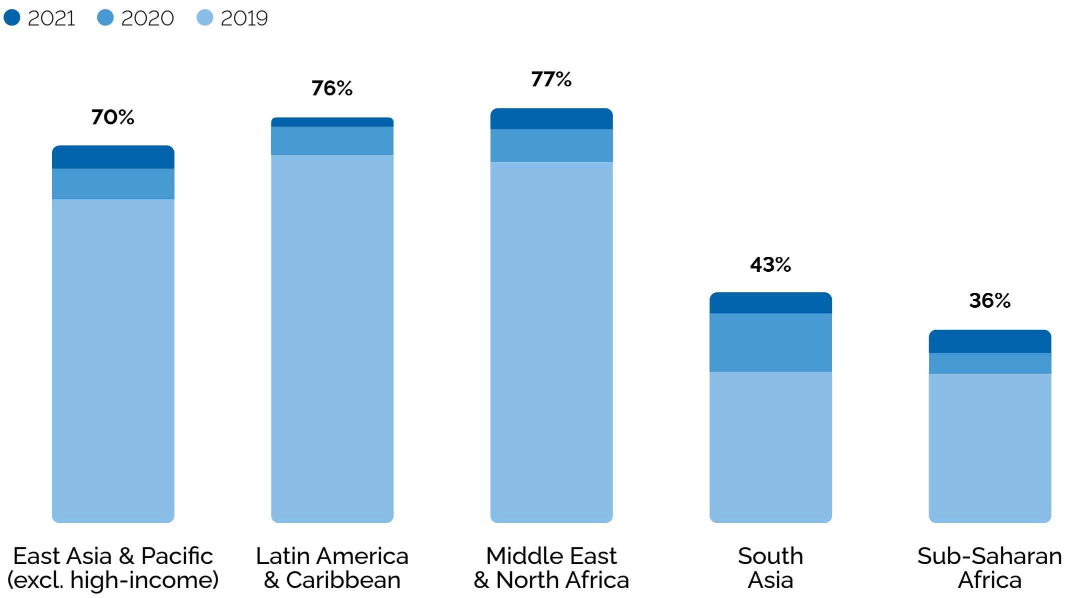
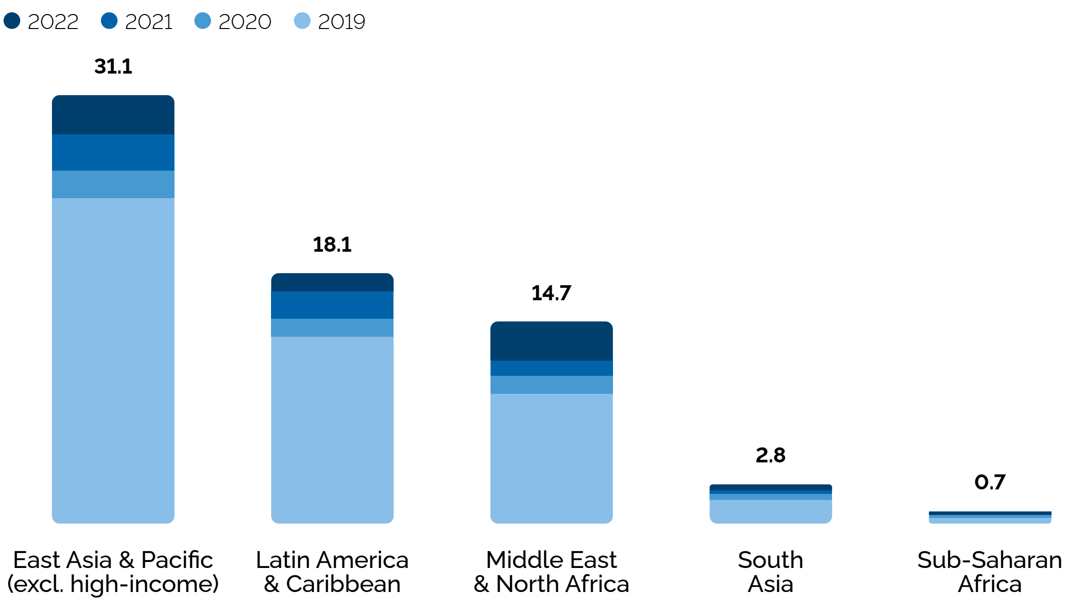


Figure 2.44 Fixed broadband internet penetration by market, per 100 people, 2019–2021



Source: World Bank

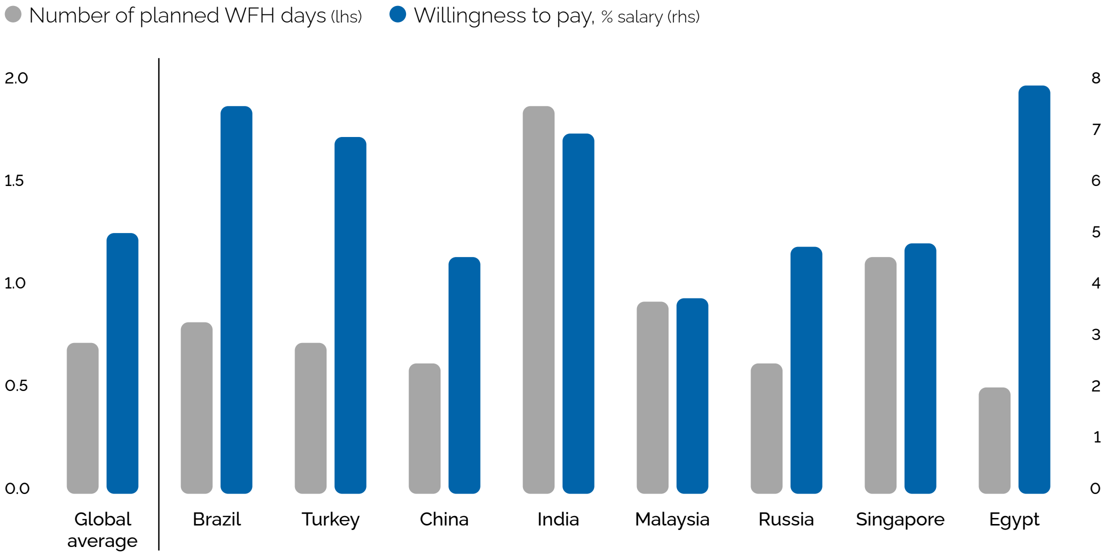
Note: CAGR over the period of 2016–2019 is used for "2019" data points (vertical axis) in order to put post-COVID changes in internet penetration rates in perspective. In other cases (2020–2022), annual growth rate is shown.

The development of digital infrastructure was propelled to a large extent by businesses, which in 2020 alone achieved a level of digital adoption earlier expected to be reached in no less than 7 years[322]. Though such a sharp acceleration has been relatively short-lived, high levels of demand for internet infrastructure will remain for the years to come due to the further spread of online services, cloud computing, and hybrid work.

The latter trend is relatively less prominent in emerging markets, chiefly because it is white-collar, high earning jobs that are more susceptible to occasional working from home. Poorer living conditions less convenient for remote work also factor in[323]. Moreover, some cultural differences, especially in Asian economies, lead to the hesitance of workers to miss out on in-person social bonding with colleagues and bosses.

However, there are also factors that propel hybrid work in emerging markets, such as long commuting times and a higher number of children (the latter being a strong determinant for willingness to work from home globally[324]). Thus, for workers with high education in emerging markets, current hybrid work schedules are hardly different from those in developed countries.

Figure 2.45 Intention for occasional work from home, 2022



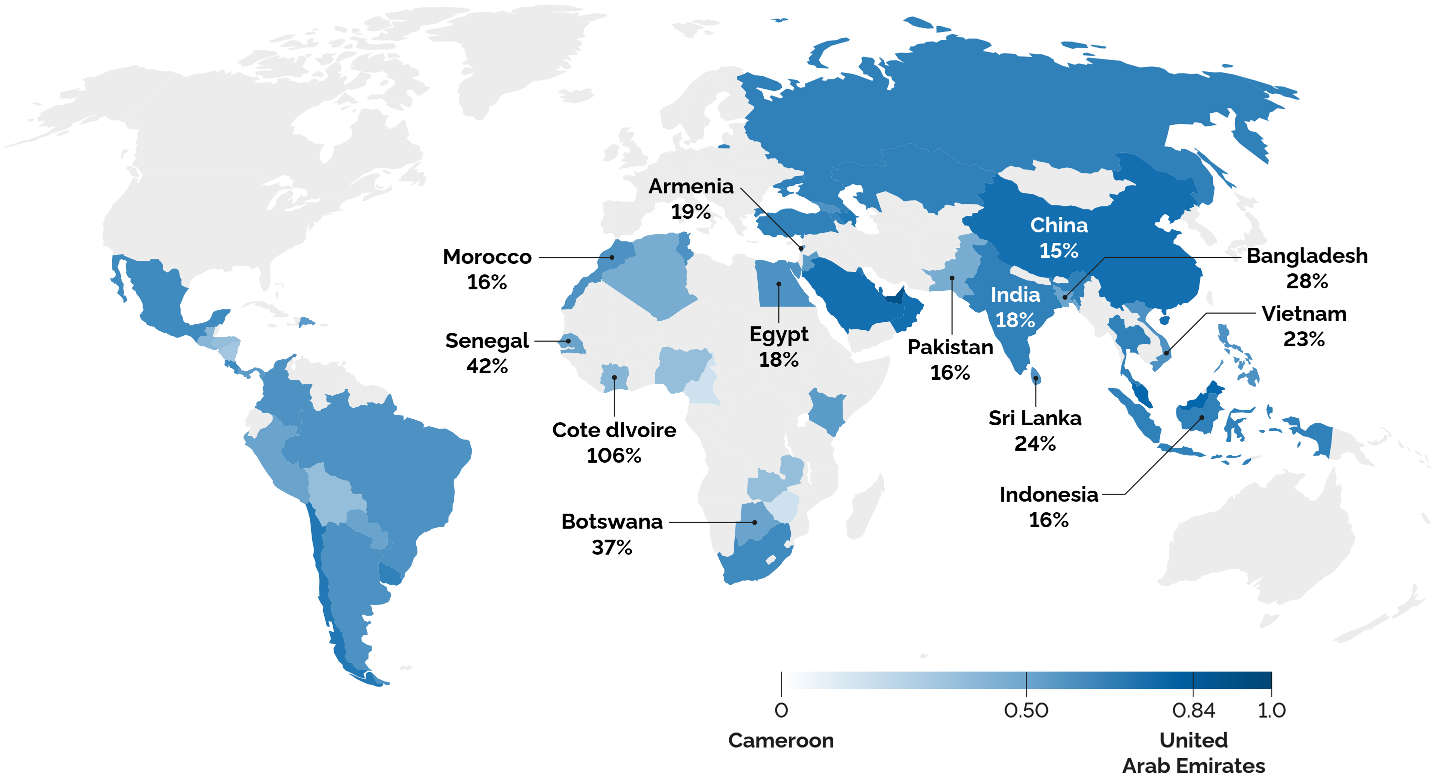
Source: Brookings[325].

While virtually all emerging markets have recently made steps forward in the development of basic digital services, the pace of digitalization has not been even across the globe.

Since 2019, emerging markets have improved their average level of digitalization compared to developed countries, flattening the global disparity in digital adoption[326]. However, the difference among emerging markets themselves has continued to grow, with South Asia being a clear leader in the pace of digital transformation , improving its multidimensional digital maturity by 22% in 3 years[327]. India is the main driver of success, gaining 19 positions in the ranking since 2019.

> Since 2019, emerging markets have improved their average level of digitalization compared to developed countries, flattening the global disparity in digital adoption. However, the difference among emerging markets themselves has continued to grow, with South Asia being a clear leader in the pace of digital transformation.

Figure 2.46 Digitalization rankings, 2020-2022



Source: BBVA Research[328].

At the other end of the spectrum there is Latin America, which has been adopting digital technologies slower than Sub-Saharan Africa. This may seem surprising given the levels of economic development (Latin America's GDP per capita is 5.6 times higher than that of Sub-Saharan Africa), but makes sense when you take into consideration the countries' policy focus. While Latin America historically focused mostly on rapid adoption of digital technologies in the public sector and large enterprises, other countries including Sub-Saharan Africa distributed their efforts towards user adoption, regulation, and infrastructure. Eventually, a wide scope of digital adoption results in higher levels of overall national digitalization[329].

The digitalization discussed above includes not only technologies themselves, but a wide spectrum of other conditions, such as supply conditions (infrastructure and costs), demand conditions (user, government, and enterprise adoption), and institutional environment (regulation)[330]. The Skolkovo digital index also includes economic and social effects of these technologies, as well as R&D, technical competences, and specialized human resources[331].

As officials all over the world tried to maintain public service delivery, the COVID-19 pandemic resulted in accelerated adoption of digital policies. Depending on their maturity level, emerging markets applied different approaches to deployment of digital services during the pandemics.

More digitally mature countries, such as China and India, leveraged the existing digital landscape, including both public and private services, to implement a wide range of new initiatives from health status tracking and telemedicine to food rationing. Others used a hybrid "phygital" approach adequate to the level of digital development. For example, Brazil deployed AI-powered interactive voice response systems for contact tracing in April 2020[332]. Less-developed countries that didn't succeed in digital response to the pandemic partnered with more advanced counterparts on digital transformation projects. For example, the Smart Africa alliance has been actively cooperating[333] with the ITU and The Digital Impact Alliance for building a digital government reference platform[334] based on reusable, standard, secure, and interoperable building blocks. This unified approach and a universal set of tools for developing digital services will help cut government digitalization costs while ensuring interoperability and fast data exchange between government agencies and even other countries using the same platform architecture.

Overall, the pandemic boosted the adoption of digital technology, reducing the gap between emerging and advanced markets. While some of the changes, such as remote work, may not stick, there has been a profound shift in attitude towards digital technology as a whole among businesses and governments. Hence, we can expect more comprehensive and mature digital policies and transformation initiatives to emerge over the coming years.

Digital Solutions for Economic Problems: The Case of Aadhaar in India

Aadhaar is a voluntary digital identification system launched by the Indian government in 2010. With 99.9% registered adults in India in 2022[335], it is the largest digital ID system in the world.

Serving the sole purpose of user authentication, Aadhaar is implemented in a decentralized fashion, so that resident attributes (e.g., income tax number, driver license number, etc.) as well as transaction history are not gathered in one system. Government and private entities can integrate Aadhaar in their services as a part of identity check systems.

Though relatively simple in design, Aadhaar proved to be a crucial digital system in a country where reliable proof of identity and demographic statistics have long been issues due to the high number of citizens living in remote areas and widespread low literacy rates.

During the COVID-19 pandemic, the system helped the government deliver public services far beyond vaccination certification, ensuring financial aid to vulnerable groups affected by lockdowns. Using Aadhaar authentication for distribution of ration cards under the One-nation-one-ration-card (ONORC) program helped increase its coverage almost twice over. Aadhaar has also facilitated direct unconditional cash transfers to 200 million women and 18.3 million construction workers as a part of specialized aid programs.

While digital identification is not a new concept, and developed countries have already moved further toward building "whole of government" digital platforms, such simple yet working solutions remain relevant near-term goals for many emerging markets.

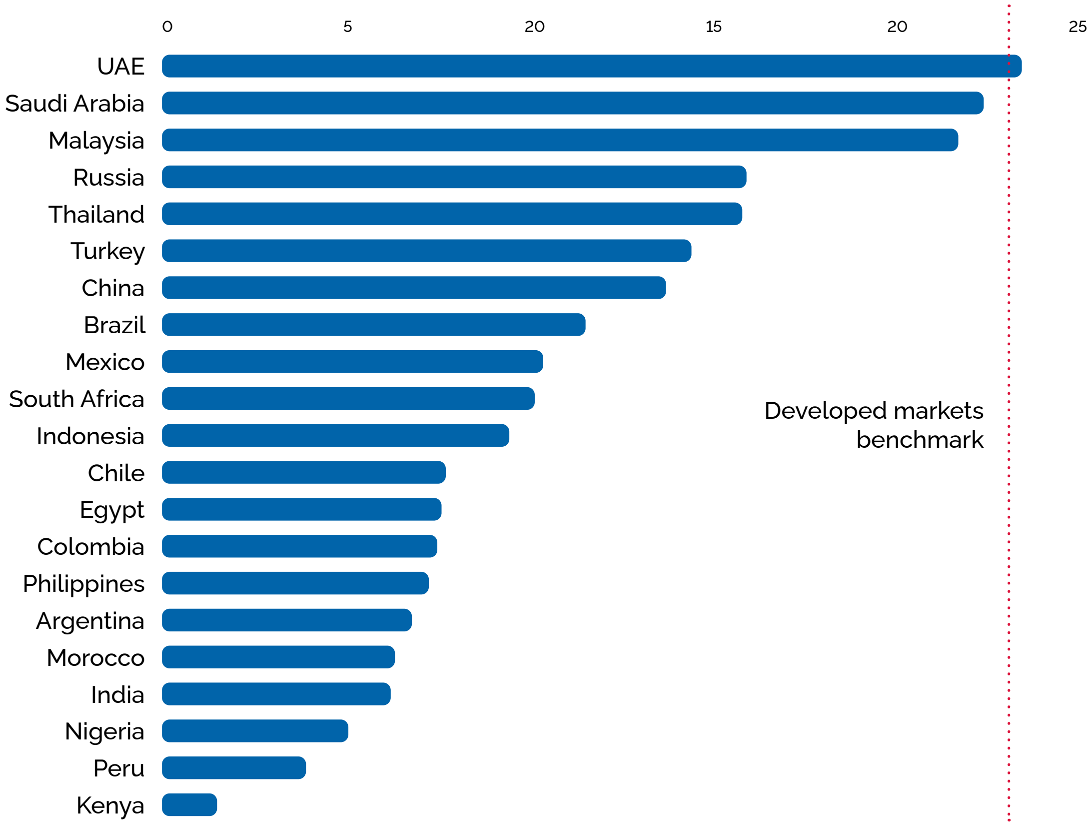
Automation: Room for Growth

The pervasive integration of automation technologies is presenting both promising opportunities and complex challenges for emerging markets. Notably, it enhances cost efficiency and competitiveness by significantly reducing production costs. Additionally, automation ensures consistent quality in manufacturing and service delivery, thereby improving product standards, customer satisfaction, and international competitiveness. Moreover, the innovation spurred by the adoption of automation technologies creates new job opportunities, especially in roles related to designing, operating, and maintaining automated systems. Global supply chain integration is another significant advantage. Automation facilitates the seamless incorporation of emerging markets into global supply chains, attracting foreign investments and enhancing economic interconnectedness. The safety aspect cannot be overlooked either, as automation replaces humans in high-risk tasks, thereby improving workplace safety and reducing costs associated with accidents. Due to these positive effects, automation is fully embraced by firms in emerging markets, with plans being more aggressive than those in developed (Fig. 2.48). It should be stated, however, that these markets are starting from a lower base.

The advantages of automation are coupled with challenges. Foremost among these is the potential displacement of jobs, particularly those involving routine tasks. Emerging markets are by and large projected to be affected less in the next decade, as their economies have a lower automation base to start from, but the higher their maturity status the more noticeable the effect of automation will be (Fig. 2.47).

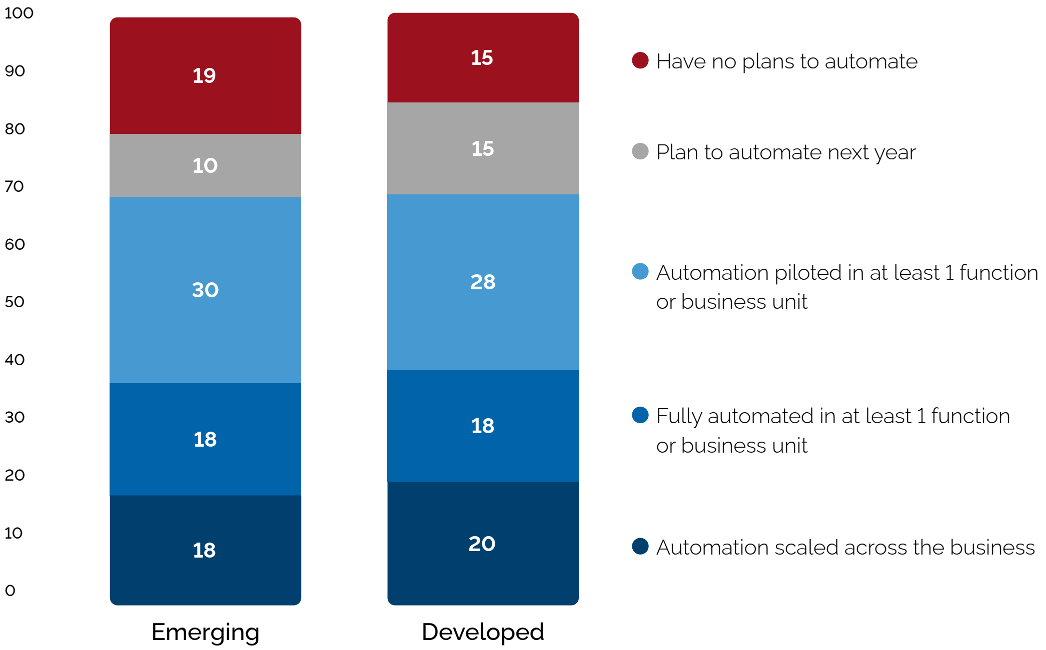
The initial investment costs for adopting automation technologies, including technology, infrastructure, and training, present another hurdle for developing markets, which may struggle to access the capital needed for this upfront investment. Furthermore, the rapid pace of automation may outstrip the ability of the workforce to acquire new skills, leading to a skill mismatch and higher unemployment rates. Dependency on technology also exposes economies to cybersecurity risks, especially in developing markets with limited resources to implement robust cybersecurity measures.

Figure 2.47 Percent of workforce affected by automation by 2030



Source: RBC Global Asset Management[336].

Figure 2.48 Progress in business processes automation, % of respondents



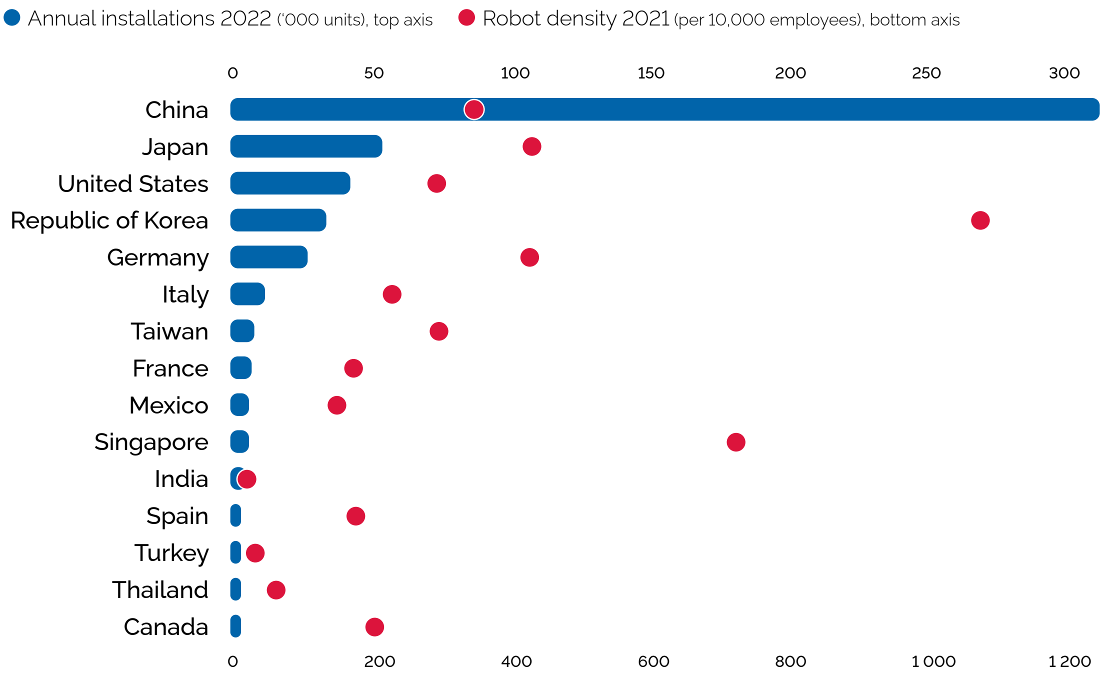
Source: McKinsey & Company[337].

Note: Results of a survey by McKinsey & Company.

Some emerging markets, though, have already achieved top-rank positions in certain aspects of automation such as the adoption of robots. China has been the global leader in total industrial robot operational stock since 2016[338] and holds the first place in annual installations. In 2022 the country set up more robots than the rest of the world combined. Other developing countries are also growing their demand for industrial robots. Besides China, four emerging markets—Mexico, India, Turkey, and Thailand—entered the top 15 countries by the number of annual installations in 2022.

At the same time, robot density (number of robots per 10,000 workers) in most of these countries is still far below the world average[339]. The automotive industry is one where tasks are both simple to perform and physically intense, so it is logically the first to be automated. For example, in 2021, India had 148 robots installed per 10,000 workers in the automotive sector, while the overall industrial robot density stood at 7 robots per 10,000 employees. In other industries, emerging economies are yet to realize the potential for automatization, with the next in line being electronics[340], as global companies shift production from China to South and Southeast Asia.

Figure 2.49 Figure 2.49 Industrial robot installations and density in emerging markets



Sources: International Federation of Robotics[341], IMF Asia and Pacific Dept[342], ILO[343], Robotics 24/7[344], Robotics & Automation News[345], Machine Maker[346], Robotics Tomorrow[347].

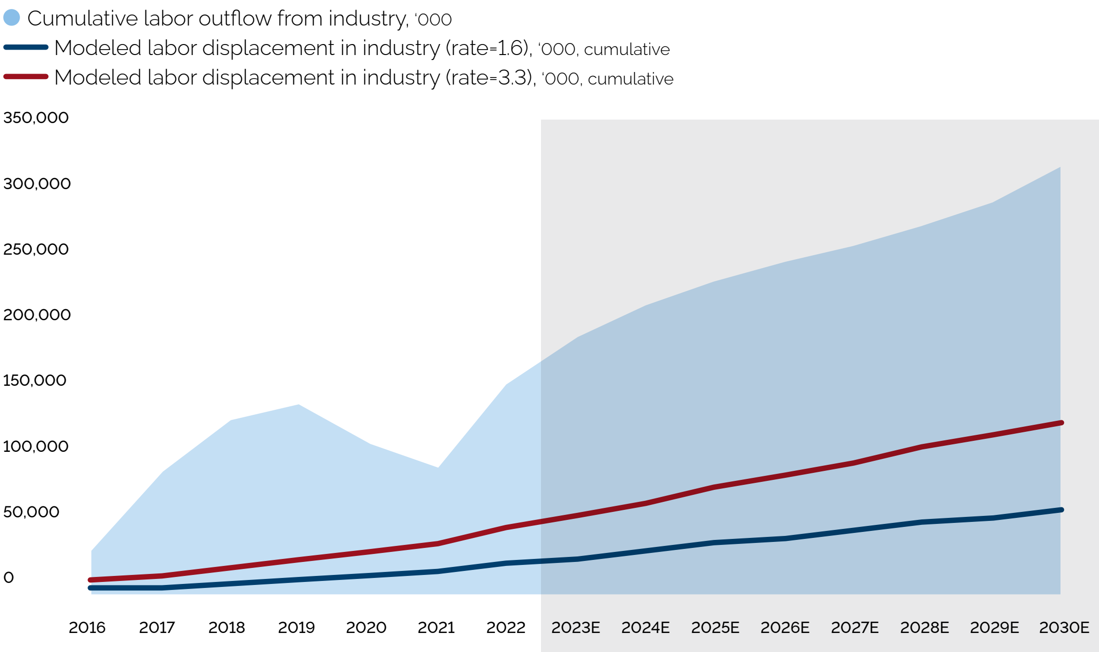
Note: 2020 and 2019 robot density data is shown for Turkey and Thailand respectively.

Robotization is not a direct threat to human employment, though. Research shows that the net impact of automation on labor depends on how the productivity and displacement effects stack up against each other[348]. While evidence collected in the developed world is rather gloomy, the prospects might be different for emerging markets.

For example, China has fewer robots than needed to substitute workers despite its leading position in robot installations. Based on global estimates that a new industrial robot displaces 3.3 workers on average[349], China is not adopting robots fast enough to make up for the losses due to labor force aging and workers transitioning to the services sector. Robots would replace 13 mln workers by 2030, less than the number of workers that the country's industrial sector had already lost from 2016 to 2022, and almost two and a half times less than the whole economy lost due to aging (30 mln since 2015[350]). Since quite a few emerging markets will face the same demographic challenges as China in the years to come, industrial automation may become a source of sustaining growth rather than a threat to employment.

Since quite a few emerging markets will face the same demographic challenges as China in the years to come, industrial automation may become a source of sustaining growth rather than a threat to employment.

Figure 2.50 Industrial automation and workforce outflow from industry in China



Data sources: National Bureau of Statistics of PRC[351], Statista[352], International Federation of Robotics[353], Oxford Economics[354], MIT News[355].

Note: According to a July 2023 paper by Oxford Economics, one industrial robot replaces 1.6 workers on average. This assumption is taken as a baseline scenario, while an earlier estimate by D. Acemoglu (3.3 workers on average) serves as a pessimistic scenario.

While robotization mostly impacts industrial sectors, automation has wider effects. Unskilled and low-skilled labor in the service sector can be affected by excessive automation and inappropriate technologies[x, 356] caused by increasing global competition and changing business models, heavily influenced by Big Tech. This may lead to automating out labor resources that are still abundant while delivering modest productivity gains. Thus, while many emerging markets have not been influenced by automation yet, now may be the perfect time to develop relevant regulation and bolster reskilling and upskilling initiatives at scale[357].

As for the more skilled service workers, emerging markets are facing the same problem as advanced ones. AI is quickly becoming a major work automation tool, with products based on large language models (LLM) like ChatGPT or Bing AI having hundreds of millions of daily active users and dozens of business use cases[358]. While the overall impact of LLMs on jobs is yet to be assessed, a recent ILO working paper implies that most jobs will be complemented, not substituted by AI[359].

In summary, technology's influence on emerging markets is evident, with digitalization and automation reshaping economic landscapes. The rapid rise in digital adoption, accelerated by the challenges of the COVID-19 pandemic, has bridged the divide between emerging and advanced markets. However, disparities in digitalization within emerging markets highlight the need for targeted strategies.

Automation offers opportunities for efficiency but poses challenges such as job displacement and upfront investment requirements. The varying levels of automation across sectors and regions emphasize the necessity for tailored policies. The impact of AI on skilled service workers introduces a new dimension requiring proactive measures.

As emerging markets navigate this evolving landscape, a holistic approach addressing digital infrastructure, workforce skills, and regulatory frameworks is crucial. Successfully managing technology's benefits and challenges will determine these markets' economic trajectories in the years ahead.

x Technologies designed for developed countries' local conditions and significantly less productive elsewhere in the world.

2.8. Heading for Disaster: Climate Change and Growth in Emerging Markets

Climate change has already led to a 1.1°C temperature increase from preindustrial levels, setting off a chain of increasingly devastating impacts. Anthropogenic activities have been the primary driver behind this temperature rise. While the world's nations have established national climate targets, these are insufficient to achieve the global 1.5°C goal necessary to avert the worst consequences. The emissions gap, i.e., the disparity between pledged emissions reductions and those needed to achieve the Paris Agreement goals, further exacerbates the situation, and there is a lack of a concrete global net-zero target and a consensus on phasing out fossil fuels, which are responsible for the majority of global emissions.

Developing countries, predominantly in Sub-Saharan Africa and South Asia, bear the brunt of these consequences, with an estimated 132 million people expected to be pushed into poverty due to climate change by 2030. This vulnerability is largely due to their geographic location and limited resources. To adapt to the adverse impacts of climate change and pursue sustainable development goals, these developing countries require substantial financial resources. General estimates indicate that $70 billion annually is already required for adaptation purposes. Still, by the end of the decade, this amount could quadruple, reaching a range of $280–500 billion by 2050.

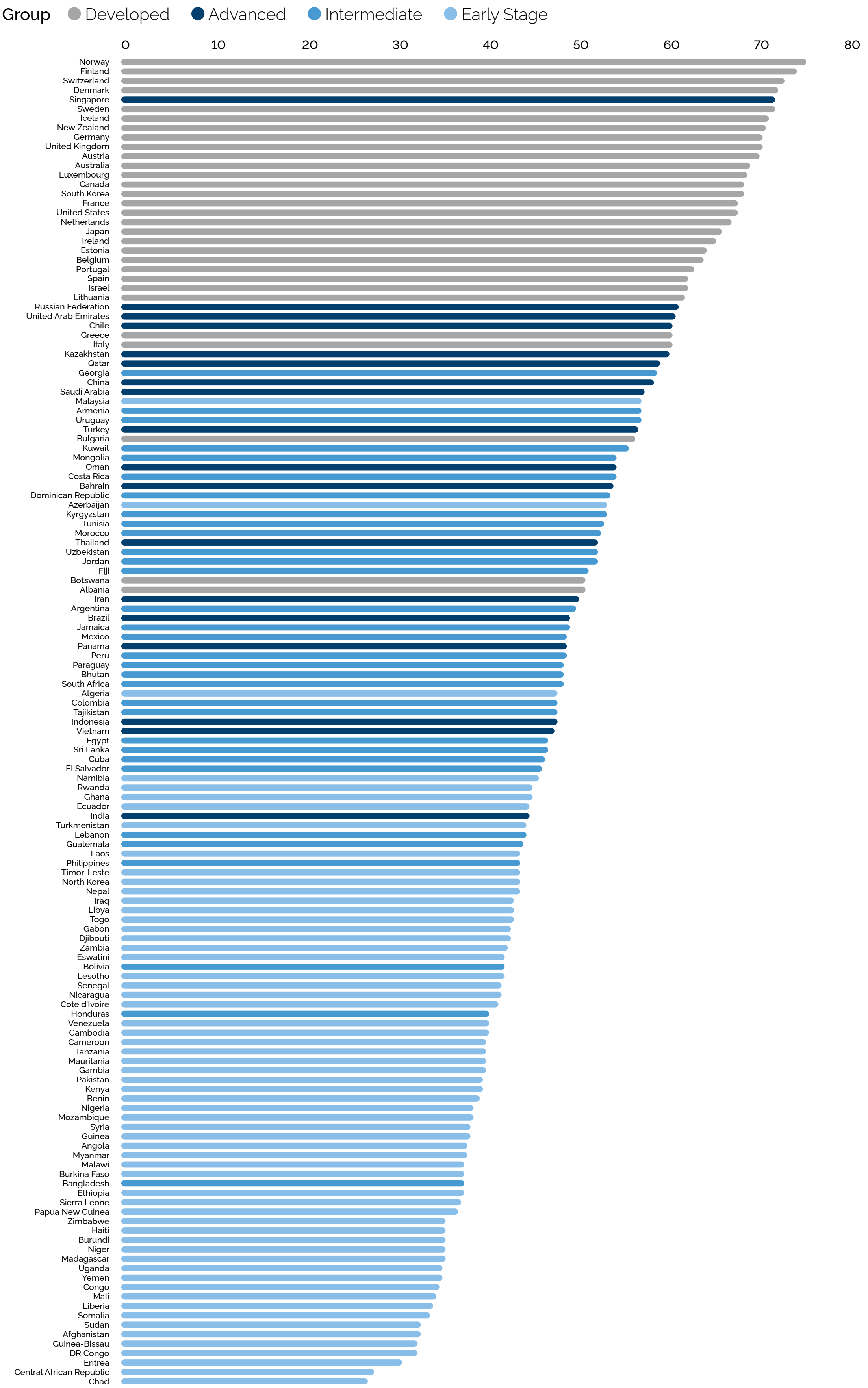
The economic dimension of climate change is contentious, as coal, peat, shale oil, and natural gas production has surged alongside renewable energy growth. Developing nations grapple with this transition, further complicated by border carbon adjustments imposed by major trade partners. Nevertheless, many developing countries aspire to achieve carbon neutrality by the mid-century. Many have launched carbon pricing schemes and adopted green technologies to curb emissions. Sustainable mobility and electric vehicles are gaining momentum, accompanied by various initiatives aimed at emissions reduction and removal. International cooperation and support are imperative in addressing the multifaceted challenges these countries face, as they need substantial financial resources to adapt to the adverse impacts of climate change and pursue sustainable development goals. With developing nations at the forefront of climate change's impacts and consequences, finding innovative strategies and providing financial resources is essential for achieving the global climate goals.

Climate change is increasingly affecting the planet in physical, political, economic, and security terms. At present, anthropogenic activities have already caused global temperatures to rise by 1.1°C compared to preindustrial levels, mostly due to emissions produced by the rapid growth of developed countries throughout the 20th century. Some of the consequences of this damage are already irreversible, while others are on the verge being so[360]. Arctic ice is melting at a rate of 12.2% per decade[361], precipitation patterns are changing all over the world, water stress is increasing, sea levels are rising, permafrost is thawing & threatening man-made infrastructure, and national climate targets are simply insufficient to achieve the global 1.5°C goal[362]. The emissions gap is making the situation even worse[363], as the world is still unable to reach an agreement neither on a concrete global net zero target nor on phasing out the fossil fuels responsible for the bulk of global emissions.

The Growth vs. Climate Dilemma in Emerging Markets

Developing countries can be particularly vulnerable to the consequences of climate change[364]. Of the 132 million people that are expected to be pushed into poverty due to climate change by 2030, the majority reside in developing countries of Sub-Saharan Africa and South Asia[365]. These states occupy all of the lowest positions in the ND-GAIN Country Index which assesses states' vulnerability to the physical risks posed by climate change, as well as their readiness to tackle them[366]. The damage comes not only in direct adverse impacts of extreme weather events and slow-onset productivity loss, but also in lost opportunities and shrinking development space under pressure of the transition towards low-carbon development.

Figure 2.51 Selected countries in the ND-GAIN country index



Source: University of Notre Dame[367].

Developing countries' vulnerability to climate change and low readiness to adapt to it is partly due to their geographic location in tropical and coastal regions, where rising temperatures make some territories uninhabitable or severely worsen living conditions. Another reason is economics: faced with more frequent and more dangerous natural anomalies and disasters, low-income countries have less resources to redirect to mitigate these effects. At the same time, their citizens, often living in rural areas or ill-equipped urban housing, remain far more affected by such events than people in the Global North. It is usually impossible for governments to conduct efficient and rapid reconstruction and compensate damages to those affected by a natural disaster, all of which can make the poor even poorer[368]. Studies indicate that in Latin America, GDP per capita negatively correlates with average temperatures, which may indicate that higher temperatures have adverse effects on income and wealth[369].

Climate Change and Economic Growth: Mutually Exclusive, Collectively Exhausting?

Climate change and growth in developing countries are interconnected in several key ways:

1. **Direct Physical Risks**. While extreme weather events bring immediate losses and can have unpredictably destructive effects on a state's economy, slow-onset events, including rising temperatures & sea levels, degradation of lands, and deforestation have longer-term repercussions. The latter may be easier to tackle in the sense that countries do have time to prepare and adapt in advance. However, not all are willing to do so since it does not promise immediate gains and usually diverges finance from more urgent socioeconomic challenges, which can undermine economic stability. Meanwhile, physical risks make developing countries increasingly vulnerable and can undermine growth: from destroyed infrastructure to waning crop yields and increased water stress, worsening climate conditions will affect economic efficiency and labor productivity, as well as human security.

2. **Transition Risks.** These typically accompany economic transformations. These have three closely related dimensions. First, transition to lower-carbon development requires significant public and private investment that would not have been allocated to climate mitigation or adaptation in a business-as-usual development model. Path dependencies in energy generation and access, urbanization, transport and industrial development will have to be avoided. In attempts to acquire green technologies and upscale green development, states may divert resources from other development issues, including those related to the rest of sustainability goals, like dealing with persistent hunger and high mortality rates while new solar and wind farms are installed amidst territories without internet access.

   Second, with the countries of the world progressing towards the 1.5°C goal at different paces, various forms of climate-related barriers are emerging which impede trade in carbon-intensive goods. These include border carbon adjustments (BCAs) already adopted by the EU, planned to take effect in the UK, and likely to be introduced in other countries. BCAs impose a direct carbon price on imported goods. Many jurisdictions are implementing or planning to introduce standards and other forms of regulation that will put carbon-intensive importers under stricter conditions. Since developing countries often do not have low-carbon industries and technologies, their exports (particularly if they are fossil fuel-dependent) may face trade discrimination as economic climate policy instruments extrapolate onto the international level.

   Finally, an uneven transition may cause rising inequality both on the state and interstate levels, result in social unrest, and threaten political stability, all of which in turn could cause countries to renege on their pledges, slow down, or abandon low-carbon development pathways altogether.

However, climate change is not incompatible with development:

1. **Developing Economies Can Grow While Avoiding Carbon Lock-in**. Some developing states still have an extremely underdeveloped energy infrastructure, including not only generation, but also transmission and distribution. This means that they can leapfrog all the way from coal to greener energy systems, avoiding decades of capital investment cycles into oil and gas. The same logic applies to non-energy technologies if they are provided by developed countries. Although it is hardly possible that most developing countries can become self-sufficient in low-carbon development, they have the advantage of being capable of starting rapid growth on a greener basis than their developed peers.

2. **Green Growth Can Become Self-reinforcing**. For instance, if renewable energy broadly becomes cheaper than fossil-generated energy, it will attract more investments and undergo faster growth. This is already becoming a reality, with some countries and regions singling out renewables coupled with green and blue hydrogen—a key to achieving carbon neutrality. Although the world remains primarily fossil-dominated, and renewable energy and especially hydrogen remain expensive for massive global implementation, in the longer term these will become key priorities for global energy.

3. **Green Goods and Services Can Provide New Sources of Competitive Power**. Developing countries will be able to gain from low-carbon technologies to produce competitive export goods in compliance with international customer- and state-side demand (examples are provided in this chapter of the report). Many developing countries, particularly in Asia, are already leading in key goods and components on the solar energy market and electric vehicles. Developing countries in the Middle East and Central Asia are projected to be among the first to start exporting green hydrogen and ammonia. It is in fact the developing world that is dominating when it comes to providing supply in the global voluntary carbon markets.

   This relationship between economic growth, major country-specific development issues, reducing emissions, and the need to pursue a balance between all of these things is widely discussed under the notion of **just transition**, or just energy transition. Developing economies are increasingly seeing the need for a transition to low-carbon development to be cognizant of workforce shifts, poverty reduction targets, the need for affordable energy access, suppressed demand, etc. A particularly difficult aspect of this transition is the role of fossil fuels—still the cheapest and most accessible source of energy in most developing countries and a major component of state budget revenue for many.

The economics of climate change is particularly complex when it comes to developing countries. One prominent example is the global energy transition. While global renewable energy production has increased threefold in 1971–2021, so has that of coal, peat, and shale oil (with 2022 taken into account), with natural gas having almost quadrupled over the same period[370]. Even in the most advanced regions, renewables (excluding hydropower) still only occupy a small portion of energy supply: 7.3% in North America[371] and 14.9% in Europe[372] (2020). However, developing markets are facing the imperative of an accelerated energy transition, pushed to become green before they become rich. Some major trade partners of developing countries are imposing border carbon adjustments, which, although designed to serve as an incentive, in fact leave even less to invest in the green transition.

This adds up to the issue of historical responsibility for GHG emissions and irreversible loss and damage, which are among the most contentious issues of international climate politics. Although initially the US and some European industrialized economies were the ones that caused GHG concentrations in the atmosphere to rise, their current growth is largely attributed to the developing world. For example, from 2000 to 2019, the US has cut emissions by 11.5%, and the EU by 1.5%. Meanwhile, in China their levels have grown by 178%, in India by 100%, in Vietnam by 234%, in Mali by 104%, and in Indonesia by 50% over the same period, with the trend relevant for almost all developing countries[373]. Moreover, in 2007, the cumulative emissions of developing countries surpassed those of their developed peers, and now account for two thirds of global emissions[374]. Therefore, while developing countries claim increasing amounts of climate finance needed for the low-carbon transition, developed economies insist that developing states need to pull their weight in global mitigation efforts.

> From 2000 to 2019, the US has cut GHG emissions by 11.5%, and the EU by 1.5%. Meanwhile, in China their levels have grown by 178%, in India by 100%, in Vietnam by 234%, in Mali by 104%, and in Indonesia by 50% over the same period, with the trend relevant for almost all developing countries.

Still, this is hardly possible without increased technological and financial assistance directed not only at the green transition, but also at solving the most urgent socioeconomic challenges such as food insecurity, extreme poverty, lack of energy access & connectivity, etc. As discussed in Chapter 2.2, this set of contradictions is deeply connected with how the multilateral climate regime functions and whether it can help developing countries grow and decarbonize at the same time.

Nevertheless, it would be wrong to claim that developing countries are far from the green transformation or are unwilling to make any steps on this path. Many of them are aiming to become carbon neutral by the middle of this century, and most are determined not to allow green transition and economic growth to contradict each other. Smaller developing economies are stepping up, with Colombia setting a net zero target by 2050, the Dominican Republic oriented towards driving economic transformation through green policies, Morocco venturing to decarbonize its key phosphate manufacturing sector, and Panama planning reforestation as a key mitigation priority[375].

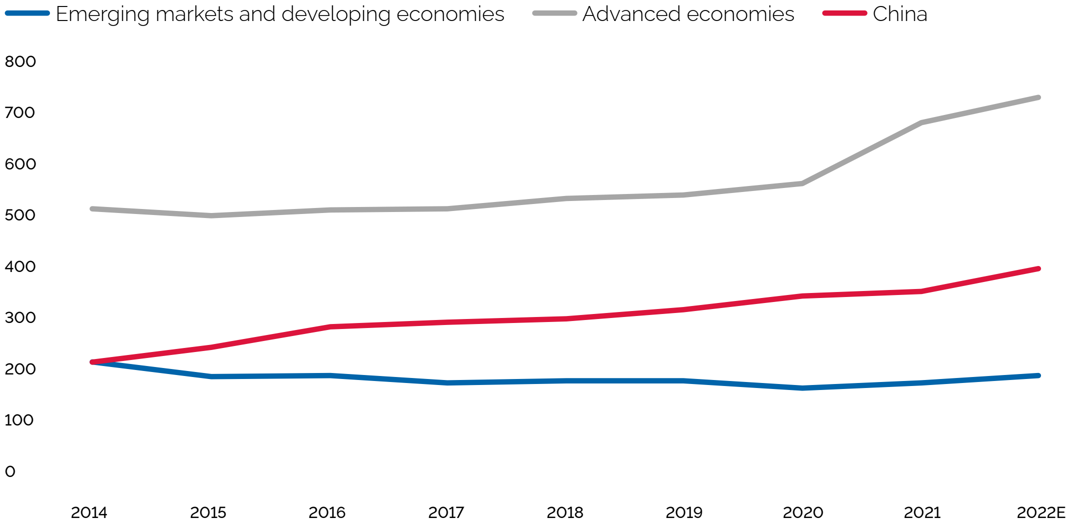
For larger economies, the challenge to marry growth with decarbonization is more challenging, but even the most complex of cases are looking for ways to cope. For South Africa, highly dependent on fossil energy, adding a significant amount of renewable energy to the mix would mean not only reducing dependence on coal, the least climate-friendly of fossil fuels, but also getting out of the country's prolonged energy crisis[376]. African climate policies in general are rated higher than the global average on robustness, although their viability is relatively low[377].

Some of the countries in question have already launched carbon pricing schemes, an advanced climate policy instrument meant to economically induce emissions reductions—and not only China[378]. India has announced a transition to a compliance-based crediting scheme. Vietnam is readying to implement an emissions trading system in 2025–2028[379], while Indonesia has already launched it in 2023 for the power sector (with plans to expand over the next decade[380]) and Mexico is trying it out in pilot mode[381]. Meanwhile, Argentina[382], South Africa[383], Columbia[384], Chile[385], Uruguay[386], and Mexico[387] all employ carbon taxes. Carbon pricing is also considered a prospective measure in Thailand, Brazil, Morocco, Senegal, Nigeria, Gabon, Botswana, Malaysia, and Pakistan[388].

Climate as Opportunity

The scope and scale of the climate transition necessary to prevent catastrophic implications for human wellbeing and preserve economic value is already changing markets & creating new ones, altering supply chains, and producing new champions. For emerging markets, addressing the transition means both finding the right toolkit and seizing the opportunities to leapfrog or ramp up their competitive power in the changing global business environment.

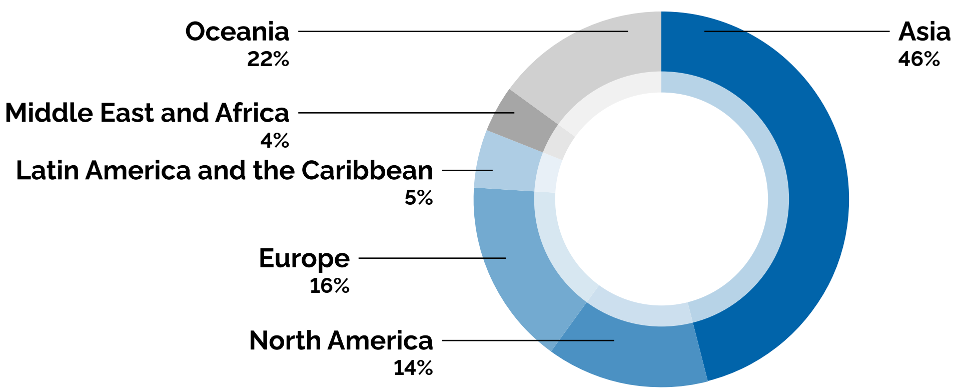
Figure 2.52 Clean energy investment by economy from 2014 to 2022 (estimates)



Source: IEA[389].

Green technology and renewable energy development is in progress in many developing states, both with the help of external actors and by their own means (Fig. 2.53). The Asia-Pacific region (without China) is estimated to add 360 GW of new renewable capacity over the period of 2022–2027. China itself is the world leader in these terms and is expected to widen its capacities by 1,070 GW during the same period. For India, these prospects stand at 145 GW, primarily comprised of solar power[390]. Government renewables financing and stimulating mechanisms are implemented in Brazil[391], Colombia[392], India[393], Indonesia[394], and a number of other countries, with the majority of global commitments to investments in renewable energy capacities now originating in Asia (Fig. 2.54).

Figure 2.53 Annual financial commitments to investments in renewable energy capacities by region, 2021 (% of global total)



Source: UNCTAD[395].

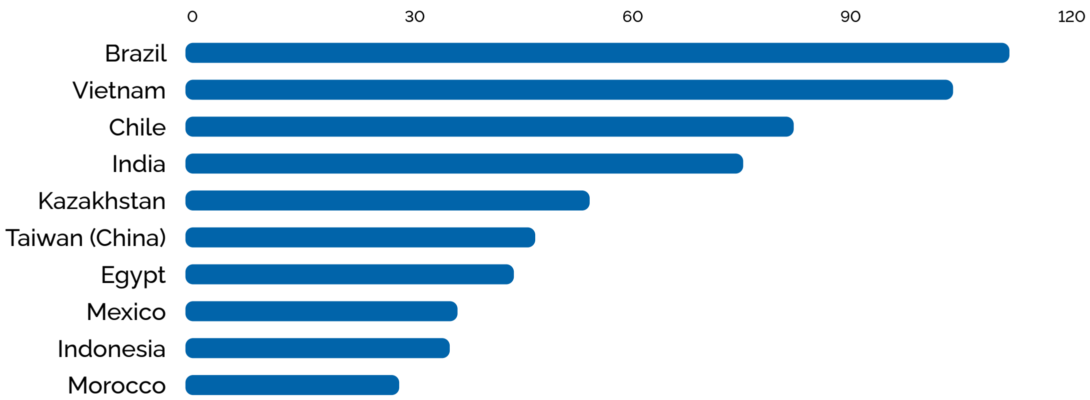
While states like China rely primarily on national government financing, others are increasing capacities by means of international investments, such as Brazil, Vietnam, Chile, and India (Fig. 2.55). Nigeria has committed to boosting domestic photovoltaic production and helping solve the problem of energy access by equipping 5 million homes with distributed solar generation capacities[396]. Liberia has pledged to achieve 30% electric power generation from renewables by 2030[397]. In Africa, the major wind energy producers are Egypt, Morocco, and South Africa, with Morocco's Tarfaya Wind Farm being the second largest wind power plant on the continent (the first is the Lake Turkana Wind Power Station located in Kenya)[398]. Egypt, the United Arab Emirates, China, and India host some of the largest solar parks in the world[399].

This indicates that developing countries are on their way to being equipped with large-scale projects and distributed power generation that allows them to avoid major spending on transmission infrastructure, but these projects are still in their early stages. Still, the majority of investments, with amounts several times larger than in the rest of the developing world altogether, fall on China (Fig. 2.56), while over 30 of the least developed, landlocked, and small island states do not have any large-scale investment projects in renewables (Fig. 2.57).

Decarbonization is underway not only in terms of energy production, but also in other carbon-intensive sectors. In India, Dalmia Cement announced plans to equip its manufacturing capacities with carbon capture[400], while Vietnam plans to construct a green hydrogen plant with large ammonia production capacities in the Ben Tre province[401]. Notably, though, most existing decarbonizing projects are based on foreign, primarily Western, technologies[402].

Sustainable mobility is becoming yet another priority. Thailand is investing in national manufacturing of batteries of electric vehicles (EVs)[403], India is eliminating barriers for their adoption and support for manufacturing[404], and Indonesia is subsidizing electric motorcycles and their domestic production[405]. With a strong focus on biofuels as well as R&D related to increasing vehicles' energy efficiency and performance, Brazil is estimated to be a frontrunner in this area on a comparable level with the EU, despite the absence of an EV strategy[406]. China already ranks above the world average, with EVs accounting for 5.8% of car sales[407]. EV targets and legislation have been adopted in 9 African and 8 Latin American countries, with many more having ambitions on their numbers for the middle- and long-terms, and some, such as Argentina, are planning a complete ban on new ICE car sales[408].

Figure 2.54 Top 10 developing economies receiving international investment in renewable energy projects, 2022, USD billion



Source: UNCTAD[409].

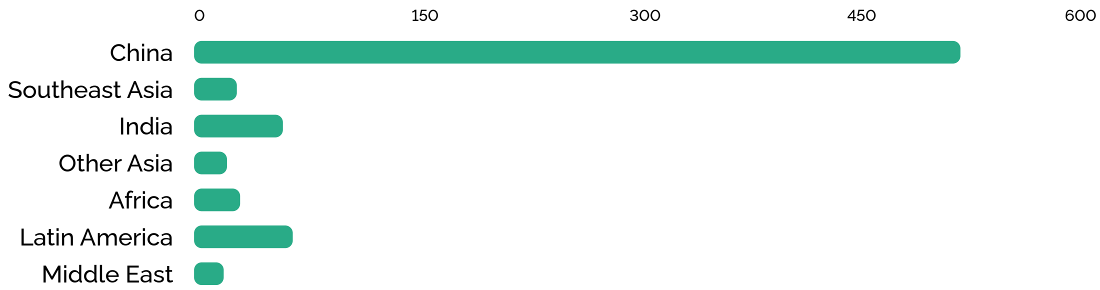
While electric transport and low-carbon fuels are common, many states are also in need of developed public transport systems which reduce the need to use private vehicles (thus reducing emissions per passenger) and which can be decarbonized by electrification, hydrogen, or biofuels. Such cases are relevant for Pakistan, which is implementing a Bus Rapid Transport system using biomethane to power the fleet. EVs both for public and private transportation are also one of the central pieces in climate strategies of Cambodia, which is aiming to build an e-mobility ecosystem, as well as Antigua and Barbuda, although that country is implementing it primarily with foreign assistance[410]. In Thailand, Bangkok's urban e-bus program is set to be among the first to make use of the newly established Paris Agreement carbon market, generating carbon credits that will be used against Switzerland's national emissions reduction target[411].

The technological and production shifts needed for decarbonization will suppress some markets while helping others grow and completely new ones emerge. The beneficiaries are renewables and energy efficiency, sustainable agriculture, carbon capture & storage (CCS), sustainable agriculture, water & waste management, and green infrastructure.

Renewable energy, storage, and e-mobility are some of the fastest growing markets stemming from the climate imperative. Revenues in the renewable energy market are set to almost double from $1.2 tn in 2023 to 2 tn in 2030[412]. In 2021, China's piece of the global renewables market share was 75% for PV modules, 85% for cells, 97% for wafers, and 79% for silicon (capacity)[413]. In lithium-ion batteries—a crucial element of the energy transitions—China manufactures 75% of all cells and 90% of anodes and electrolytes[414].

The e-mobility market is projected to grow from $385 bn in 2023 to $1.8 tn in 2030 with a growth rate of 24.6% annually[415]. Again, China is leading both as a producer and a market for EVs, with 35% of global exports and 60% of sales[416]. BYD, a Chinese EV producer, occupies a fifth of the global market share and outruns Tesla[417].

Figure 2.55 Clean energy investments in emerging markets and developing economies, 2022, USD billion



Source: IEA[418].

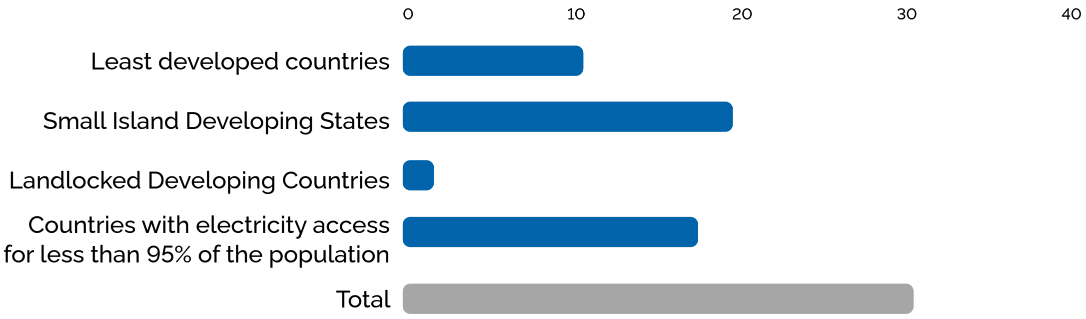
Other Asian economies like Malaysia and Vietnam are also reaping the renewable energy opportunity, having photovoltaics account for 10% and 5% of their external trade[419]. Indonesian President Joko Widodo announced in 2023 that his country aims to become a top three global producer of batteries[420]. Vietnam's VinFast is aiming to build an EV factory in North Carolina (USA) for the amount of $4 bn. The plant is set to be constructed by 2025 and will produce 150,000 cars per year[421]. In carbon capture, a relatively new market, Asia Pacific alone is set to provide 55% of volumes, with 3 Gt of annual abatement potential in 2050[422].

Another area of opportunity is green hydrogen—and developing markets are keeping up. Out of 41 hydrogen strategies existing to date (September 2023), 18 are adopted in developing countries and 3 more are planned[423]. Apart from such major players as China and India, aiming to produce this low-carbon energy carrier are the Philippines, Brazil, Panama, Kenya, Algeria, Ecuador, Uruguay, and a number of other countries. Even current net energy importers such as Morocco, Namibia, or Chile are aiming to become exporters of hydrogen goods. The latter is even aiming to become one of the top exporters in the world[424], which is yet another dimension of how developing countries merge green transition with economic benefits. Even without a strategy, some are heading to a hydrogen economy, e.g., Oman with its vast green hydrogen development entity and plans to construct the largest production plant in the world[425].

Financing the Green Transition

Although the landscape of the green transition in developing countries is not as gloomy as it is often described, the process is unsystematic and lacks the complexity and scope required to achieve long-term climate targets. The reason lies in shortages of green finance, with states unable to invest the necessary amounts themselves and foreign support not covering this gap. Before COP26 in 2021, 136 out of 168 nationally determined contributions (NDCs) to the Paris Agreement were at least partly conditional—that is, the defined goals were set to be implemented only if certain international support was provided[426]. Before Paris, developing countries had not been obliged to submit regular emissions and policy reports, and even after COP21 some countries are still not doing so. For such states, the conjunction of climate policy with other issue-areas and their relative prioritization are particularly important[427], especially when it comes to sustainable development goals. Nevertheless, their climate targets can not only be fulfilled, but also upgraded without damage to economic development if they try to avoid carbon lock-in, starting to implement green technologies instead of investing in energy- and carbon-intensive ones. This, however, requires joint efforts: from these governments (in the form of stricter legislation and larger internal investments) and from the international community (with technological and financial assistance). Currently this seems to be the optimal way of converging development with climate change mitigation.

Figure 2.56 Number of countries without a large international investment project in renewables since 2015, depending on category, 2022



Source: UNCTAD[428].

At present, however, the development agenda is not always aligned with adaptation to climate change, although the latter is naturally cross-sectoral[429]. Meanwhile, climate change brings increasing economic losses, which can reach up to 200% of GDP for some of the Small Island Developing States (SIDS) due to severe natural disasters, with SIDS and low-income countries losing 17% of their GDP on average because of these events—a number 5.7 times higher than for high-income countries[430]. The healthcare sector alone should suffer losses of $2–4 billion per year globally, with 250,000 additional deaths a year—most of which will take place in developing states with weak health infrastructure[431]. General estimates indicate that for developing countries, $70 billion annually is already required for adaptation purposes, while by the end of the decade this sum can quadruple and reach $280–500 billion by 2050[432]. Africa alone will require $7–15 billion by 2030, while by 2050 the continent's annual climate change losses will amount to no less than $50 billion[433]. For comparison, current adaptation finance is 4 times less than required, with only 21% of overall climate finance flowing in the developing regions. Additional amount ($1.8 trillion) is needed for early warning systems, which, if put in place, will help avoid $7.1 trillion of losses as well as preserve socioeconomic welfare[434].

A few solutions that are currently being implemented are nature-based and with the potential to protect and restore ecosystems, such as those in forestry, agriculture, water management, and more[435]. However, their scope is far wider and also includes changing lifestyles and economic activities on local levels. Although such tendencies are not ubiquitous, they emerge in very different parts of the planet: for instance, changing rainfall patterns in Ghana have caused some producers to change the crops they specialize in, while on the other side of the world, a group of Vietnamese farmers have switched from depending on seasonal gathering aquatic resources in coastal mudflats—a source of income that was becoming increasingly unstable—to year-round beekeeping. At the same time, island states such as the Maldives and Sri Lanka are struggling with water management due to diminishing precipitation and rising temperatures[436].

At the same time, over a fifth of states' NDCs do not have adaptation components at all, with many others unclear on how to finance adaptation[437]. Some developing states that are most likely to be affected by climate change have no adaptation plans or strategies—these include Venezuela, Bolivia, Chad, Guinea, Somalia, Angola, Botswana, Iran, Papua New Guinea, and others[438]. Adaptation policies focus more on risk management than development planning, which is more effective in long-term mitigation of economic and other kinds of losses[439].

The intricate relationship between climate change and economic growth in developing countries creates both uncertainty for their future development trajectories and new avenues for growth. The current pathway of the climate system, marked by a 1.1°C rise in global temperatures, irreversible ecological damage, and geopolitical inertia, demands immediate and robust action. Developing nations, particularly those in Sub-Saharan Africa and South Asia, bear the brunt of climate-induced vulnerabilities, grappling with the consequences of extreme weather events and climate-induced productivity loss. However, developing economies can also leverage the opportunity to leapfrog into greener energy systems, avoiding carbon lock-in and fostering self-reinforcing green growth. Initiatives in renewable energy, carbon pricing, and sustainable mobility, though nascent, demonstrate a willingness to align economic aspirations with environmental stewardship. That being said, substantial barriers, including financial shortfalls and the need for technological support, must be addressed collaboratively to achieve meaningful progress.

Appendix

EMD Index Methodology

The EMD Index 2024 covered 114 countries across 42 parameters. It did not include mature economies, as they were not the focus of the study. Additionally, it omitted several smaller states (e.g., Pacific Islands and Caribbean states) due to a lack of data across a significant number of parameters.

In this study, "China" refers to Greater China, encompassing the People's Republic of China, Taiwan, Hong Kong, and Macao. Data for all four of these economies were consolidated, either through addition (e.g., population numbers or trade volume) or by recalculating proportions (e.g., debt-to-GDP ratio recalculated as the sum of Greater China's debt to the sum of Greater China's GDP).

Each parameter was assigned equal weighting. Initially, data for each parameter for each country was converted from the original range to the [0,1] range. Subsequently, this indexed data was summed up to derive seven subindexes and the final index. Finally, the resulting sum of the 42 parameters was adjusted again to fit the [0,100] range.

For parameters that positively correlate with economic maturity, direct dependence was applied. For instance, the larger the GDP size, the higher the index. Conversely, for parameters that negatively correlate with economic maturity, opposite direction dependence was applied. For instance, the higher the unemployment rate, the lower the index.

Lastly, for parameters with strictly positive values, scaling was done from 0 to the maximum value. For example, GDP size is strictly positive. Thus, if the largest GDP value in the set was 500, and the smallest value was 200, after rescaling, the country with the largest value would be assigned 1, and the country with the lowest value would be assigned 0.4.

Conversely, some parameters had both positive and negative values. In this case, scaling was done from the minimum to the maximum. For example, FDI inflow could be both positive and negative. If countries in the set had a range of FDI inflow values from 500 to -200, after scaling, 500 would become 1, and -200 would become 0.

For details on which approach was applied to each parameter, refer to the table below.

Table A.1 Methodological Approach to Parameters

	DIRECT DEPENDENCE	OPPOSITE DEPENDENCE
Scaled from [0, max] range to [0,1] range	— Natural resources endowment — Investment in infrastructure & construction — GDP size — Access to capital — Total population — Fertility rate — Middle class — Consumption — Population with advanced education — Literacy rate — Life expectancy — Social protection coverage — Urbanization — Basic infrastructure — Digital infrastructure — Financial infrastructure — Industrial infrastructure — Logistical infrastructure — Size of manufacturing sector — International trade — Research & Development inputs — Order and security — Regulatory enforcement — Financial system development	— Median age of population — Unemployment rate — Poverty — Ease of entrepreneurship — Economic complexity — Informal sector size — Tax burden — Dependence on international aid — Susceptibility to armed conflicts in the region or domestically — External debt sustainability — Vulnerability to climate change related disasters and mitigation readiness — Social inequality — National currency volatility — Vulnerability to global commodities' price fluctuations
Scaled from [min, max] range to [0,1] range	— Foreign direct investment — GDP growth rate — Migration	— Economic structure transition from agriculture to industry or services

For each parameter, we utilized the latest data available as of October 2023. In cases where data was missing for certain countries, we supplemented it based on national statistics from the respective countries. To prevent bias and ensure the integrity of our analysis, we refrained from employing complex indexes, such as the Global Innovation Index, that rely on the same underlying databases as ours. The Emerging Markets Development (EMD) Index exclusively incorporates indexes based on unique datasets not replicated elsewhere, such as logistics performance, climate risk, financial development, conflicts, regulatory, order and security, and GINI indexes.

However, it is essential to acknowledge several limitations associated with this methodology. Firstly, our approach heavily depends on the reliability of underlying data sources. While we utilized trusted entities such as the World Bank, IMF, and UN agencies, it is crucial to note that outdated or biased data in these databases, stemming from methodological nuances, remains beyond our capacity to identify or rectify.

Secondly, due to the comprehensive geographical scope of our study, we had to forego certain useful data sources with missing information for a substantial number of countries in our list. For instance, we excluded PISA scores (unavailable for most African countries), World Bank entrepreneurship database data (missing data for over 50 countries in our dataset), and market capitalization and creative production or trade data (unavailable for most early-stage emerging markets). Additionally, we considered, but ultimately excluded parameters such as Total Factor Productivity, central government debt, and tax revenues to GDP ratio. These parameters are more suited for the dynamic analysis of a single country over time (e.g., the trend in Total Factor Productivity change for a particular country over a decade) rather than cross-country comparisons for a specific year.

Table A.2 Data sources for EMD index parameters

SUBINDEX	PARAMETER	UNDERLYING DATA	SOURCE	METHODOLOGICAL NOTES
Capital	Natural resources endowment	Total natural resources rents (% of GDP)	WDI (World Development Indicators), World Bank[440]	
	Investment in infrastructure & construction	Gross fixed capital formation (constant 2015 US$)	WDI, World Bank	
	Foreign direct investment	Foreign direct investment, net inflows (BoP, current US$)	WDI, World Bank	
	GDP growth rate	GDP growth (annual %)	WDI, World Bank	Average growth rate for the past 6 years, since 2016 index data.
	GDP size	GDP, PPP (constant 2017 international $)	WDI, World Bank	
	Access to capital	Domestic credit to private sector (% of GDP)	WDI, World Bank	
Population	Total population	Total population UN	UN Population Division Data[441]	
	Median age of population	Median age UN	UN Population Division Data	
	Fertility rate	Fertility rate, total (births per woman)	UN Population Division Data	
	Migration	Migrant stock to population ratio	UN Population Division Data	
	Middle class	Middle class, % population	Poverty Calculator, World Bank[442]	Middle class defined as those spending from $10 to $50 per day.
	Consumption	Households and NPISHs final consumption expenditure (% of GDP)	WDI, World Bank	

SUBINDEX	PARAMETER	UNDERLYING DATA	SOURCE	METHODOLOGICAL NOTES
Labor	Unemployment rate	Unemployment, total (% of total labor force) (modeled ILO estimate)	ILOSTAT[443]	
	Population with advanced education	Educational attainment, at least Bachelor's or equivalent, population 25+, total (%) (cumulative)	WDI, World Bank	
	Literacy rate	Literacy rate, youth total (% of people ages 15–24)	WDI, World Bank	
	Life expectancy	Life expectancy at birth, total (years)	WDI, World Bank	
	Poverty	Poverty headcount ratio at $2.15 a day (2017 PPP) (% of population)	Poverty Calculator, World Bank	The lowest, most severe poverty threshold officially used by the World Bank.
	Social protection coverage	Coverage of social protection and labor programs (% of population)	WDI, World Bank	WDI has several similar indicators on social protection coverage. We chose this one because it was the most complete, and augmented dataset using national statistics.

SUBINDEX	PARAMETER	UNDERLYING DATA	SOURCE	METHODOLOGICAL NOTES
Infrastructure	Basic infrastructure	Access to electricity (% of population)	WDI, World Bank	Calculated as average between the two.
		People using at least basic sanitation services (% of population)	WDI, World Bank	
	Urbanization	Urban population (% of total population)	UN Population Division Data	
	Digital infrastructure	Individuals using the Internet (% of population)	WDI, World Bank	Calculated as average between the two.
		Mobile cellular subscriptions	WDI, World Bank	
	Financial infrastructure	Account ownership at a financial institution or with a mobile-money-service provider (% of population ages 15+)	WDI, World Bank	
	Industrial infrastructure	Air transport, registered carrier departures worldwide	WDI, World Bank	First, each of three parameters was indexed to [0,1]. Next, the industrial infrastructure index was calculated as an average between present values. I.e., if a country is landlocked, only the average between air and rail transport was taken.
		Container port traffic (TEU: 20 foot equivalent units)	WDI, World Bank	
		Rail lines (total route-km)	WDI, World Bank	
	Logistical infrastructure	Logistics performance index: Overall (1=low to 5=high)	Logistics Performance Index, World Bank[444]	

SUBINDEX	PARAMETER	UNDERLYING DATA	SOURCE	METHODOLOGICAL NOTES
Economic Structure	Economic complexity	Economic Complexity country ranking for 2021	Harvard Growth Lab[445]	
	Size of manufacturing sector	Medium and high-tech manufacturing value added (% manufacturing value added)	WDI, World Bank	
	International trade	Trade volume, constant 2015 US$	WDI, World Bank	
	Research & Development inputs	Patent applications, both res and non-res	WDI, World Bank	Each of the two parameters was separately indexed first, and then the average between the two was calculated.
		Research and development expenditure (% of GDP)	WDI, World Bank	
	Informal sector size	Informal employment, % labor force	ILOSTAT	
	Economic structure transition from agriculture to industry or services	Employed in agriculture, % total labor force	ILOSTAT	Calculated as the average decline in employment in agriculture as % of total labor force over the past 10 years.
Institutions	Order and Security	Order and Security Subindex, Rule of Law Index 2023	World Justice Project[446]	
	Regulatory Enforcement	Regulatory Enforcement Subindex, Rule of Law Index 2023	World Justice Project	
	Ease of entrepreneurship	Cost of business start-up procedures (% of GNI per capita)	WDI, World Bank	
	Dependence on international aid	Aid/GDP	IMF[447]	
	Financial system development	fin dev in	IMF	
	Tax burden	Tax Burden subindex of 2023 Economic Freedom index	The heritage Foundation[448]	

SUBINDEX	PARAMETER	UNDERLYING DATA	SOURCE	METHODOLOGICAL NOTES
Risks	Vulnerability to climate change related disasters and mitigation readiness	Climate-driven INFORM Risk Indicator	IMF Climate data[449]	
	Susceptibility to armed conflicts in the region or domestically	Number of conflicts for the past three years. Included event types: battles, explosions/ remote violence, violence against civilians, mob violence.	ACLED[450]	Types of events present in the database, but excluded from our analysis: protests, violent demonstrations. These events are domestic issues of the countries and do not belong to external risks analyzed here.
	External debt sustainability	Present value of external debt (% of GNI)	WDI, World Bank	
	Social inequality	Gini index	WDI, World Bank	
	National currency volatility	Spread of national currency to USD FX rate change calculated over the past 10 year	IMF	
	Vulnerability to global commodities' price fluctuations	Natural gas rents (% of GDP)	WDI, World Bank	Calculated as the sum of the two.
		Oil rents (% of GDP)	WDI, World Bank	

Additional charts & tables

Table A.3 EMD Index 2024, full country list with subindexes composition

COUNTRY	RANKING	SUBINDEXES							TOTAL INDEX
		CAPITAL	DEMOGRAPHY	SOCIAL SYSTEMS	ECONOMIC STRUCTURE	INFRASTRUCTURE	INSTITUTIONS	RISKS	
China	1	15	15	12	15	15	13	14	100
Singapore	2	6	8	15	14	15	15	15	87
Malaysia	3	5	9	13	10	13	14	14	78
United Arab Emirates	4	4	6	15	9	14	14	15	77
Russia	5	6	10	14	8	14	13	13	78
Thailand	6	5	8	14	9	13	13	14	75
India	7	7	13	11	8	11	12	13	75
Saudi Arabia	8	5	7	14	8	13	14	13	74
Chile	9	5	9	14	7	13	13	14	73
Türkiye	10	4	9	13	9	12	12	13	72
Vietnam	11	5	9	12	8	10	11	14	70
Qatar	12	4	5	13	8	13	14	14	70
Kazakhstan	13	3	9	13	7	11	13	14	70
Bahrain	14	3	5	14	6	13	14	14	70
Indonesia	15	4	10	12	7	10	12	13	69
Brazil	16	5	9	12	8	12	12	12	71
Panama	17	4	9	13	4	11	12	14	67
Oman	18	3	6	13	7	13	14	13	69
Iran	19	5	8	12	7	12	12	12	69
Philippines	20	4	9	13	8	10	11	13	67
Kuwait	21	4	5	13	7	13	14	13	68
Uruguay	22	3	8	13	6	12	12	14	68
Mauritius	23	3	8	13	5	11	11	14	66
Costa Rica	24	3	8	13	5	12	12	14	67
Mexico	25	4	9	12	8	11	11	12	66
Jordan	26	3	10	12	6	11	10	13	66
Bolivia	27	3	10	14	4	10	11	13	65
Georgia	28	4	6	13	6	11	11	13	64
Egypt	29	4	8	12	7	9	11	13	63
Paraguay	30	3	9	13	5	10	11	14	65
Argentina	31	3	9	13	6	12	11	12	66
El Salvador	32	3	8	13	6	10	10	13	64
Kyrgyzstan	33	3	7	13	6	9	11	14	62
Peru	34	3	8	13	3	11	11	13	64
Morocco	35	4	7	12	7	10	10	14	63
Armenia	36	4	5	13	5	10	11	14	62
Tunisia	37	3	8	11	7	10	10	14	63
Uzbekistan	38	4	7	12	5	9	12	13	61
Dominican Republic	39	3	8	12	5	10	11	13	63
Tajikistan	40	3	8	12	4	8	11	13	60
Mongolia	41	3	8	14	3	12	10	13	63

COUNTRY	RANKING	SUBINDEXES CAPITAL	DEMOGRAPHY	SOCIAL SYSTEMS	ECONOMIC STRUCTURE	INFRASTRUCTURE	INSTITUTIONS	RISKS	TOTAL INDEX
Guatemala	42	3	8	12	5	9	11	13	60
Botswana	43	3	8	10	5	11	12	13	62
Lebanon	44	3	7	13	5	10	11	12	61
Colombia	45	3	8	11	6	12	11	12	63
Fiji	46	4	6	12	2	8	11	15	58
Jamaica	47	3	7	11	5	10	12	13	61
Honduras	48	3	8	11	5	9	10	13	60
Sri Lanka	49	3	6	12	5	10	11	13	60
Bhutan	50	3	9	10	2	9	11	14	59
Cuba	51	2	4	13	5	8	11	14	57
Bangladesh	52	4	7	11	4	8	10	13	58
South Africa	53	4	7	10	5	12	12	12	62
Nepal	54	4	8	10	3	8	11	14	58
Azerbaijan	55	3	7	13	4	10	12	12	59
Algeria	56	3	8	10	4	10	11	14	60
Iraq	57	4	10	11	4	9	10	11	59
Namibia	58	3	8	10	5	9	12	12	59
Ecuador	59	3	9	12	3	10	10	13	60
Senegal	60	3	9	10	6	8	9	13	58
Turkmenistan	61	3	6	10	5	9	11	14	57
Laos	62	3	7	10	4	8	11	13	56
Nicaragua	63	3	8	12	3	8	9	13	57
Gabon	64	2	10	11	4	10	10	13	59
Cote d'Ivoire	65	3	9	10	2	9	11	13	57
Cambodia	66	5	7	10	5	8	8	13	56
Ghana	67	3	8	11	3	9	11	13	57
Rwanda	68	3	8	8	5	7	11	13	55
Benin	69	3	9	9	3	7	11	14	56
Pakistan	70	3	8	10	4	7	10	13	55
Togo	71	3	8	9	3	7	11	13	54
Kenya	72	3	8	9	5	8	10	13	56
Eswatini	73	3	7	10	4	8	11	13	55
Tanzania	74	3	9	9	4	7	10	13	54
Mauritania	75	3	9	10	2	7	10	13	54
Sierra Leone	76	2	8	9	3	6	10	13	52
Guinea	77	3	8	9	2	6	10	14	52
Uganda	78	3	9	9	4	6	10	13	53
Nigeria	79	3	10	9	3	8	10	12	54
Burkina Faso	80	3	9	9	3	6	10	12	52
Gambia	81	3	9	9	3	7	10	13	53
Ethiopia	82	3	8	9	4	6	9	12	51
Niger	83	3	10	8	2	4	10	13	50
Burundi	84	3	9	8	1	4	11	13	49
Eritrea	85	4	7	9	2	5	10	14	49

COUNTRY	RANKING	SUBINDEXES							TOTAL INDEX
		CAPITAL	DEMOGRAPHY	SOCIAL SYSTEMS	ECONOMIC STRUCTURE	INFRASTRUCTURE	INSTITUTIONS	RISKS	
Cameroon	86	3	9	9	3	8	9	13	53
Malawi	87	2	8	8	3	5	10	13	50
Libya	88	3	6	10	4	10	10	10	55
Mali	89	3	10	8	2	8	9	12	53
Myanmar	90	3	6	11	4	8	9	11	52
Lesotho	91	2	7	9	2	7	11	13	51
Zambia	92	3	8	8	3	7	10	11	51
Liberia	93	2	8	8	2	6	11	13	50
Timor-Leste	94	2	7	10	2	6	11	11	49
Venezuela	95	2	5	12	4	11	7	13	54
Syria	96	2	10	9	3	8	9	11	52
Papua New Guinea	97	3	7	8	3	4	10	12	47
DR Congo	98	3	10	8	3	5	9	11	49
Guinea-Bissau	99	3	8	8	2	7	9	13	49
Madagascar	100	3	8	7	2	5	10	12	48
North Korea	101	2	5	10	2	5	8	14	46
Angola	102	2	10	9	1	7	11	10	49
Djibouti	103	3	7	8	1	8	10	12	48
Zimbabwe	104	2	8	9	3	7	8	12	48
Chad	105	2	10	7	2	4	8	12	45
Sudan	106	2	8	8	2	6	10	10	46
Yemen	107	2	8	8	2	6	10	11	45
Haiti	108	2	7	8	2	7	8	13	45
Congo	109	2	8	7	1	7	9	10	46
Central African Republic	110	2	7	6	2	4	9	12	42
Mozambique	111	3	8	7	3	6	6	11	45
Somalia	112	3	10	6	2	6	7	11	44
Afghanistan	113	1	8	7	2	5	9	9	42
South Sudan	114	0	8	5	1	2	9	10	36

Figure A.1 EMD Index 2024, full country list

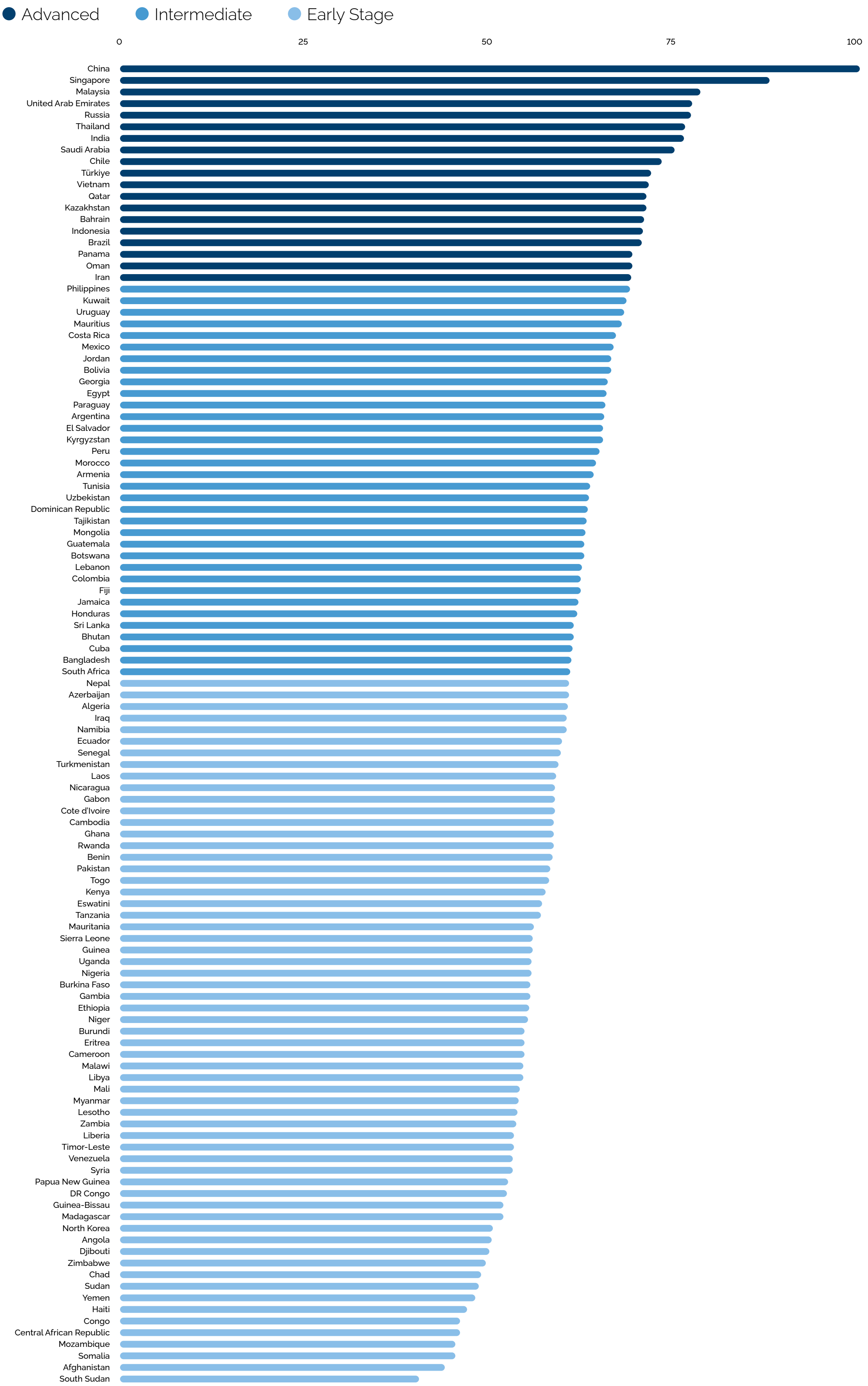
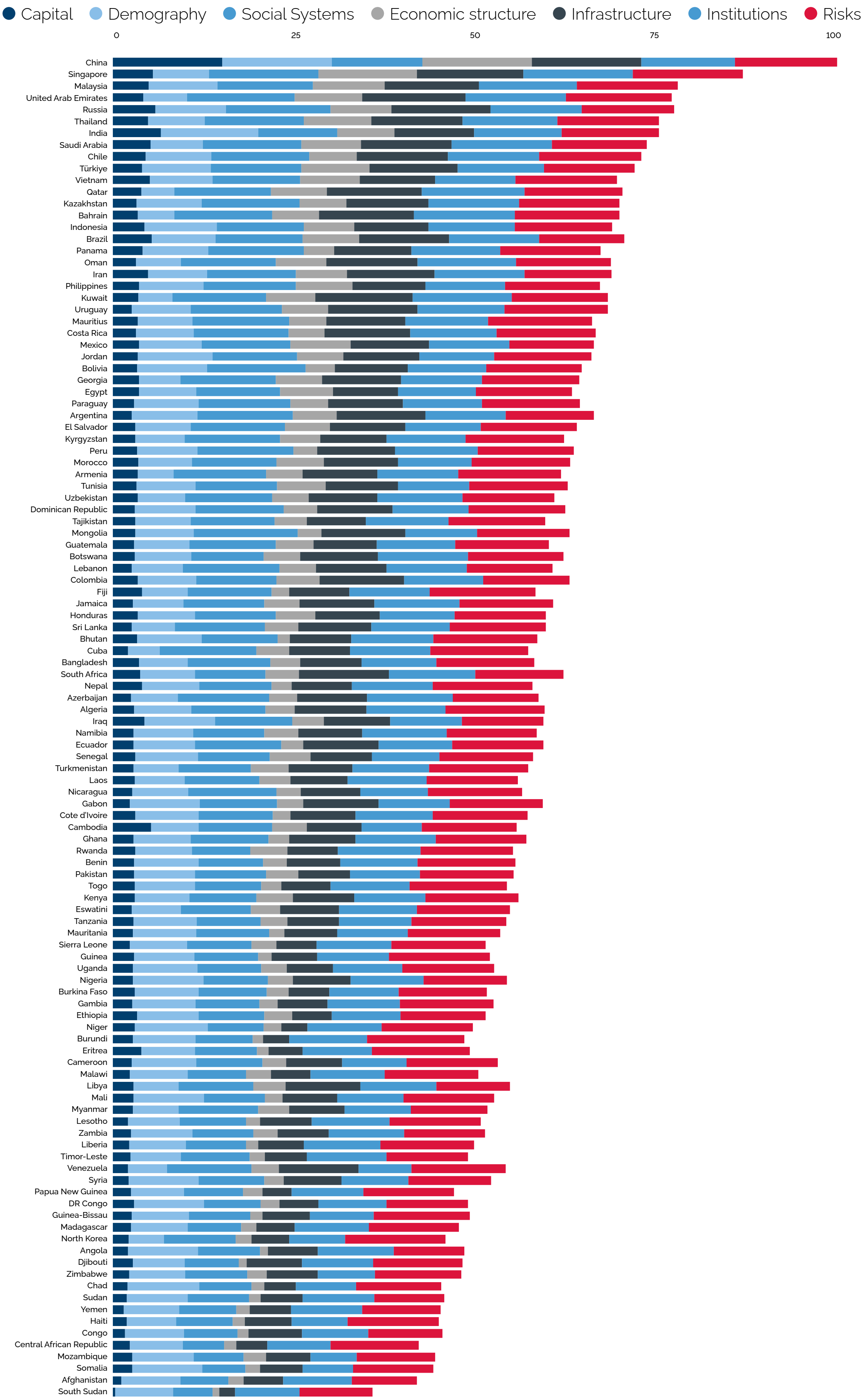


Figure A.2 EMD Index 2024, full country list with subindexes composition



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