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From Tailwinds to Headwinds: Emerging and Developing Economies in the Twenty-First Century

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Abstract

The first quarter of the twenty-first century has been transformative for emerging market and developing economies (EMDEs). These economies now account for about 45 percent of global GDP, up from about 25 percent in 2000, a trend driven by robust collective growth in the three largest EMDEs—China, India, and Brazil (the EM3). Collectively, EMDEs have contributed about 60 percent of annual global growth since 2000, on average, double the share during the 1990s. Their ascendance was powered by swift global trade and financial integration, especially during the first decade of the century. Interdependence among these economies has also increased markedly. Today, nearly half of goods exports from EMDEs go to other EMDEs, compared to one-quarter in 2000. As cross-border linkages have strengthened, business cycles among EMDEs and between EMDEs and advanced economies have become more synchronized, and a distinct EMDE business cycle has emerged. Cross-border business cycle spillovers from the EM3 to other EMDEs are sizable, at about half of the magnitude of spillovers from the largest advanced economies (the United States, the euro area, and Japan). Yet EMDEs confront a host of headwinds at the turn of the second quarter of the century. Progress implementing structural reforms in many of these economies has stalled. Globally, protectionist measures and geopolitical fragmentation have risen sharply. High debt burdens, demographic shifts, and the rising costs of climate change weigh on economic prospects. A successful policy approach to accelerate growth and development should focus on boosting investment and productivity, navigating a difficult external environment, and enhancing macroeconomic stability.

Keywords

economic growth, business cycle synchronization, spillovers of business cycles, emerging markets, developing economies, global integration, macroeconomic policies

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Introduction

The period around the turn of the twenty-first century was pivotal for development in many emerging market and developing economies (EMDEs). A broad policy consensus on the benefits of integration into the global economy fueled rapid growth in cross-border trade and financial flows, while domestic structural reforms set the stage for growth.[1] The establishment of the World Trade Organization (WTO) in 1995 helped facilitate much greater market access for these economies, while a sharp reduction in tariffs embedded in trade agreements, as well as technological advances in communications and transportation, lowered the costs of international trade (World Bank 2002). Many EMDEs liberalized their domestic financial sectors and reduced restrictions on international financial flows during this period. Many EMDEs also undertook reforms to strengthen monetary and fiscal policy frameworks and to improve the functioning of domestic markets.

During the 2000s, EMDEs registered annual growth of 5.9 percent, on average, as they benefited from expanded participation in global supply chains, increased capital inflows, and robust demand for commodities. This was their best growth performance since the 1970s, when growth averaged 6.1 percent. Many EMDEs weathered the 2009 global recession well because they were able to draw on sizable policy buffers accumulated during the pre-recession period of strong growth (Kose and Ohnsorge 2020).

With the winds of international integration and domestic reforms at their backs, the role of EMDEs in the global economy expanded markedly during the first quarter of the twenty-first century. In 2000, EMDEs accounted for about 25 percent of global GDP, in contrast with about 85 percent of the world's population. In 2024, EMDEs account for nearly 45 percent of global GDP and essentially the same share of the population (figure 1.A).[2] EMDEs contributed almost 60 percent of global output growth, on average, during 2000-24, compared to 30 percent in the 1990s (figure 1.B). They have accounted for steadily growing shares of trade flows, investment flows, and commodity demand and supply since 2000. Since 2010, each of the three largest EMDEs (EM3)—China, India, and Brazil—have been among the 10 largest economies in the world.

Today, however, EMDEs face daunting headwinds—both global and domestic. Compared to its pace in the early part of the twenty-first century, cross-border integration has slowed, with trade growth falling and the ratio of foreign direct investment (FDI) inflows to EMDEs declining. Integration through global value chains (GVCs) peaked in the late 2000s (Caldara et al. 2020; Constantinescu et al. 2020; Freund et al. 2024). In more recent years, trade and investment policy fragmentation and a rise in protectionism among major economies have complicated policy making.

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[1] For a discussion of the impact of international financial integration, structural reforms, and policy to enhance macroeconomic stability in EMDEs, see Chari, Blair, and Reyes (2021); Kose et al. (2009); Obstfeld (2009); and Rodrik and Subramanian (2009).

[2] GDP is measured at average 2010-19 prices and market exchange rates. EMDEs account for larger shares of global output and growth when GDP at purchasing power parity (PPP) is used. In 2024, in PPP terms, EMDEs accounted for about 60 percent of global GDP, compared to 40 percent in 2000.

Following a decade of remarkable expansion at the dawn of the century, EMDEs have since encountered subdued growth and a significant drop in long-term growth projections. As of 2025, EMDEs face the lowest five-year-ahead potential growth rate since 2000. Fiscal space in many EMDEs narrowed, in part because of the increase in government spending to mitigate the damage associated with the overlapping crises of the past five years (World Bank 2021a, 2024a). Progress implementing structural reforms has stalled, with little improvement in the quality of institutional environments in the majority of these economies since the 2000s. Climate-related disasters have become more frequent and costly, adversely affecting economic activity and straining limited fiscal resources in some cases. In many EMDEs in two regions, East Asia and Pacific (EAP) and Europe and Central Asia (ECA), population aging is already limiting long-term growth prospects.

Against this backdrop, this paper first analyzes EMDEs' progress during the first quarter of the twenty-first century. In particular, it reviews EMDEs' integration into the global economy and studies business cycle linkages among EMDEs and between EMDEs and the rest of the global economy. This analysis is critical given the seismic changes in EMDEs' integration into the global economy and business cycles linkages during this period. The paper then systematically examines the main challenges confronting these economies. Finally, it utilizes the lessons from their progress and challenges to offer a menu of policies that EMDEs can use to overcome the headwinds they face. Specifically, the paper addresses the following questions:

- How has EMDEs' integration into the global economy evolved during the first quarter of the twenty-first century?
- How have business cycle linkages between EMDEs and the rest of the global economy changed during this period?
- What are the main economic challenges facing EMDEs?
- What are the key policy interventions EMDEs need to undertake to boost productivity and investment, navigate a difficult external environment, and improve macroeconomic stability?

The paper makes the following contributions to the literature:

- *Evolution of EMDEs' integration into the global economy.* The paper traces how EMDEs' footprint in the global economy has changed over the past 25 years and documents how these economies have become much more integrated into the global economy through multiple channels, including trade, commodity markets, and finance. It also reviews how the global economic landscape has shifted during this period.
- *Business cycle synchronization.* The paper studies how business cycle synchronization among EMDEs and between EMDEs and advanced economies has changed during the first quarter of the twenty-first century. Linkages are estimated by employing a model that decomposes the sources of business cycle fluctuations into global, group-specific, and idiosyncratic (economy-level) forces.

- *Spillovers from EMDEs.* The paper estimates spillovers from growth shocks in the three largest EMDEs, the EM3 (China, India, and Brazil), and compares these to the magnitude of spillovers from the three largest advanced economies, the AE3 (the United States, the euro area, and Japan). Similar analysis compares the magnitude of spillovers from China, the largest EMDE, to those from the United States, the largest advanced economy. This analysis uses a large and diverse country sample covering the first quarter of the century, including the deep global recession of 2020 and its aftermath.

- *Challenges and policy priorities.* In light of the insights from their experience with respect to international integration and business cycle linkages, the paper presents a systematic assessment of the main challenges confronting EMDEs. It then reviews policies that can best help these economies navigate the challenges they face as they enter the second quarter of this century. Specifically, it provides guidance on how EMDEs can pursue a broad agenda to improve their growth prospects through structural reforms; navigate the difficult external environment through changes in trade and investment policy; and enhance macroeconomic stability through improvements in fiscal, monetary, and financial sector policy.

The paper presents the following key findings.

The role of EMDEs in the global economy has grown substantially during the first quarter of the twenty-first century. They accounted for almost 45 percent of global GDP in 2024, up from about 25 percent in 2000, and have contributed most of global growth since 2000. EMDEs' growing share of the global economy has been powered by the EM3: they produced about 25 percent of global GDP in 2024, compared to 10 percent in 2000. EMDEs accounted for about 35 percent of global trade in 2023, versus about 20 percent in 2000. Together, the EM3 were responsible for two-fifths of EMDE trade in 2023. Increasingly, EMDEs are trading with each other. As of 2023, more than 45 percent of goods exports from EMDEs go to other EMDEs, compared to about 25 percent in 2000. EMDEs received 21 percent of global capital inflows during 2019-23, compared to just 6 percent during 2000-04. They have outstripped advanced economies' demand for primary energy since 2004 and for metals since 2007. China alone accounts for 60 percent of global metals demand, versus 13 percent in 2000.

Business cycle synchronization among EMDEs has risen during the past quarter century. Multiple measures suggest that the synchronization of business cycles among EMDEs increased sharply from the 1990s to the 2000s, and further strengthened in the subsequent decade and a half. The degree of synchronization between EMDEs and advanced economies has also increased since the 1990s. During the 2010s, an EMDE-specific factor, which captures common business cycle movements in these economies, accounted for about one-quarter of business cycle variation in EMDEs, more than twice as much as in the 2000s, suggesting that a more distinct EMDE-wide business cycle has emerged. By contrast, in advanced economies, the contribution of the advanced-economy-specific factor was mostly stable during the first two decades of this century.

Growth spillovers from the EM3 to other EMDEs have increased, but spillovers from the AE3 remain considerably larger. In the period 2000-23, a one-time increase in GDP growth in the EM3 of 1 percentage point is associated with a GDP expansion in other EMDEs of 0.3 percent on impact and a cumulative increase of nearly 2 percent after three years. In contrast, a one-time 1-percentage-point increase in growth in the AE3 yields a 0.8 percent GDP expansion in other EMDEs on impact and a cumulative increase of 4 percent after three years. Global GDP expands by nearly 1 percent, cumulatively, after three years following a one-time 1-percentage-point increase in growth in the EM3, compared to a 3 percent cumulative expansion following a 1-percentage-point growth acceleration in the AE3. Growth spillovers from the EM3 to other EMDEs have become larger over time, with the cumulative effect on output after three years of a 1-percentage-point increase in EM3 annual growth rising from near zero in 1971-2001 to 1.5 percent in 1993-2023.

EMDEs confront a host of global and domestic challenges as they enter the second quarter of the twenty-first century. Growth in EMDEs has declined along with an overall slowdown in the global economy. Growth in these economies averaged 3.5 percent per year during 2020-24, compared to 5.1 percent during 2010-19 and 5.9 percent during 2000-09. Trends in productivity, investment, and labor supply, among the fundamental drivers of growth, suggest that EMDEs' potential growth will slow to about 4 percent in the 2020s, on average, compared to more than 5 percent in the 2010s and nearly 6 percent in the 2000s. The slowdown in growth has coincided with a record increase in government debt and a greater cost of debt service since the early 2010s, reinforced by the overlapping shocks that have buffeted the global economy since 2020. Government debt in EMDEs has surged since the early 2010s, reaching 70 percent in 2024, the highest level since 1970. Despite a rise in government expenditures in EMDEs as a share of GDP since the 2000s, on average, there has been no accompanying rise in government revenues.

The pace of EMDEs' integration into the global economy has slowed since the 2000s, and various other headwinds have also started to weigh on growth prospects. Global trade growth weakened in the 2010s compared to the 2000s, while the expansion of GVCs has leveled off. The slowdown in trade has been experienced by the majority of EMDEs. The decline in the pace of integration is attributable partly to increasing trade restrictions and geopolitical fragmentation, particularly in recent years (Fernández-Villaverde, Mineyama, and Song 2024). In 2023, the number of global trade restrictions reached the highest level on record since 2009. FDI inflows to EMDEs have averaged 1.8 percent of GDP in the 2020s, down from 3.1 percent in the 2000s. Many EMDEs have been negatively affected, either directly or indirectly, by trade tensions between major economies (Amiti, Redding, and Weinstein 2019; IMF 2019a). In addition, rapid sectoral transitions, climate change, and demographic shifts weigh on growth prospects in many EMDEs. The impact of multiple challenges facing EMDEs is amplified due to their interconnected nature. For instance, the stagnation in structural and institutional reforms has played a role in the growth slowdown. Similarly, the increase in trade and investment restrictions has hindered cross-border integration, further exacerbating the impact of other challenges.

Given these challenges, EMDEs need to prioritize boosting investment and productivity, navigating a difficult external environment, and improving macroeconomic stability. While policies should be tailored to each country's circumstances, three equally important themes dominate the policy agendas needed across these economies.

- EMDEs need to improve sustainable growth prospects by reinvigorating key policy reforms. These reforms can accelerate investment and productivity growth by improving the institutional and business environment, human capital development, and digital transformation.
- In the increasingly difficult international economic environment shaped by slowing integration and trade tensions between major economies, EMDEs need to adopt a comprehensive set of policies to mitigate the adverse effects of fragmentation and protectionist measures while seeking ways to take advantage of untapped opportunities for cross-border cooperation.
- EMDEs need to enhance macroeconomic stability by implementing well-designed, credible policy frameworks and putting in place sufficient buffers against shocks. With the bulwarks established by these policies, EMDEs will be less vulnerable to external shocks and are more likely to be able to use countercyclical policy when needed.

The list of necessary policy interventions may appear extensive, but the significant synergies among these policies can help address multiple challenges. Structural policies to reverse the growth slowdown, such as human capital development and business environment improvements, help EMDEs better withstand external shocks. Enhanced macroeconomic stability paves the way for effective structural reforms. Policy makers in EMDEs have a rich set of policy tools to address their economic challenges and will often need to use a combination of approaches.

EMDEs' integration into the global economy

EMDEs have become far more deeply connected economically, both among themselves and with advanced economies, since 2000. In aggregate, EMDEs are key export markets, major contributors to global commodity supply and demand, and, increasingly, significant sources of FDI and remittances for other EMDEs. EMDEs' integration into GVCs has also grown substantially. In some cases, geographic proximity has promoted trade and financial linkages among EMDEs, although considerable diversity remains in the nature and extent of regional integration.

The EM3 have played a major role in expanding the global footprint and influence of EMDEs: China, as the largest EMDE and a key driver of global growth in the past quarter century; India, as the fastest-growing large economy in recent years; and Brazil, as the leading exporter of agricultural products. Together, the EM3 have consistently accounted for a sizable share of global activity and growth over the past two decades. The EM3, which accounted for about 55 percent of the GDP of EMDEs in 2024, will remain key to global

economic prospects in the years ahead, particularly given the expected continuing rise of India's share in the world economy. The AE3—the United States, the euro area, and Japan—provides a benchmark for advanced economies, accounting for about 75 percent of their GDP in 2024. Through trade, financial, commodity market, and confidence channels, economic conditions in the EM3 affect the rest of the world, just as conditions in the AE3 often do.

Trade linkages

Global trade flows have expanded significantly during the first quarter of the twenty-first century, supporting output and income growth, technology spillovers, and poverty reduction in EMDEs.[3] In nominal U.S. dollar terms, global exports and imports of goods and services increased nearly four-fold between 2000 and 2023. EMDEs' share of global trade rose from 22 percent in 2000 to 37 percent in 2023, while the EM3's share rose from 5 percent to 15 percent during the same period (figures 2.A and 2.B). China alone accounted for 11 percent of global trade 2023, up from 3 percent in 2000, just before its accession to the WTO in 2001. The AE3's share of global trade declined, in relative terms, falling from 78 percent in 2000 to 62 percent in 2023.

As EMDEs' share of global trade has risen, their trade partnerships have evolved. Increasingly, EMDEs are trading with other EMDEs. Between 2000 and 2023, the share of goods exports from EMDEs to other EMDEs rose from 27 percent to 46 percent (figure 2.C). The growth of EMDEs' goods exports to other EMDEs has been faster than the growth of their goods exports to advanced economies in the 2000s, 2010s, and thus far in the 2020s (figure 2.D).

Global trade growth has been underpinned by, and has in turn reinforced the expansion of, international production networks. The 2000s were a second consecutive decade of rapid growth in GVCs as technological advances eased the outsourcing of goods and services and continued to reduce transport costs (World Bank 2020a). In real terms, global trade expanded at a brisk pace in the early part of the twenty-first century, at about 5 percent per year, on average, in 2000-09. Much of EMDEs' increased participation in GVCs during this period was attributable to increased backward participation (the proportion of foreign value-added embedded in an economy's exports), although the intensity of forward participation (the proportion of domestic value-added embedded in foreign countries' exports) has also increased, most notably among the EM3.

The services trade landscape has also changed dramatically. The value of global services trade—business and communication services, financial services, transport services, tourism, and the like—remains far smaller than the value of goods trade, accounting for 24 percent of global trade (exports plus imports) in 2023. Yet services trade growth has outpaced goods trade growth since the early 2010s. Between 2005 and 2023, services trade, in nominal U.S. dollar terms, expanded more than threefold (figure 2.E). EMDEs accounted for more than one-quarter of global services exports in 2023, a share that has slowly but steadily risen since 2005, with the exception of a temporary dip during the pandemic (figure 2.F).

[3] See, for example, World Bank and WTO (2015); World Bank (2020a); and WTO (2024).

Commodity market linkages

Rapid growth of EMDEs has underpinned surging demand for commodities, especially energy and metals, in the past quarter century, and it fueled a price boom during the first decade (Baffes et al. 2018). The share of demand for key commodities from EMDEs surpassed that of advanced economies in the mid-2000s and has continued to increase, albeit at a slowing pace (figures 3.A and 3.B). EMDEs' share of global energy demand rose from 46 percent in 2000 to 67 percent in 2023, while their share of metals demand rose from 32 percent to 77 percent.

Rapid industrialization and urbanization in China account for a sizable share of the increase in EMDEs' demand for commodities in recent decades. China alone accounted for 17 percent of global oil demand, 28 percent of primary energy demand, and 60 percent of metals demand in 2023 (figure 3.C). India's demand for primary energy and metals has also grown substantially, despite the comparatively services-oriented nature of its economy, albeit from a much lower base. The EM3 also plays an outsized role in the global supply of key commodities. China's production of refined metals (namely, aluminum, copper, and zinc) and coal has increased sharply since 2000 (figure 3.D). Brazil is now the world's largest exporter of agricultural commodities.

Three-fifths of EMDEs are commodity exporters; together, these economies account for a major share of global commodity exports. EMDE commodity exporters tend to be specialized according to their natural resource base, with associated substantial regional concentrations of commodity production (figure 3.E). For instance, the Middle East and North Africa (MNA) accounts for about a quarter of global oil exports, while ECA contributes a further 12 percent. Latin America and the Caribbean (LAC) exports large shares of global exports in metals (14 percent) and food (14 percent). The production of some tropical commodities, including cocoa (West Africa) and natural rubber (East Asia), is also highly concentrated regionally. EAP—and within the region, predominantly China—absorbs a large share of global imports of several commodity subcategories (figure 3.F).

Financial linkages

EMDEs account for a growing share of global capital flows as both recipients and sources (figures 4.A and 4.B). On average, EMDEs received 21 percent of global capital inflows during 2019-23, compared to only 6 percent during 2000-04. The integration of EMDEs into the global financial system varies according to the type of flows, however. The share of global FDI going to these economies continues to be much higher than the shares of portfolio investment and bank lending.

Between 2000-04 and 2019-23, EMDEs' average share of global FDI inflows nearly tripled, from 18 percent to 51 percent, although the value of inflows dropped sharply during the pandemic. During both of these periods, nearly half of the inflows to EMDEs were channeled to the EM3. EMDEs' combined share of global FDI outflows remains far lower than their share of global inflows, though it increased nine-fold between 2000-04 and 2019-23, from 3 percent to 27 percent. Advanced economies remain the predominant source of FDI inflows to EMDEs, although China has become a major source, accounting for 12 percent of global

outflows in 2019-23. Even as the value of FDI flows has increased, inflows to EMDEs as a share of their GDP have fallen since the global financial crisis (figure 4.C). In some regions—in particular EAP and Sub-Saharan Africa (SSA)—FDI positions are increasingly from economies in the same region (figure 4.D).

The proportion of global portfolio debt and equity inflows that went to EMDEs more than quadrupled between 2000-04 and 2019-23, though it remains modest at 8 percent, partly reflecting restrictive capital account restrictions and relatively shallow financial markets in host EMDEs (Combes et al. 2019). Similarly, banking networks remain a limited channel of integration among EMDEs, although there has been an increase in involvement by EMDE banks in cross-border lending at both the regional and global levels (Cerutti, Casanova, and Pradhan 2018). Most notably, international banking networks headquartered in China have expanded rapidly, accounting for 6 percent of global cross-border lending per year, on average, in 2019-23.

For decades, EMDEs have received most of global remittance inflows. EMDEs' proportion of inflows has continued to rise, reaching 80 percent in 2019-23, compared to about 65 percent in 2000-04 (figure 4.E). EMDEs have also accounted for a rising share of global remittance outflows—40 percent in 2019-23, up from about 25 percent in 2000-04. These shifts in the destination and origin of remittances reflect the growing migration of people to and from EMDEs, triggered by push and pull factors such as income gaps, armed conflict, and climate change (World Bank 2023a). Remittance inflows as a proportion of GDP in EMDEs excluding the EM3 have also steadily increased since the early 2000s (figure 4.F).

Official development assistance (ODA) is an important source of external financing for many EMDEs, particularly those where per capita income is lowest. Yet ODA as a proportion of gross national income in low-income countries has generally declined since 2000. While most ODA to EMDEs continues to originate in advanced economies, major EMDEs play a growing role in the provision of aid (Benn and Luijkx 2017). China is now the largest single bilateral creditor to other EMDEs (World Bank 2021b). A large share of ODA from China and Brazil is directed to SSA, while India is an important source of ODA within the South Asia (SAR) region.

Synchronization of business cycles in EMDEs with those in the rest of the world

Deepening integration between EMDEs and the rest of the world over the past few decades has enabled these countries to benefit from shared growth dynamics. Yet integration has exposed EMDEs to shared vulnerabilities, magnifying the impact of external shocks. The literature provides robust evidence that increased trade intensity fosters greater international synchronization of business cycles, although the strength of this relationship varies depending on the estimation methods employed and the particular trade

relationships considered.[4] Financial linkages are likewise found to be a crucial driver of business cycle synchronization. Economies that are more integrated through FDI or financial market openness tend to experience more synchronized economic fluctuations.[5] Financially interconnected economies are also more susceptible to common shocks transmitted via capital flows, credit markets, and financial institutions, which also contribute to business cycle alignment.

Evolution of synchronization

The increasing integration of EMDEs into the global economy has contributed to greater synchronization of business cycles among EMDEs and between EMDEs and advanced economies. Three measures explore how the degree of synchronization has evolved in recent decades. First, a concordance index captures the proportion of time that two countries are in the same phase of the business cycle.[6] Second, the correlation of growth rates between economies goes beyond a comparison of expansion-contraction periods by measuring the degree of synchronization in terms of how closely economies' growth performances are related. A third measure, the average pairwise concordance index of a country with all other countries, allows all economies to be ranked in terms of their business cycle synchronization with all other economies. Each of these measures suggests that business cycles among EMDEs have become more synchronized since the 1990s. Higher synchronization could be the result of more frequent common shocks, more correlated shocks, or more potent cross-border spillovers.

The concordance index shows that the synchronization of business cycles among EMDEs increased sharply, on average, from the 1990s to the 2000s, and somewhat further in the 2010s and early 2020s (figure 5.A). A similar upward trend is observed in the business cycle synchronization between EMDEs and advanced economies. In the 1990s, the synchronization of business cycles between EMDEs and advanced economies tended to be higher than the synchronization among EMDEs, likely because of larger exports to advanced economies. However, as cross-border trade and financial linkages within the group have strengthened, their business cycles have become more synchronized over time. In the 2020s, the average degree of synchronization among EMDEs has become closer to that between EMDEs and advanced economies.

Since extreme growth outcomes, especially during periods of global recessions and recoveries, could distort correlation results, the effects of these events are removed by

[4] See, for example, Baxter and Kouparitsas (2005); Frankel and Rose (1997, 1998); Gong and Kim (2018); Imbs (2004); and Inklaar, Jong-A-Pin, and de Haan (2008).
[5] See, for example, Davis (2008); Imbs (2004, 2006); Kose, Prasad, and Terrones (2003); and Otto, Voss, and Willard (2001).
[6] The concordance index is calculated by, first, identifying the two phases of business cycles—expansions and contractions—in each economy. A value of one is assigned when two economies share the same phase in a given period, and zero otherwise. The index measures the percent of periods when the two countries are in the same business cycle phase. Two countries are perfectly procyclical (countercyclical) if the concordance index is equal to 100 (zero). The phases of business cycles are identified using the statistical algorithm of Harding and Pagan (2002), with each phase lasting at least two quarters and the entire cycle lasting at least five quarters.

computing a partial correlation.[7] The results suggest that GDP growth has been more correlated among EMDEs in the 2020s than in the previous decades, and that the correlation increased slightly from the 2000s to the 2010s (figure 5.B). The correlation of growth between EMDEs and advanced economies has tended to be higher than that among EMDEs during all decades except the 2010s, when growth in EMDEs was more weakly correlated with growth in AE3, reflecting the moderation of China's growth during this period (figure 5.C).

In the 1990s, EMDEs accounted for about half of the number of economies with the highest synchronization of economic activity with the rest of the world (figure 5.D). However, since 2000, the number of EMDEs among the most synchronized economies has been significantly higher. This also highlights the increased comovement of activity in EMDEs with the global economy, reflecting a notable shift in the dynamics of cross-country economic and financial linkages.

Drivers of synchronization

The sources of changes in the synchronization of business cycles are explored using a dynamic factor model (DFM). The model decomposes fluctuations in growth into three components: a global factor, a group factor, and an idiosyncratic factor (technical details are provided in annex 1). The global factor captures growth fluctuations common across all economies, representing synchronized cyclical movements; this factor can be interpreted as the global business cycle. The group factor captures growth fluctuations specific to a particular group of economies (in this case, EMDEs or advanced economies); this factor can be interpreted as representing the group-specific business cycle. Finally, the idiosyncratic factor captures growth fluctuations not explained by the global or group factors—that is, country-specific factors.

To identify the group factor, the economy-level data is divided into two groups: EMDEs and advanced economies. An additional exercise decomposes growth fluctuations within the EM3 and the AE3. To examine how the roles of the three factors in explaining business cycle fluctuations in EMDEs have evolved, data for the full sample period, 2000Q1 to 2023Q4, is divided into three subperiods: two ten-year windows roughly aligned with the decade of rapid globalization prior to the global financial crisis (2000-09) and the decade following that crisis (2010-19), and a four-year period overlapping the COVID-19 pandemic (2020-23).[8]

The results suggest that, for EMDEs, the role of the group factor in explaining the variance of business cycles increased substantially in the 2010s, accounting for 25 percent of the variance in that decade, more than double the 11 percent in the 2000s (figure 6.A). For the

[7] The partial correlation measures the relationship between two variables after the effects of control variables are adjusted. It is calculated as the correlation of residuals of the two variables after being regressed on controls. The results reported in figures 5.B and 5.C control for the effects of global recessions in 1991, 2009, 2020 and the immediate rebounds from these recessions (Guénette, Kose, and Sugawara 2022).

[8] An alternative version of the baseline DFM is estimated after grouping economies into geographic regions, without taking into account whether they are EMDEs or advanced economies. The results, summarized in annex 1, show that the global factor remains the dominant contributor to fluctuations in economic growth.

EM3, the importance of the group factor increased even more between the two decades, accounting for 33 percent of the business cycle variation in the 2010s, about three times as much as in the 2000s (figure 6.B). These findings indicate that a more pronounced EMDE business cycle has emerged in the 2010s, likely reflecting stronger cross-border trade and financial linkages among EMDEs.

For advanced economies, by contrast, the relative size of the group-specific factor was roughly unchanged, at about 25 percent during the 2000s and 2010s, although it increased for the AE3 (figures 6.C and 6.D). In the early 2020s, the world factor contributed the most, by far, to the variance of growth in EMDEs and advanced economies (although somewhat less markedly among the EM3), largely reflecting the global nature of shocks during this subperiod.

Business cycle spillovers from major economies

The increase in the relative size of major EMDEs—in particular, China—may have changed the nature and extent of cross-border business cycle spillovers during the twenty-first century. The expanding footprint of major EMDEs in the global economy, combined with the evidence that business cycle synchronization among these economies has strengthened, points to the possibility of larger cyclical spillovers from economic growth in major EMDEs to other economies.

Analysis of spillovers from EMDEs remains scant compared to the large literature on spillovers from advanced economies. Notable contributions provide evidence of growth spillovers from emerging market economies to LICs and underscore the global significance of spillovers from large EMDEs (Dabla-Norris, Espinoza, and Jahan 2015; Huidrom et al. 2020; IMF 2024a). There is also evidence of rising spillovers from EMDEs since the 1990s, although spillovers from advanced economies remain larger in comparison (Arezki and Liu 2020). Trade, particularly through GVCs and commodity markets, is a key transmission channel for spillovers from large EMDEs and advanced economies. In contrast, financial linkages predominantly transmit spillovers from advanced economies, with limited evidence of such effects from EMDEs (Feldkircher and Huber 2016; Furceri, Jalles, and Zdzienicka 2017; Kose et al. 2020).[9]

The magnitude of spillovers depends on both the size of the initial growth shock and the strength of the transmission channels that underpin cross-border linkages. A structural vector autoregression (SVAR) model, with a standardized shock calibration to ensure comparability, is used to estimate spillovers from major economies to other economies. To

[9] Research on the contribution of the financial channel to business cycle spillovers from EMDEs remains sparse, yet findings suggest its limited importance in global transmission. Insights from existing studies focus on spillovers associated with unexpected changes in monetary policy, equity prices, sovereign spreads, exchange rates, and capital flows. Monetary policy in China generates only short-lived effects, largely transmitted through trade linkages with regional economies (Cho and Kim 2021; Johansson 2012; Lei, Mei, and Zhang 2024). Similarly, EMDEs equity markets, though regionally integrated, exhibit limited spillovers to global markets (Hedström et al. 2020). Evidence of financial spillovers from sovereign spreads and exchange rates tends to be modest and geographically contained (Dell'Erba, Baldacci, and Poghosyan 2013; Kelejian, Tavlas, and Hondroyiannis 2006).

help with the interpretation of the results, box 2 provides a detailed discussion of transmission channels—including trade, commodities, financial markets, and confidence effects—and the associated mechanisms driving spillovers. The SVAR analysis covers 40 economies, divided into three groups—the EM3, the AE3, and other EMDEs—using data for 2000Q1 to 2023Q4 (technical details are provided in annex 2 and Balatti et al. 2024). The variables in the analysis include AE3 GDP growth, the U.S. interest rate, EMBI spreads, EM3 GDP growth, oil price growth, and GDP growth of other EMDEs. Dummy variables are also included to control for the impact of the COVID-19 pandemic. Spillovers are inferred by tracing cumulative GDP growth responses to a one-off exogenous increase in GDP growth of 1 percentage point.

Estimated responses to shocks are identified with a combination of sign and zero restrictions, grounded in economic theory. In general, an increase in GDP growth in major economies is assumed to boost GDP growth in these economies further than the shock itself and to increase oil prices, reflecting higher commodity demand. The response of other EMDEs to an increase in growth in the EM3 or AE3 is left unrestricted, allowing for direct estimation of spillovers from the data.

Spillovers from the EM3 and AE3

A growth increase in the EM3 is found to have sizable spillover effects on other EMDEs and the global economy. Specifically, a one-time 1-percentage-point increase in output growth in the EM3 is associated with a cumulative 1.9 percent expansion of output in other EMDEs and a cumulative 0.9 percent expansion in global output after three years (figures 7.A and 7.B). These findings underscore the interconnectedness of emerging markets with the rest of the global economy and align with findings in the previous literature (Huidrom et al. 2020; World Bank 2016). Spillovers to the AE3 from an increase in growth in the EM3 are not statistically significant. This can be attributed partly to factors such as offsets from rising oil prices that result from the initial growth shock and macroeconomic policies employed by the AE3.

An increase in growth in the AE3 is associated with larger spillovers than an equivalent growth increase in the EM3, both on impact and after each of the subsequent three years. A 1-percentage-point increase in growth in the AE3 is associated with a cumulative 4 percent output expansion in other EMDEs after three years, about twice the effect of an equivalent growth increase in the EM3, and a cumulative 3.1 percent expansion of global output after three years, roughly three times the effect of a growth increase in the EM3.

Growth fluctuations in the AE3 also account for a larger share of growth fluctuations elsewhere than those originating in the EM3. The AE3 account for about 35 percent of the variance in growth rates of other EMDEs at the three-year horizon, compared to a 10 percent contribution from the EM3 (figure 7.C). Similarly, the AE3 account for approximately 40 percent of the variance in global growth, whereas the EM3 contribute about 10 percent (figure 7.D). These results underscore the continued dominant role of advanced economies in driving global economic cycles, although EMDEs exert significant influence (World Bank 2016).

The relatively large spillovers from the AE3 can be attributed to their relatively large economic size and their dominant role in global trade and finance. With a greater share of global GDP and financial flows, the AE3 have the capacity to transmit shocks more strongly and rapidly through financial channels, influencing economic conditions worldwide. Although the EM3 still account for a smaller portion of the global GDP, their growing influence is evident in the substantial spillovers an increase in their output growth generates for other EMDEs and the global economy.

Spillovers from China and the United States

To investigate the extent of spillovers from China, the largest EMDE, and the United States, the largest advanced economy, the benchmark SVAR model is revised by replacing the EM3 with China and replacing the AE3 with the United States. The country-specific results mirror the benchmark results. In short, although an increase in growth in China has considerable effects on output elsewhere after two years, particularly in other EMDEs, the impact of an increase in growth in the United States is larger, a finding that is consistent with previous work on spillovers from the two economies (Inoue, Kaya, and Ohshige 2015; Kose et al. 2020; Osborn and Vehbi 2015).

Specifically, a 1-percentage-point increase in China's GDP growth rate is associated with a 1.8 percent cumulative output expansion in other EMDEs and a 0.8 percent cumulative output expansion in the global economy after three years (figures 8.A and 8.B). This findings of sizable spillovers from China confirms findings from previous studies (Copestake et al. 2023; Furceri, Jalles, and Zdzienicka 2017; Kose et al. 2020). However, a 1-percentage-point increase in growth in the United States is associated with larger spillovers: a cumulative 2.9 percent output expansion in other EMDEs and a cumulative 2 percent expansion in the global economy after three years. Nevertheless, the magnitude of spillovers from China relative to those from the United States is closer than the magnitude of spillovers from the EM3 relative to those from the AE3. At the three-year horizon, spillovers from the United States to the global economy are approximately twice as large as those from China, while spillovers from the AE3 to the global economy are about three times as large as those from the EM3.

As in the results described above for the EM3 and AE3, the share of growth variance in other EMDEs and the global economy attributable to growth shocks in China is small relative to the share attributable to growth shocks in the United States. Between 2000Q1 and 2023Q4, growth shocks in China explained about 10 percent of the growth variance in other EMDEs and the global economy over a three-year horizon, while shocks in the United States explained approximately 25 percent of growth variation in other EMDEs and 30 percent of the global growth variation (figures 8.C and 8.D).

Spillovers over time and across country groups

The analysis of spillovers above indicates that changes in growth in the EM3 lead to sizable output growth spillovers elsewhere, but also that spillovers from changes in growth in the AE3 remain much larger than those from the EM3 in the first quarter of the twenty-first century. It is possible, though, given the EM3's increasing integration into, and contribution

to, the global economy, that spillovers from these economies have increased over time.

To obtain a longer-term perspective, and in view of the limited availability of long, high-frequency time-series data for many EMDEs, the benchmark model is extended using annual data, with modifications in some variables to accommodate data availability.[10] Specifically, the model is estimated using annual data for two overlapping 30-year time spans—1971-2001 and 1993-2023. A comparison of estimates for these periods indeed shows a rise in the responsiveness of other EMDEs and commodity prices to an increase in growth in the EM3, substantiating the growing influence of major EMDEs on the global economy (figure 9.A). The increased responsiveness of output in other EMDEs signals a notable shift in interdependencies and an amplification of spillovers since the turn of the century. However, spillovers from an increase in growth in the AE3 remain substantially larger than spillovers from the EM3.

Consistent with the findings in the previous sections on integration and synchronization and in the literature, the analysis corroborates the important roles of trade and commodity prices in transmitting cross-border shocks. As EMDEs have opened further to trade, EM3 growth shocks have had larger global spillovers. The integration of major EMDEs into GVCs, particularly during the 1990s and 2000s, has likely amplified these spillovers. Commodity prices are also important transmission channels. Rising commodity prices, driven by growing demand, can spill across borders and boost economic activity in commodity-exporting countries (Kose et al. 2020). Conversely, for commodity importers, this channel could moderate adverse spillovers from slumps in EM3 growth. In particular, stronger-than-expected growth in the EM3 tends to raise oil prices, amplifying positive spillovers to oil-exporting economies while muting positive spillovers to oil-importing economies (figure 9.B). While the financial channel is also important, the relatively limited financial integration of the EM3 constrains the extent of global spillovers.

Taken together, these findings indicate that although spillovers from EM3 to the global economy are substantial and have become more potent since the turn of the century, they remain smaller than spillovers from the AE3.

Challenges confronting EMDEs

For many EMDEs, the period around the turn of the twenty-first century was transformative. As they became more integrated with advanced economies, they did not just embrace the global policy consensus on the benefits of globalization, but they also undertook measures to improve monetary and fiscal policy frameworks and liberalize their domestic financial sectors. The combination of global integration, domestic policy reforms, and robust commodity demand led to historically strong economic growth and better development

[10] In addition to the SVAR exercise using annual data described here, the baseline SVAR model is re-estimated using quarterly data for 2009-23. The results show that, although the impact on oil prices has increased somewhat, there is no noticeable rise in business cycle spillovers to other EMDEs, advanced economies, or the global economy in the post-global financial crisis period. Several factors may explain the lack of significant increases in spillovers with quarterly data over a shorter period. These factors are summarized in annex 2.

outcomes. During the 2000s, EMDEs registered their best collective growth performance and fastest income convergence toward advanced economies since the 1970s. Thanks to strong growth and improvements in policy frameworks during this period, many EMDEs also accumulated significant policy buffers, better enabling them to weather the 2009 global recession (Kose and Prasad 2020).

Although they form a larger part of the global economy than they did at the start of the twenty-first century, EMDEs face many challenges as they enter the second quarter of the century. Output growth—actual as well as potential—has been weakening, the pace of structural reforms has stagnated, and fiscal space has narrowed. A surge in cross-border trade and investment restrictions and geopolitical tensions has dramatically altered the global economic landscape over the past decade. Rapid sectoral shifts and adverse effects of climate change have also become more pronounced, weighing on growth prospects. In addition, demographic conditions have been progressively less supportive of growth in several regions. Many EMDEs, particularly China, have, through their success, moved closer to the global technology frontier, so that their growth potential has waned. These developments have taken place against a backdrop of multiple global shocks, including the COVID-19 pandemic, Russia's invasion of Ukraine, renewed conflict in the Middle East, large commodity price swings, and a surge in global inflation accompanied by a sharp increase in global interest rates.

The impact of these challenges is magnified by significant linkages between them. For example, the lack of progress on structural and institutional reforms has contributed to the growth slowdown, as has the loss of momentum in cross-border integration resulting from the proliferation of trade and investment restrictions. Limited fiscal space has constrained the availability of financing for infrastructure investment, and climate-related adaptation and mitigation efforts. Multiple global shocks have contributed to the rapid accumulation of debt in many EMDEs, further eroding fiscal space.

Weakening growth prospects

Reflecting a combination of cyclical and structural factors, there has been a sustained slowdown in EMDEs' growth since the global financial crisis. On average, output in EMDEs grew by only 3.5 percent per year during 2020-24, compared to 5.1 percent during 2010-19 and 5.9 percent during 2000-09 (figure 10.A). The slowdown in growth has been widespread across EMDEs. Three-quarters of EMDEs had lower average growth during 2020-24 than in 2010-19, and nearly three-fifths already had lower average growth in the 2010s than in 2000-09. Average annual growth in the EM3 slowed to 4.5 percent during 2020-24, from 6.7 percent during the 2010s and 8.1 percent during the 2000s.[11] The slowdown in growth has also extended to advanced economies.

As growth in EMDEs has slowed, the pace of convergence to the per capita income levels of

[11] Although China explains much of the growth slowdown in the EM3 because of its size, growth has weakened in all three economies since the 2000s. In China, growth slowed from 10.3 percent in the 2000s to 4.8 percent in 2020-24. Growth in India decelerated from 6.3 percent in the 2000s to 5.1 percent in 2020-24, while Brazil also experienced a slowdown from 3.4 percent to 2.1 percent during the same period.

advanced economies has also weakened: the difference in per capita growth between EMDEs and advanced economies, which averaged more than 3 percentage points during the 2000s, has narrowed significantly. During 2020-24, annual per capita growth in EMDEs averaged only 1.2 percentage points above that in advanced economies (figure 10.B). Excluding China and India, per capita growth in EMDEs has switched from catching up with that in advanced economies to falling further behind. Nearly half of EMDEs had slower per capita growth than advanced economies in 2020-24 (figure 10.C). The sluggish pace of per capita growth in EMDEs will not be sufficient to allow many of these economies to make meaningful progress toward key global development goals. The pace of poverty reduction was already slower in the years after the global financial crisis than in the decade preceding the crisis, and poverty rates in some EMDEs rose following the COVID-19 pandemic (figure 10.D). By 2030, about 7 percent of the global population is expected to remain in extreme poverty (World Bank 2024c). An estimated 600 million people will be facing hunger (UN 2024).

The decline in growth in EMDEs reflects a slowdown in potential growth, or the maximum growth rate that can be sustained in the long term at full employment and full capacity without igniting inflation. All fundamental drivers of growth have weakened since the global financial crisis. Potential growth in EMDEs is projected to slide to 4.1 percent per year, on average, in 2020-29, lower than the average of 5.3 percent per year in 2010-19, which in turn was already lower than 5.9 percent in the 2000s (figure 11.A). Potential growth in the EM3 is on track to slow more sharply, from 6.3 percent in 2010-19 to 4.7 percent in 2020-29. As of 2025, EMDEs face the lowest five-year-ahead potential growth rate since the start of the century. Like the slowdown in actual growth, the slowdown in potential growth has been global. In advanced economies, potential growth is projected to average about 1.3 percent per year in 2020-29, about half of the rate during the 2000s. Sixty percent of EMDEs are on track to have slower potential growth during the 2020s than during the 2000s (figure 11.B).

Consistent with the slowing of potential growth, long-term growth expectations of EMDEs have also softened considerably. In 2000, EMDEs were projected by private-sector forecasters to grow by 6 percent in 2010. In 2010, the long-term growth forecast for these economies peaked at 6.2 percent. Since 2010, it has steadily declined, falling to 3.4 percent in 2024 (figure 11.C). For advanced economies, long-term growth forecasts have been declining since the early 2000s. Weak prospects for advanced economies, still critical trade and investment partners of EMDEs, will make it additionally challenging for EMDEs to improve their growth outlooks.

Three fundamental factors explain the slowdown in potential growth in EMDEs. First, investment growth in EMDEs was substantially slower in the 2010s than in the 2000s, and the slowing continued in the early 2020s (figure 11.D). In both the 2010s and the 2020s, about 70 percent of EMDEs has lower investment growth, on average, than in the 2000s (figure 11.E). The post-global financial crisis slowdown in investment growth initially reflected, in part, the withdrawal of crisis-related policy stimulus. The plunge in commodity prices in 2014-16 also hit investment, particularly in commodity-exporting

EMDEs, while in China, the rebalancing of growth away from investment contributed to the global investment slowdown. Flagging investment growth may also have reflected discouraging investment climates and bouts of elevated policy uncertainty (Stamm and Vorisek 2024).

Second, labor productivity growth softened in EMDEs during the 2010s, in part because of weakening investment growth, but also due to several other factors (Dieppe 2021). Productivity gains during previous decades from sectoral reallocation of resources, particularly of the labor force out of the agricultural sector, have faded. Populations begin to age in some EMDEs. And innovation slowed, partly owing to narrowing gaps between technology in use and the global technological frontier.

Third, the demographic profiles of some EMDEs have become less favorable for economic growth. In EAP and ECA, the working-age (aged 15-64) share of the population has been declining since the early 2010s following the trend in advanced economies starting in the mid-2000s (figure 11.F). In LAC, the working-age share of the population will begin a slow, steady decline from the early 2030s. In MNA and SAR, the decline is expected to begin somewhat later. In contrast, in SSA, the working-age share of the population is projected to continue to expand for decades, presenting an opportunity to accelerate growth if workers can be employed more productively.

Difficult external environment

Despite EMDEs' significant progress in integrating into the global economy over the past 25 years, the global economic cooperation that characterized the years around the turn of the century has wound down since the global financial crisis and, more recently, has gone into reverse. The frequency of new trade and investment agreements has been substantially lower in the early 2020s than in the two preceding decades (figures 12.A and 12.B). In 2023, the number of global trade restrictions reached the highest level on record since 2009. Trade and investment restrictions, along with trade distortions stemming from behind-the-border industrial policies, have proliferated (figures 12.C and 12.D). Advanced economies are responsible for about 70 percent of the trade-distorting policy measures introduced in 2022-24, while EMDEs have borne most of the effects. The momentum of trade and financial globalization has stalled, and geopolitical fragmentation has risen, reaching a peak in 2020 and remaining elevated (figures 12.E and 12.F). These developments present challenges for EMDEs (Aiyar and Ohnsorge 2024; Fernández-Villaverde, Mineyama, and Song 2024).

As protectionist measures have risen, global economic integration has slowed, reflecting a raft of cyclical and structural challenges (Constantinescu, Mattoo, and Ruta 2020). During 2000-19, global trade in real terms expanded at an average rate of about 5 percent per year. That pace slowed to about 2.5 percent per year during 2020-24. Moreover, after peaking in 2008, the ratio of trade to GDP in EMDEs has since trended downward (figure 13.A). The decline has been particularly marked in the EM3. The trade slowdown has been concentrated in goods trade, while the pace of services trade has remained robust (Ohnsorge and Quaglietti 2024). The rapid expansion of GVCs, instrumental in promoting trade growth

in the 2000s, has leveled off since the early 2010s, in line with slowing global growth and rising protectionist measures, but also reflecting a degree of natural maturation as potential gains from further specialization became more limited (figure 13.B). Supply chain vulnerabilities exposed during the COVID-19 pandemic further slowed GVC growth (Javorcik 2020).

FDI to EMDEs, as a share of their GDP, has also dropped, from an average of 3.1 percent of GDP in the 2000s to 1.8 percent in the 2020s, partly because of elevated policy uncertainty (Adarov and Pallan forthcoming). The decline has been widespread: FDI as a share of GDP has been lower in more than three-fifths of EMDEs in the 2020s relative to the 2000s. Although EMDEs are receiving a larger share of global FDI inflows—about one-half in the early 2020s, compared to one-fifth in the 2000s—that larger share is based on a lower volume of global flows. After reaching more than $3 trillion in 2007, global net FDI inflows fell to an annual average of about $1.5 trillion in the early 2020s.

Restrictions on cross-border investment flows have also been proliferating alongside barriers to trade. For example, inward FDI screening mechanisms have become more widespread, with the number of countries adopting such measures more than doubling in the past decade, in part reflecting elevated geopolitical tensions and concerns relating to national security (UNCTAD 2024a). Additionally, there has been a rising incidence of outward FDI screening by large economies, which may hinder FDI flows to EMDEs (Myles 2024; UNCTAD 2024b).

Protectionist trade measures and investment restrictions tend to result in distortions that inhibit economic growth, increase prices paid by domestic consumers, disrupt value chains, and impede cross-border productivity spillovers.[12] Rising use of protectionist measures also increases policy uncertainty, disrupting firms' decisions and trade flows while creating a less stable, more costly environment for global trade. These measures often lead to retaliatory actions, creating a cycle of escalating trade barriers that harm cross-border commerce well beyond the countries targeted by the original measures. This uncertainty discourages investment and innovation and forces firms to reconfigure supply chains, often at significant cost (Grossman, Helpman, and Redding 2024). While industrial policies can support sectoral development and address market failures, poorly designed or long-lasting interventions risk distorting markets, suppressing competition and innovation, adversely affecting price formation, and reducing the availability of goods and services (EBRD 2024; Millot and Rawdanowicz 2024).

Narrowing fiscal space

Many EMDEs have limited fiscal space, reducing their ability to use countercyclical policy to stabilize activity in the face of adverse (domestic or external) shocks. Public spending to respond to the COVID-19 pandemic drove up debt levels in the 2020s, but debt had already increased substantially in the decade before the pandemic, from a GDP-weighted average of 37 percent in 2010 to 55 percent in 2019—the largest and most widespread of four global

[12] See, for example, Amiti, Redding, and Weinstein (2019); Cavallo et al. (2021); and World Bank (2023b).

debt waves since 1970 (Kose et al. 2021; figure 14.A). By 2024, government debt-to-GDP ratio in EMDEs stood at 70 percent, the highest since 1970. The widening of fiscal deficits and the speed at which both government and private debt rose far exceeded changes in previous waves of debt.

This surge in debt in the 2010s coincided with a significant policy shift that has been increasingly more supportive of expansionary fiscal measures (Cao, Dabla-Norris, and Di Gregorio 2024). These developments have resulted in a steady worsening of government debt in EMDEs (figure 14.B). Against a background of weak growth and elevated interest rates, debt-servicing costs have risen sharply in many cases, making the need for fiscal consolidation more pressing (figure 14.C). Longstanding challenges related to rampant informality, domestic revenue mobilization, and public spending efficiency hinder EMDEs' ability to improve the fiscal outlook in the near term (Ohnsorge and Yu 2022; figure 14.D).

Underdeveloped financial markets

Financial sector depth and access, as well as efficiency, tend to be far lower in EMDEs than in advanced economies (World Bank 2019). Many EMDEs have bank-dominated financial systems with underdeveloped capital markets and inadequate regulatory capacity. Small- and medium-sized enterprises face particular challenges accessing finance. Measured by domestic credit to the private sector by banks, financial sector depth averaged 42 percent of GDP in EMDEs in 2023, compared to 96 percent in advanced economies. The bank lending-to-deposit spread, a measure of financial system efficiency, averaged about 8 percentage points in EMDEs during 2019-23, compared to about 3 percentage points in advanced economies.

Although some EMDEs have made progress in deepening their financial sectors since the global financial crisis, including through the development of local currency bond markets, many continue to face challenges in addressing information asymmetries and strengthening regulatory frameworks (Hashimoto et al. 2021; Wooldridge 2020). These features of EMDEs' financial systems make it challenging for policymakers to protect their financial systems from disruptions, whether such disruptions emerge as internal pressures or cross-border spillovers. In 2024, 52 percent of low- and lower-middle income EMDEs were assessed to be at a high risk of financial instability, versus only 8 percent of high and upper-middle-income EMDEs (World Bank 2024d). Shallow financial markets also hamper monetary policy transmission and reduce the feasibility of exchange rate flexibility, making EMDEs more vulnerable to external shocks. In the medium to long term, financial sector limitations and fragilities constrain EMDEs' ability to promote inclusive growth.

Failure to reform amid elevated policy uncertainty

Since the early 2000s, progress with structural and institutional reforms in many EMDEs has stalled (IMF 2019b; figures 15.A and 15.B). Lack of progress in implementing institutional reforms is one factor contributing to the sustained decline in FDI inflows as a share of GDP in these economies since the early 2010s (Adarov and Pallan forthcoming). In contrast, in EMDEs where there has been sustained institutional improvement, there has been higher

productivity and investment growth (Kilic Celik, Kose, and Ohnsorge 2024; World Bank 2024e).

Lower-middle-income countries and LICs may have more limited capacity to implement the comprehensive structural reforms necessary to foster trade and FDI, rendering them especially vulnerable to risks associated with increasing global economic fragmentation. An adverse or unclear regulatory environment would likely be a key concern for investors considering the viability of FDI projects in EMDEs (MIGA 2024). Some EMDEs may also be experiencing a weakening of institutions associated with the rise of populist movements, an increasing phenomenon since the early 2000s (Funke, Schularick, and Trebesch 2023).

Policy uncertainty has increased since the global financial crisis. Multiple measures of global economic and trade policy uncertainty have risen markedly since the 2000s (figures 15.C and 15.D). Contributing factors have included security challenges and armed conflicts, geopolitical tensions between major economies, acute domestic political challenges in some EMDEs, and changing approaches to cross-border trade and investment flows. Uncertainty plays a critical role in firms' decision-making processes (Alfaro, Bloom, and Lin 2024). Trade policy uncertainty—including relating to tariffs, transport costs, customs and border processes, and other nontariff restrictions—is associated with weaker investment and output growth.

Adaptation to sectoral and technological change

EMDEs face major structural changes in the global economy, including sectoral shifts and technological advances, and they need to position themselves to benefit from these changes. For example, between 2000 and 2023, the services sector accounted for two-thirds of global GDP growth and three-fourths of global employment growth. The transition to services-based economies in EMDEs is occurring without the large productivity gains that accompanied the transition from agriculture to manufacturing in some of these economies decades ago, in part because a large share of services sector jobs are in low-skilled, nontradable services. At the same time, digitalization has improved prospects for economies of scale and innovation in the services sector by reducing the need for physical proximity and physical capital (Nayyar and Davies 2024). Policies to support the availability and adoption of digital technologies may thus be an effective way to advance productivity-enhancing services sector growth.

Climate change and natural disasters

Climate change is a major challenge for EMDEs. It has already caused significant damage to lives and livelihoods, disproportionately affecting the poor. The frequency and severity of extreme weather events such as droughts, floods and storms affecting EMDEs has risen sharply (figure 16.A). Damages and losses from such disasters, already large—especially in the smallest EMDEs—are expected to continue rising as the effects of climate change become more intense (figure 16.B). In an adverse scenario, climate change could push more than 130 million people into extreme poverty by 2030, most of them in low- and lower-middle-income EMDEs (figure 16.C; Hallegatte and Rozenberg 2017; Jafino et al. 2020). A 1°C

upward temperature shock could potentially lead to a peak medium-term decline in global GDP as large as 12 percent (Bilal and Kanzig 2024; Nath, Ramey, and Klenow 2024). A major investment push is needed to accelerate mitigation and adaptation efforts related to climate change in EMDEs, yet significant financing constraints make achieving the scale of investment needed very difficult (figure 16.D).

Policy priorities in EMDEs

Given the challenges they face, EMDEs need to prioritize policy actions to boost investment and productivity, navigate the difficult external environment, and enhance macroeconomic stability and resilience. With appropriate policy interventions, some challenges can be converted into opportunities. For example, EMDEs have massive investment needs to address infrastructure gaps, speed up climate transition, boost economic growth, and meet broader development goals. However, if they employ prudent policies to accelerate investment, these could translate not only into higher near-term growth but also into stronger potential and long-term growth that would help them achieve broader development and climate-related goals. Policies to enhance the human capital of younger generations provide another example: if effective, they will allow some EMDEs to reap demographic dividends, and help enhance potential growth prospects. While there is no one-size-fits-all recipe to overcome the challenges facing EMDEs, three fundamental and equally important policy objectives lead to a common set of thematic priorities.

- *Boost investment and productivity.* EMDEs need to reinvigorate structural reforms. Especially for the least developed EMDEs, such reforms should aim to boost the growth of both physical capital, including by improving the investment and institutional environment, and foster human capital development. For more developed EMDEs, additional policy initiatives are needed to spur innovation and promote the diffusion of efficiency-enhancing technologies that can accelerate growth and create the conditions necessary to benefit more from integration (World Bank 2024f).
- *Navigate the difficult external environment.* In an increasingly difficult global economic environment marked by rising trade restrictions and geopolitical tensions, EMDEs need to implement a comprehensive set of policies to mitigate the adverse effects of trade tensions between major economies and to fully reap the benefits of cross-border linkages.
- *Enhance macroeconomic stability.* To maintain macroeconomic stability in the face of external shocks, EMDEs will need to ensure that sufficient buffers are in place, supported by well-designed and credible policy frameworks. With these bulwarks, EMDEs will be better able to use countercyclical policy when needed.

Although these common policy objectives cover a wide range of actions, the actions can involve significant synergies. Structural policies to reverse the growth slowdown, such as human capital development and business environment improvements, will also help put

EMDEs in a better position to withstand external shocks. Enhanced macroeconomic stability often sets the stage for effective structural reforms. Policy makers in EMDEs have a rich toolkit at their disposal to overcome the challenges confronting their economies, and in most cases they will need to deploy a combination of policy instruments.

Improving growth prospects by boosting investment and productivity

Growth is the single most important driver to improve living standards, reduce poverty, and make progress in broader goals of development. Growth is the single most important driver to improve living standards, reduce poverty, and make progress in broader goals of development. The appropriate sequencing and focus of policy interventions to improve sustainable and inclusive growth outcomes differ depending on specific country circumstances. However, policies generally need to focus on three key areas. First, EMDEs need to accelerate investment, particularly in infrastructure. Second, improving the business climate is key not only to boosting private investment growth but also to spurring innovation and the diffusion of technology (World Bank 2024f). Third, many EMDEs need to take further action to enhance human capital, setting the stage to boost labor productivity.

Investment acceleration

Investment is a critical engine of economic growth in EMDEs. Indeed, capital accumulation has been responsible for more than half of the potential output growth in these economies since 2000.[13] Reversing the prolonged, broad-based slowdown in investment growth in EMDEs since the 2009 global recession is thus critical for improving their growth prospects. Accelerating investment growth is also essential for addressing the large investment gaps in many EMDEs and for making progress toward broader development goals, including climate change-related objectives. Substantially higher investment is required to build and maintain infrastructure, adapt to climate change, facilitate the energy transition away from fossil fuels, accelerate poverty reduction, and advance shared prosperity.[14]

Many EMDEs have experienced investment accelerations, defined as periods of sustained increases in investment growth to relatively rapid rates, although the frequency of these episodes has decreased sharply since the 2000s (Stamm and Yu 2024). During the early 2000s, nearly half of EMDEs experienced an investment acceleration, while only about a quarter had an investment acceleration in the 2010s (figure 17.A). Investment accelerations tend to be accompanied by not only higher output growth, but also faster productivity growth (figure 17.B).

Policy reform is paramount for EMDEs to spark a new round of investment acceleration episodes. Well-designed fiscal, financial sector, and trade policy reforms all increase the likelihood of an investment acceleration (figure 17.C). A regulatory environment that promotes business dynamism and enables efficient capital and labor reallocation will help accelerate domestic private investment and make EMDEs more attractive as trade and

[13] The standard growth accounting framework to decomposes output growth into estimated contributions of the growth in factor inputs and the growth of total factor productivity. See, for example, Kilic Celik, Kose, and Ohnsorge (2024).
[14] For details on the links between investment and climate and infrastructure needs, see G20 Independent Experts Group (2023), Rozenberg and Fay (2019), Stamm and Vorisek (2024), Stamm and Yu (2024), and UNEP (2023).

investment partners, setting the stage for their economies to benefit from increased international integration. Past episodes of investment acceleration also suggest that while individual policy reforms increased the likelihood of starting a new episode, comprehensive packages of reforms resolving structural bottlenecks and enhancing macroeconomic stability tended to be more effective in triggering investment accelerations. This indicates that significant and wide-ranging policy reform efforts—drawing on experience gained in many countries—could promote an acceleration of investment that could help reverse the projected decline in potential growth expected in EMDEs during the coming years (figure 17.D). Effective scaling up of investment would be key to this, and is also vital for broader sustainable development objectives.

Accelerating investment in infrastructure is especially critical for many EMDEs: high-quality infrastructure can bring numerous economic benefits but is lacking in many cases. Robust transportation, electricity, and digital networks can enhance access to jobs, labor productivity, and economic diversification. High-quality transport infrastructure, paired with low transport costs, is key for improving EMDEs' international trade competitiveness and for attracting investment—and, increasingly, for complying with climate-related regulations of trading partners (Chen and Lin 2020; Dappe, Lebrand, and Stokenberga 2024; Maliszewska et al. forthcoming). Moreover, resilient infrastructure can act as a shock absorber during and after weather- and climate-related disasters (Hallegatte, Rentschler, and Rozenberg 2019).

Many EMDEs have made significant progress since 2000 on building and upgrading infrastructure, yet progress has been uneven across countries, and large gaps persist. In SSA, for example, where 600 million people lack access to electricity, expanding reliable coverage is vital for boosting productivity and enhancing the region's capacity to integrate into the global economy. To accelerate infrastructure investment, given fiscal constraints, policy makers in EMDEs will need to draw on private as well as government financing and ensure efficient project implementation (World Bank 2024a).

Business environment reforms

By lowering barriers to entry, reducing bureaucratic hurdles, and stimulating competition, regulatory reforms can drive innovation and, in the medium to long term, foster more diverse economies that are less vulnerable to sector-specific shocks. Some middle-income EMDEs have succeeded in becoming among the top economies in the world in terms of private sector regulatory environment and operational efficiency (World Bank 2024g). Other EMDEs can draw lessons from their experience. Implementation of structural reforms is more likely to be successful when it is well communicated and designed with input from a variety of stakeholders (IMF 2024b).

Strengthening competition policy is crucial to ensuring a fair and dynamic marketplace. By preventing monopolistic practices and acting to ensure a level playing field, and by effectively regulating markets that remain uncompetitive, competition policy can stimulate innovation and drive economic efficiency (World Bank 2020a, 2024f). A competitive environment benefits consumers through better products and services at lower prices, and

fosters the growth of new and existing businesses.

Innovation policy can contribute to overall dynamism, promoting productivity growth and making economies more adaptable and resilient to change. Many EMDEs also need to prioritize enhancing the capacity of the domestic economy to benefit from innovation. In this regard, it is important for policy to meet the needs of both incumbent firms and new entrants. The former can move an economy closer to the global technological frontier, while the latter can expand an economy's technological frontier (World Bank 2024c). Fostering collaboration and knowledge transmission through partnerships between academic institutions, the private sector, and international networks can accelerate the diffusion of new technologies developed elsewhere (OECD 2024). By advancing R&D, technological innovation, and knowledge sharing, EMDEs can build more resilient and innovative economies, not only with stronger productivity growth but also better equipped to navigate global challenges and seize emerging opportunities (Amaglobeli et al. 2023).

Human capital development and labor market policy

Policies to support the development of human capital are crucial not only to the growth of labor productivity but also to the achievement of inclusive and equitable economic growth. A multifaceted approach is needed. Investing in education, skills, training, and re-training is essential to boost labor productivity growth and to enable workers to adapt to structural change. Changing economic dynamics and new opportunities, including in the services sector, and boosting labor productivity and living standards. Also vital are access to early education, nutrition, and health care, which are still lacking in EMDEs, especially for those with the lowest incomes. Progress in these areas can significantly enhance the long-run growth of employment and incomes (Fox and Gandhi 2021). Improving the quality of education is also critical for raising the productivity of workers (Hanushek 2013).

Appropriate labor market policies differ across regions, partly due to differing demographic conditions. In SSA, policy makers will need to focus particularly on reforms designed to serve the needs of growing working-age populations, by creating the conditions for young entrants to the labor force to become productively employed (Filmer and Fox 2014). Even in economies with aging and declining working-age populations, youth unemployment can still be a significant concern for policy makers (World Bank 2022b). Some EMDEs, particularly those in MNA and SAR, could boost growth significantly by reducing barriers to female labor force participation (Cuberes and Teignier 2016; Pennings 2022; World Bank 2024b).

For middle-income EMDEs, where human capital is typically better developed than in LICs, growth can be raised through more efficient allocation of labor—for instance, by enhancing education-related selection processes and improving inefficient job matching in the labor market (Donovan, Lu, and Schoellman 2023). Effective coordination between educational institutions and employer needs can help ensure that individual training and development are relevant and applicable (Cunningham and Villaseñor 2016).

Navigating a difficult external environment

In an external trade environment marked by increasing protectionist measures, disrupted

value chains, and high uncertainty about the trade policy of major economies, EMDEs need to navigate their own policy making carefully, adopting a comprehensive approach to mitigate the adverse consequences of rising trade and investment restrictions and to take advantage of opportunities for cross-border cooperation. This approach can include multiple elements: (1) seeking strategic trade and investment partnerships with rapidly expanding economies and markets, including other EMDEs, thus furthering the growth of intra-EMDE trade that has become a feature of these economies' development path since 2000; (2) tackling high trade costs and low trade efficiency; (3) pursuing avenues to diversify trade and making wise use of industrial policy; (4) putting in place policies to protect vulnerable segments of the society from adverse effects of trade-related policy changes; and (5) reinvigorating engagement in global trade governance, with support from multilateral institutions, because global challenges require global cooperation and solutions.

Strategic trade and investment agreements

EMDEs need to work with willing partners to reduce barriers to trade and investment flows. Against the backdrop of ebbing global cooperation, they could consider pursuing stronger regional trade linkages. Regional trade agreements are not a perfect substitute for global initiatives to boost trade, but they can offer a means to diversify export destinations, reduce dependence on major economies, and provide an effective means for resolving trade disputes.

Two recent agreements that provide good examples of regional cooperation to ease cross-border trade and investment flows are the African Continental Free Trade Area (AfCFTA) and the Regional Comprehensive Economic Partnership (RCEP) in East Asia. If fully and effectively implemented, measures to facilitate trade and FDI under the AfCFTA stand to boost exports from Africa by more than 30 percent and intraregional exports by more than 100 percent by 2035 (Echandi, Maliszewska, and Steenbergen 2022). Incomes in Africa could be raised by 7 percent under the AfCFTA in the same period (World Bank 2020b). The RCEP, effective from January 2022 among 15 economies in EAP, aims to phase out tariffs on goods and reduce nontariff barriers to increase regional trade and value chain integration among members. Trade cost reductions, coupled with liberal rules of origin, could increase trade among members by 12 percent and boost real incomes by up to 2.5 percent by 2035, lifting 27 million people into middle-class status (Estrades et al. 2022).

EMDEs can also benefit from trade agreements between regions. The recent EU-Mercosur Free Trade Agreement, although still subject to ratification, signals support for rules-based international trade despite the global rise in protectionist policy. The agreement, expected to remove more than 90 percent of tariffs on goods between the two blocs, would significantly increase trade between them in agricultural products, critical minerals, and manufactured goods, and would also facilitate services trade.

Achieving the full potential of trade and investment agreements requires diligence in implementing the specific commitments made as part of those agreements. In the longer term, with EMDEs' shares of global trade and investment flows expected to continue growing, they are likely to rely increasingly on each other to expand their export markets,

regardless of the changes in global trade policies and protectionist trends.

Elevated uncertainty in the global trade environment increases the importance of depth in trade agreements, such that they reduce behind-the-border barriers associated with subsidies and industrial policies as well as tariffs and other direct trade-restricting measures such as tariffs. Deep trade agreements tend to generate more trade and FDI than shallow agreements, and the broader policy areas they address provide their members with more opportunities to reap the benefits of economic integration (Mattoo, Mulabdic, and Ruta 2022; Mattoo, Rocha, and Ruta 2020). These types of agreements can also prevent the trade and investment distortions associated with industrial policies, and can have positive spillover effects on excluded countries (Barattieri, Mattoo, and Taglioni 2024; Lee, Mulabdic, and Ruta 2023). It follows that deepening existing trade agreements can produce sizable macroeconomic benefits: it is estimated that deepening all existing preferential trade agreements to their highest level of ambition could increase GDP by an estimated 0.8 percent in SSA and by 1.7 percent in SAR (Fontagné et al. 2023; figure 18.A).

Trade costs and efficiency

In addition to pursuing cross-border agreements, EMDEs can adjust domestic policy to reduce trade costs and enhance trade efficiency. Despite falling over time, goods trade costs are substantially higher in EMDEs than in advanced economies (figure 18.B; Ohnsorge and Quaglietti 2024). The difference is especially pronounced for agricultural trade costs. For goods trade, substantial cost reductions could be achieved by lowering transportation costs, including through infrastructure upgrades. Efficiency-raising improvements in ports, roads, and airport facilities can all reduce costs (Chen and Mattoo 2008; Moïsé and Le Bris 2013). There is also significant scope to reduce services trade costs, which are nearly double goods trade costs (WTO 2019). EMDEs would also benefit from initiatives to improve trade efficiency, such as streamlining customs procedures, easing regulatory compliance, improving logistics, and reducing nontariff barriers. Recent evidence suggests that some upper-middle-income EMDEs have achieved higher efficiency than advanced economies in moving goods across borders (World Bank 2023c).

Trade diversification

EMDEs should ensure that their policies meet the needs of a changing trade and investment landscape—in particular, rapid growth in trade and investment in services fueled by technological advances (Baldwin, Freeman, and Theodorakopoulos 2023). EMDEs' share of global services trade is already rising. To further benefit from services trade, they need to ensure that workers have the education and skills needed for services-based jobs and that they are equipped to participate in services trade delivered digitally (World Bank 2024h; World Bank and WTO 2023). Digital technologies can increase services sector productivity and generate more opportunities than traditional (nondigital) services for firms to participate in GVCs, in addition to helping reduce services trade costs (World Bank 2024i; WTO 2019). Services trade can also contribute to inclusive growth by expanding opportunities for small enterprises and for female and young workers.

Industrial policy

The use of industrial policy to support certain economic sectors—interventions such as subsidies and preferential regulatory treatment, often intended to promote exports—has become increasingly widespread since the late 2000s, particularly among advanced economies (Juhász et al. 2022; World Bank 2024b). Designed and implemented well, these policies can facilitate knowledge and technology spillovers, input-output linkages, and job creation, as well as address sector-specific coordination failures and reduce costs and uncertainty for private investors (Harrison and Rodríguez-Clare 2010). They can help EMDEs attract FDI and, later, integrate domestic businesses into GVCs (Adarov and Stehrer 2021). In addition to strategic competitiveness, industrial policy has been employed to address challenges related to climate change, supply chain resilience, and national security (Evenett et al. 2024; Juhász, Lane, and Rodrik 2024). Industrial policies that are relatively more successful tend to focus on technology adoption, competition, avoidance of trade-restrictive measures, and transparency and accountability (World Bank 2024b).

However, there are also downsides to industrial policy (Pop and Connon 2020). The fiscal costs of industrial policy can be high. The intended effects can be hindered by institutional weaknesses such as corruption, regulatory challenges, and public sector inefficiency. It is also often argued that industrial policies are anticompetitive, and that they distort private investment in the long term. Successful industrial policy requires that the protected sectors eventually operate without public support and that discounted future benefits outweigh the cost of protection.

EMDEs should carefully assess the costs and benefits when implementing industrial policies, including alignment with WTO commitments. Support for industries should be time-bound, targeted, transparent, and based on specific, measurable objectives, with outcomes closely monitored. EMDEs should aim to minimize cross-border spillovers from industrial policy. While industrial policies can help steer foreign investment toward priority certain priority sectors and regions, policies to strengthen institutions, human capital development, R&D, macroeconomic stability, and financial development remain important for long-term development in these economies.

Protection of the vulnerable

Policy makers in EMDEs, as in advanced economies, may need to take action to contain and offset the adverse effects on their economies, and particularly on the most vulnerable, of trade tensions between major economies, as well as tensions resulting from rapid technological change and shifting supply and demand conditions. If protectionist policies and heightened trade uncertainty lead to significant job and earnings losses, carefully designed temporary income support, retraining programs, and targeted tax policy changes may be needed (Goldberg and Reed 2023). Well-designed active labor market policies can help reduce the duration of unemployment episodes and maintain relatively low unemployment rates (Andersen and Svarer 2012; Card, Kluve and Weber 2018). Targeted technical assistance programs can also be provided to firms negatively affected by trade disruptions.

Multilateral institutions

Global challenges require global cooperation and solutions. Although EMDEs may pursue new or improved trade agreements with regional or other strategic partners, these efforts should be complemented by renewed engagement in global trade governance. Multilateral institutions play important roles in preserving a rules-based international trade system, promoting dialogue to reduce uncertainty about trade and investment policies, and analyzing the global consequences of protectionist policies (World Bank 2020a). They provide fora for coordinating efforts to reduce trade barriers, and advice on policy strategies to avoid distortive and damaging protectionist and industrial policies, and to establish level playing fields for cross-border trade and investment flows. These institutions also provide needed technical and financial assistance to enable structural reforms in EMDEs.

To prevent further trade fragmentation and reinvigorate trade growth, it is essential to restore a fully functioning, rules-based, multilateral trade system, complete with an efficient and effective dispute settlement system at the World Trade Organization (WTO) accessible to all its members. EMDEs should actively engage in multilateral negotiations and reforms to ensure the system meets their needs (WTO 2024). Additionally, the international community needs to find ways to mitigate the adverse effects of geopolitical tensions on trade, foster a level playing field for international commerce, reduce trade policy uncertainty, and enhance transparency, especially regarding distortions caused by industrial policy measures (IMF et al. 2022).

With regard to such global challenges as climate change and pandemics, the multilateral institutions need to be well positioned and adequately resourced to help countries better identify and mitigate adverse cross-border spillovers (Aiyar et al. 2023; World Bank 2021c). This includes developing and promoting internationally agreed-upon standards for the measurement and reporting of carbon emissions. Multilateral institutions can also help establish and strengthen mechanisms to facilitate the availability of vital goods, including food and medical equipment, that are acutely needed during crises. The urgency of facilitating the free movement of vital goods was evident during the COVID-19 pandemic, and such facilitation will be increasingly important as climate change-related disasters become more frequent and intense.

Enhancing macroeconomic stability

With the global growth outlook sluggish and the risk of external shocks high, it is imperative that EMDEs strengthen their fiscal, monetary, and financial sector policy frameworks. Fiscal space and financial cushions provide a crucial line of defense to mitigate the adverse impact of sharp movements in currencies and global interest rates. Policy reforms aimed at strengthening macroeconomic stability are likewise key for maintaining investor confidence and managing systemic risks.

In the past quarter century, many EMDEs have employed countercyclical policies to stabilize activity in the face of macroeconomic fluctuations. Buffers accumulated and policy improvements implemented in the period preceding the global financial crisis allowed many

EMDEs to use countercyclical policies to mitigate its impact (Koh and Yu 2019). EMDEs also used a large array of support measures during the COVID-19 pandemic, although a narrowing of fiscal space in the 2010s meant that the policy response in these economies had to be notably smaller than that in advanced economies (World Bank 2021a).

Fiscal policy

Building and maintaining fiscal buffers remains a cornerstone of sound fiscal policy in EMDEs, in part because many of these economies have limited capacity to respond to shocks with monetary policy alone. Capacity to provide temporary fiscal support in response to adverse shocks—by increasing public spending or reducing taxes—is contingent on having adequate fiscal space. Yet fiscal space in EMDEs, already narrower than in advanced economies, has been eroded further in recent years, particularly by the policy actions required to meet needs arising from the COVID-19 pandemic and other crises, and by the increase in financing costs stemming from the rise in global interest rates and the large and growing stocks of government debt.

For many EMDEs, greater revenue mobilization is essential for restoring fiscal space. Broadening the tax base, undertaking measures to reduce informal transactions, curbing exemptions, and upgrading tax administration capacity can improve compliance and increase revenues (Dom et al. 2022; Ohnsorge and Yu 2022; World Bank 2023d). On the expenditure side, EMDEs need to improve spending efficiency. Different public expenditure items affect growth and equity in different ways, requiring that expenditure restraint be selective. Targeting social benefits and subsidies more effectively would reduce distortions and generate budgetary savings while preserving support for vulnerable groups. Growth-enhancing public investment, including infrastructure upgrades, should generally be prioritized, although projects should be rigorously evaluated in terms of their economic returns and alignment with development priorities (Adarov 2024). Investment in human capital through effective education and health expenditures should also be prioritized. Increasing the efficiency of government administration and avoiding investments that carry little economic return may offer ways of reducing unproductive government spending.

In part because of limited fiscal buffers, fiscal policy in EMDEs has tended to be more procyclical than in advanced economies, especially in the three-fifths of EMDEs that are commodity exporters. Procyclical fiscal policy accentuates macroeconomic fluctuations, thereby adversely affecting growth in EMDEs. Credible rules-based fiscal frameworks can reduce fiscal volatility and procyclicality, build investor confidence, and improve resilience to shocks. In this regard, EMDEs are much better positioned than they were in 2000, when only 23 EMDEs used fiscal rules. By 2021, 70 EMDEs used at least one type of fiscal rule, most often balanced budget rules and debt rules, while 61 employed more than one type of rule (figure 19.A). Such rules are credible, however, only when countries consistently adhere to the specified numerical limits. Implementing best practices in debt management can help ensure that fiscal policy remains disciplined and responsive to economic cycles rather than influenced by short-term political pressures (World Bank 2024e). Stabilization funds can also be effective in managing public revenue volatility, especially in resource-rich EMDEs,

by saving windfall revenues during boom periods for use during downturns (Gill et al. 2014; World Bank 2024e).

Monetary and financial sector policy

The primary objectives of central banks in EMDEs, as in advanced economies, should be the maintenance of reasonable price stability in the medium term together with financial sector stability. To achieve these objectives, EMDEs need to have countercyclical monetary policy instruments available, as well as adequate international reserves that can be used to mitigate currency and capital flow volatility when needed, and instruments to regulate financial institutions and markets. Because of their susceptibility to terms-of-trade shocks, commodity-reliant economies may need to be particularly diligent in accumulating reserve buffers, bearing in mind that reserve accumulation may cause excessive monetary expansion unless it is sterilized.

Monetary policy frameworks in many EMDEs have become better defined and more disciplined in recent decades. Inflation-targeting frameworks have become more common: as of 2022, they were in use in 35 EMDEs, compared to 22 in 2010 and only six in 2000 (figure 19.B). Increased use of inflation targeting may have contributed to lower macroeconomic volatility during the 2010s relative to the 2000s (figure 19.C). However, it did not prevent a marked increase in volatility in 2020-23, which may be attributed in large part to the pandemic, Russia's invasion of Ukraine, supply chain disruptions, and sharp movements in oil and food prices.

Improved monetary policy frameworks helped many EMDE central banks to better manage the surge in inflation that started in 2021 (World Bank 2024a). For some EMDEs, these improvements include greater central bank independence, which allows central banks to make decisions in line with established mandates, mainly to contain inflation, rather than being swayed by short-term political considerations. Central banks operating independently, without political interference, are more likely to maintain credibility and to be effective at managing actual and expected inflation expectations and responding to macroeconomic shocks (figure 19.D; Garriga and Rodriguez 2020; Kose et al. 2019).

The increasing role of global factors in explaining inflation and international financial flows, stemming partly from increasing trade and financial integration, can amplify the cross-border spillovers of interest rate movements and be a source of financial market volatility. Central banks and other regulatory institutions need to employ flexible and well-targeted policy interventions to reduce financial market volatility, and to mitigate foreign currency risk and asset price misalignment. If capital flows are a source of external imbalances, employing capital flow management measures to correct the underlying imbalances and stabilize currency markets can be appropriate, although they should not impede necessary adjustments to fundamentals. Coordinated actions across countries—including information sharing and regulatory alignment—can help reduce financial market volatility by enhancing the design and effectiveness of monetary and financial sector policies (Eichengreen 2016; Clarida 2023).

Amid heightened uncertainty, EMDEs need to strengthen their macroprudential policy frameworks to ensure that financial institutions have adequate capital buffers to cope with shocks. The risk of financial instability can be minimized through improved monitoring and management of credit flows. Since financial markets in most EMDEs are dominated by the banking sector, enhancing financial sector regulation and supervision can contain the risk of banks with weak balance sheets generating contagion affecting the entire financial system (Ferreira, Jenkinson, and Wilson 2019; Jones and Knaack 2019). However, such frameworks should match each country's institutional capacity and stage of financial sector development, and should be expanded in a way that allows effective enforcement (Anginer, Demirgüç-Kunt, and Mare 2018).

The development of the financial sector is an integral part of economic growth and plays an important role in absorbing shocks, but the depth, access, and efficiency of the financial sector are limited in many EMDEs (World Bank 2019). Financial development could be promoted by establishing a strong business and regulatory environment, but the pace of development needs to be carefully monitored to mitigate financial stability risks, particularly given that the effect of financial vulnerabilities could be amplified in an environment of high uncertainty (IMF 2024). The stability-oriented foundation would help create conditions for sustainable financial deepening and market development over time. To promote the development of domestic capital markets, particularly related to local currency bond and equity transactions, financial infrastructure and legal frameworks, including reliable trading and settlement systems, clear disclosure requirements, and strong creditor rights protections, need to be put in place (Hashimoto et al. 2021).

Conclusion

The period around the turn of the twenty-first century was transformative for many EMDEs. Their ascendance in the global economy was propelled by tailwinds associated with a broad-based embrace of the advantages of trade and financial integration. They liberalized their domestic financial markets; undertook structural reforms; and made improvements in fiscal, monetary, and financial sector policy frameworks that have bolstered macroeconomic stability. As they experienced a surge in cross-border trade and financial flows, EMDEs became increasingly important players in global supply chains and commodity markets. Highlighting their growing prominence in the global economy, EMDEs have accounted for the majority of global growth since the beginning of the century.

EMDEs' rapid integration into the global economy has coincided with substantial changes in their international business cycle linkages. Business cycle synchronization both among EMDEs and between EMDEs and advanced economies has increased markedly since the 1990s, reflecting stronger interdependence through trade, financial, and commodity price channels. An EMDE-specific business cycle has also emerged over time, reflecting deepening integration among these economies. Spillovers from the largest EMDEs, the EM3, to other EMDEs are sizable but they remain more limited than those from the largest advanced economies, the AE3.

Despite these developments, EMDEs face daunting headwinds that threaten to reverse their earlier gains. Global trade and financial integration has slowed since the late 2000s. Although the share of global FDI inflows directed to EMDEs has risen, FDI inflows as a proportion of their GDP are now substantially lower than in the 2000s. Rising protectionist measures and geopolitical fragmentation have made navigating the external environment more challenging. EMDEs have made little progress in reforming their institutions since the 2000s. Climate-related disasters have become more frequent and costly. Moreover, fiscal constraints have intensified, exacerbated by external shocks such as the COVID-19 pandemic, armed conflicts, and rising geopolitical tensions.

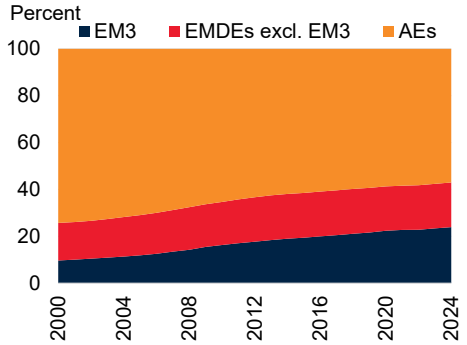
Potential growth in EMDEs is expected to slow to about 4 percent in the 2020s—down from more than 5 percent in the 2010s. Long-term growth projections for these economies have repeatedly been revised downward. Investment growth has been weakening over time. They also have experienced a slowdown in productivity growth as some of them have moved closer to the global technology frontier and begun to exhaust the scope for reallocation of labor from low-productivity agriculture. Population aging and slower growth of working-age populations have been adverse for GDP growth in some EMDEs.

To overcome these challenges and sustain progress, many EMDEs need to prioritize policy actions in three fundamental and equally important areas. EMDEs adopted policy in each of these three areas in the early 2000s, when they also achieved robust growth rates and made progress on development goals. First, EMDEs need to reinvigorate structural reforms to accelerate investment and productivity growth. This includes improving institutional quality, fostering human capital development, and advancing digital transformation. Policies also need to mitigate the adverse effects of protectionist policies and geopolitical fragmentation while taking advantage of opportunities for untapped cross-border cooperation. Strengthening multilateralism and fostering international diversification in trade and financial networks are essential to addressing shared challenges such as climate change and ensuring that EMDEs continue to play a pivotal role in the global economy. Finally, EMDEs need credible macroeconomic frameworks with appropriate policy buffers.

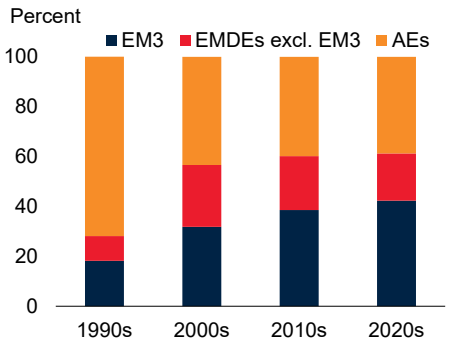
Figure 1. EMDEs' contribution to global output and growth

EMDEs have accounted for a growing share of global output over the past 25 years. Their contribution to global growth increased from about one-quarter in the 1990s to about three-fifths in the 2000s, 2010s, and 2020s.

A. Shares of global GDP



B. Shares of global GDP growth

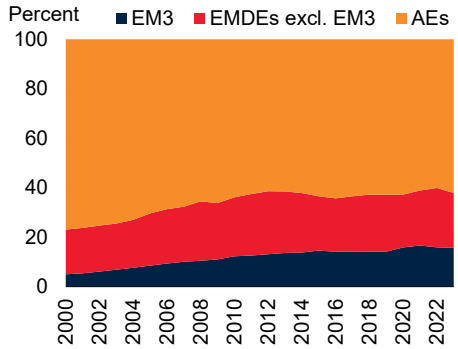


Source: World Bank.
Note: AEs = advanced economies; EM3 = China, India, and Brazil; EMDEs = emerging market and developing economies. Gross domestic product (GDP) is measured in average 2010-19 prices and market exchange rates. Sample includes 154 EMDEs and 38 advanced economies.
A. Data for all economies in 2024 are estimates.
B. Bars show the average contributions to annual growth. Data for the 2020s includes 2020-24.

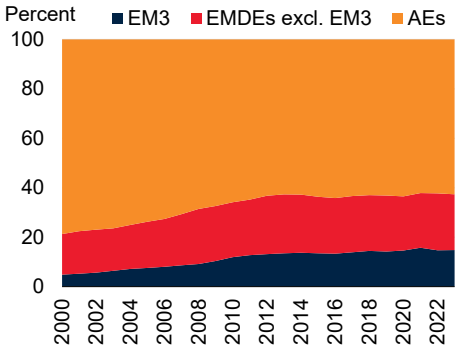
Figure 2. EMDEs in global trade

An increasing share of global trade is attributable to EMDEs, especially the EM3. Increasingly, EMDEs are trading with other EMDEs. Although services represent a smaller share of global trade than goods, services trade growth has outpaced goods trade growth since the early 2010s, and EMDEs account for an increasing share of services trade.

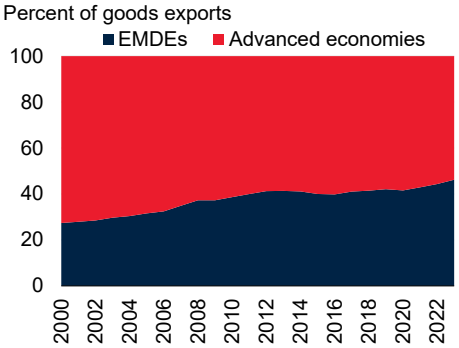
A. Shares of global exports



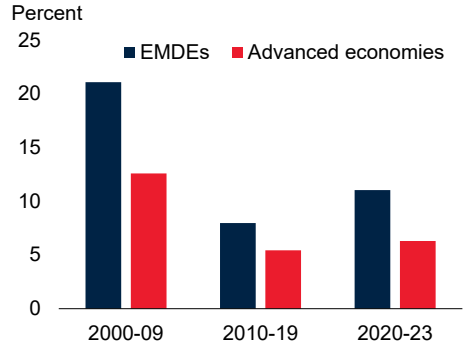
B. Shares of global imports



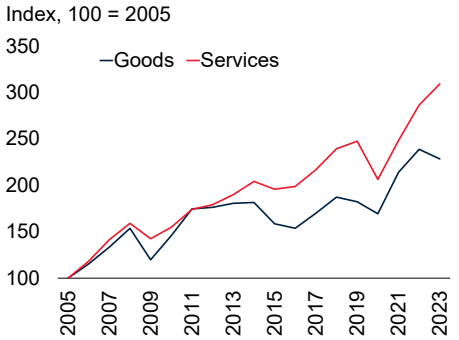
C. Destinations of goods exports from EMDEs



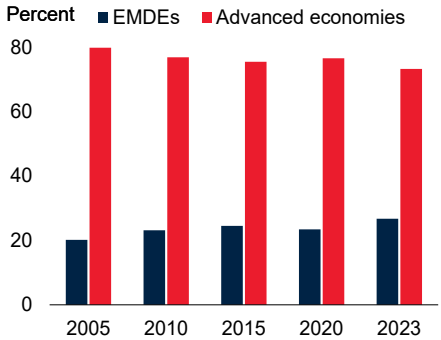
D. Growth of goods exports from EMDEs by destination



E. Global goods and services exports



F. Global services exports by origin



Sources: IMF Direction of Trade Statistics (database); UNCTAD; World Bank; World Development Indicators (database).

Note: AEs = advanced economies; EM3 = China, India, and Brazil; EMDEs = emerging market and developing economies; EMDEs excl. EM3 = emerging market and developing economies excluding China, India, and Brazil. Sample includes 154 EMDEs and 38 advanced economies.

A.-F. Exports and imports are measured in nominal U.S. dollars.

A.B. Data include goods and services trade. Last observation is 2023.

C.D. Last observation is 2023.

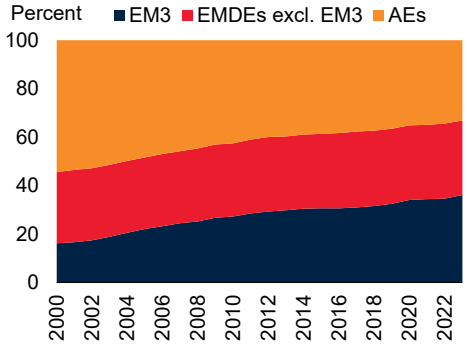
D. Bars show simple averages of year-over-year growth during each decade. Last observation for the 2020s is 2022.

E.F. Data begin in 2005 in the original source.

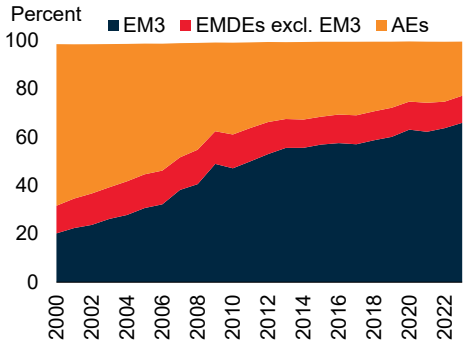
Figure 3. EMDEs in global commodity markets

Since the mid-2000s, EMDEs' consumption of energy and metals has exceeded that of advanced economies, reflecting rapid growth in China and some other major EMDEs. At the regional level, concentrated shares of commodity exports reflect the geographical distribution of natural resources.

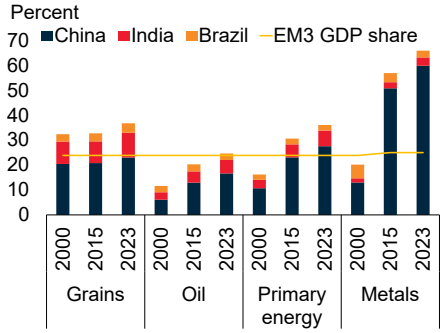
A. Shares of global primary energy consumption



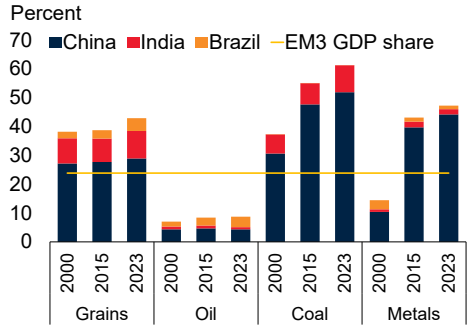
B. Shares of global metals consumption



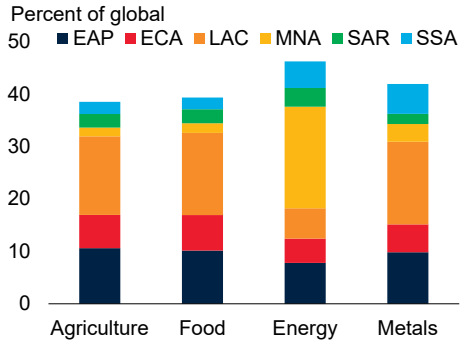
C. Shares of global commodity consumption



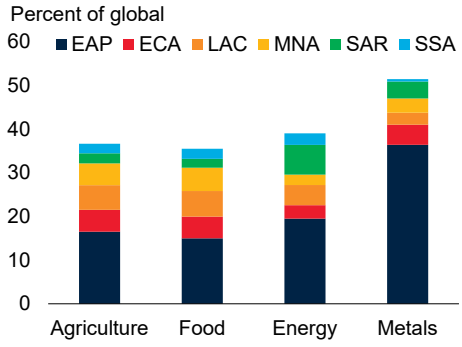
D. Shares of global commodity supply



E. Shares of global commodity exports by region



F. Shares of global commodity imports by region



Sources: Refinitiv (database); UN Comtrade (database); U.S. Department of Agriculture; The Energy Institute; World Bank.

Note: Geographic regions include only EMDEs. AEs = advanced economies; EM3 = China, India, and Brazil; EAP = East Asia and Pacific; ECA = Europe and Central Asia; EMDEs = emerging market and developing economies; LAC = Latin America and the Caribbean; MNA = Middle East and North Africa; SAR = South Asia; SSA = Sub-Saharan Africa. Sample includes 154 EMDEs and 38 advanced economies.

A. Primary energy includes oil, coal, and natural gas. Last observation is 2023.

B. Metals include aluminum, nickel, copper, lead, zinc and tin. Last observation is 2023.

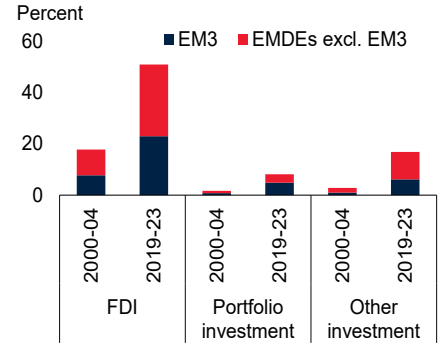
A.D. Primary energy includes oil, coal, and natural gas. GDP share is for 2024.

E.F. Data for 2023. Sample includes 17 economies in EAP, 19 in ECA, 29 in LAC, 12 in MNA, 5 in SAR, and 34 in SSA.

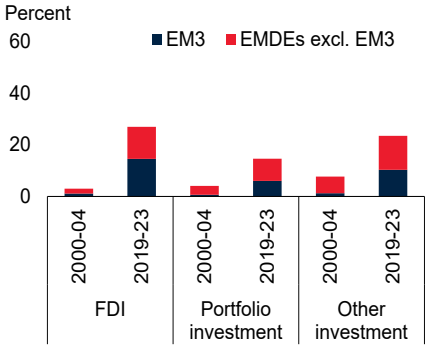
Figure 4. EMDEs in global financial markets

EMDEs account for a growing share of global inflows and outflows of FDI and remittances. Between 2000-04 and 2019-23, EMDEs' average share of global FDI inflows nearly tripled. Advanced economies continue to be the source of most inflows of FDI and remittances to EMDEs.

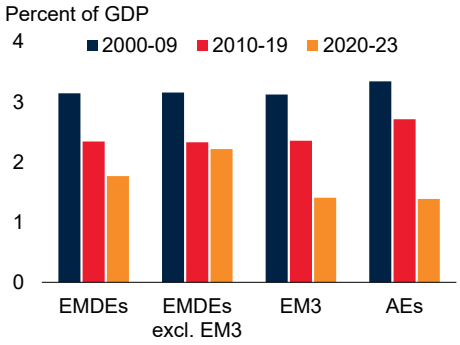
A. Shares of global financial inflows



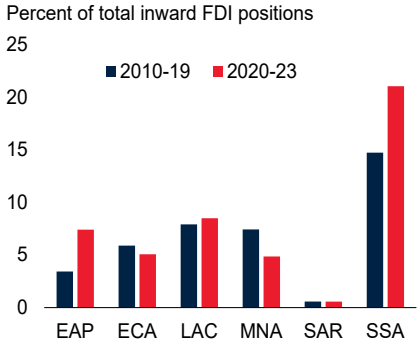
B. Shares of global financial outflows



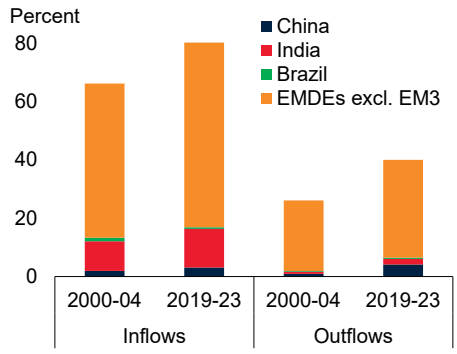
C. FDI inflows



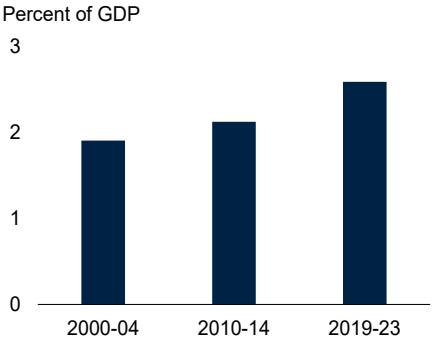
D. Intraregional FDI positions



E. Shares of global remittances



F. Remittance inflows to EMDEs excluding the EM3



Sources: IMF Balance of Payments and International Investment Position (database); IMF Coordinated Direct Investment Survey (database); World Development Indicators (database); World Bank.

Note: Geographical regions include EMDEs only. AEs = advanced economies; EAP = East Asia and Pacific; ECA = Europe and Central Asia; EM3 = China, India, and Brazil; EMDEs = emerging market and developing economies; LAC = Latin America and the Caribbean; MNA = Middle East and North Africa; SAR = South Asia; SSA = Sub-Saharan Africa.

A.B. FDI, portfolio investment, and other investment data are net inflows and outflows from balance of payments data. Other investment is a proxy for bank lending flows.

C. FDI data are net inflows. Bars show decade averages of annual GDP-weighted group averages.

D. Bars show inward FDI positions by economies in the same regions as a share of total inward positions in respective regions.

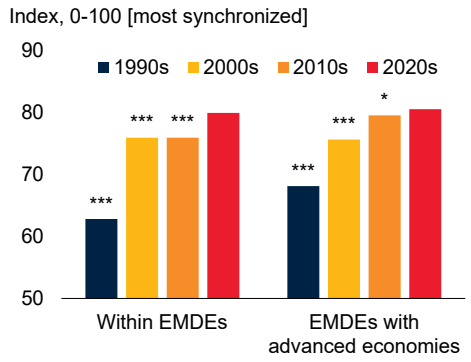
E. Remittances inflows and outflows refer to remittances received and remittances paid,respectively.

F. Data are aggregated using GDP weights.

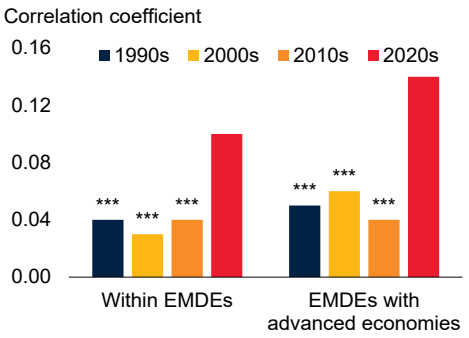
Figure 5. Synchronization of business cycles

Synchronization of business cycles across EMDEs and between EMDEs and advanced economies has strengthened since the 1990s.

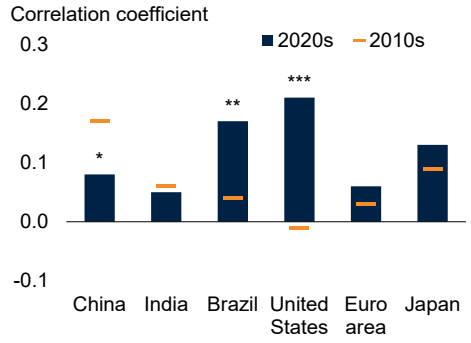
A. Concordance of business cycles



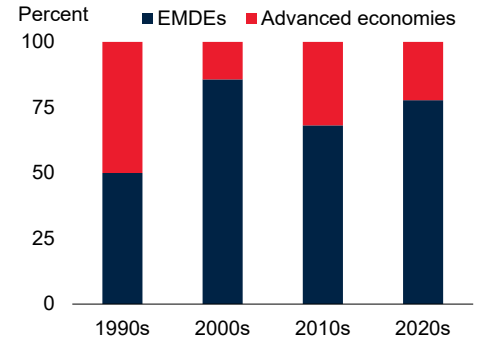
B. Correlation of GDP growth



C. Correlation of GDP growth in EMDEs with major economies



D. Economies in the top quartile of the most synchronized with other economies



Source: World Bank.

Note: EMDEs = emerging market and developing economies; GDP = gross domestic product. Sample includes 72 EMDEs and 19 advanced economies (treating euro area economies as a single economy).

A. Unweighted average of all the two-country concordance indices, based on quarterly real GDP, between two EMDEs or between an EMDE and an advanced economy over each decade. Data for the 2020s include 2020Q1-2023Q4. * and *** denote that the concordance index for the 1990s, 2000s, and 2010s is statistically significantly different from that for the 2020s at the 10 percent and 1 percent levels, respectively.

B. Unweighted average of all the correlation coefficients of quarter-over-quarter annualized real GDP growth between two EMDEs or between an EMDE and an advanced economy over each decade. A bar for the 2020s reflects data for 2020Q1-23Q4. The coefficients are obtained by partial correlation, after the effects of global recessions in 1991 (1990Q4-1991Q1), 2009 (2008Q3-2009Q1), and 2020 (2020Q1-Q2) and the following quarters (1991Q2, 2009Q2, and 2020Q3) as immediate rebounds from respective recessions are removed. *** denotes that correlation coefficients for the 1990s, 2000s, and 2010s are statistically significantly different from that for the 2020s at the 1 percent level.

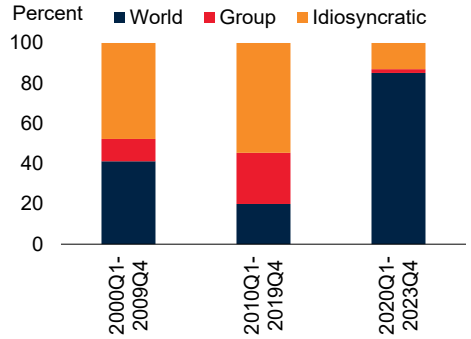
C. Unweighted average of all the correlation coefficients of quarter-over-quarter annualized real GDP growth between an EMDE and each of six major economies, as denoted on the horizontal axis, over each decade. Data for the 2020s cover 2020Q1-23Q4. The coefficients are obtained by partial correlation, as explained in the note for panel B. *, **, and *** denote that the correlation coefficient for the 2010s is statistically significantly different from that for the 2020s at the 10 percent, 5 percent, and 1 percent levels, respectively.

D. The shares of EMDEs and advanced economies in the top quartile of countries, based on the degree of synchronization in each decade. Synchronization in each country is measured by the average concordance index, based on quarterly real GDP, of an economy with all other economies.

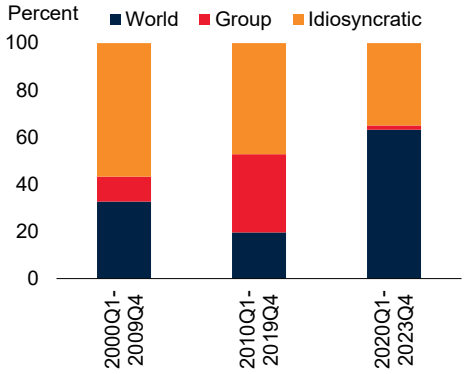
Figure 6. Decomposition of business cycle variance

An EMDE-specific factor contributed more to the variation of business cycles in EMDEs in the 2010s than in the 2000s, suggesting that business cycles in EMDEs have become more synchronized. In contrast, for advanced economies, the share of business cycle variation explained by the advanced-economy-specific factor was mostly stable between the 2000s and 2010s, although it increased in the AE3.

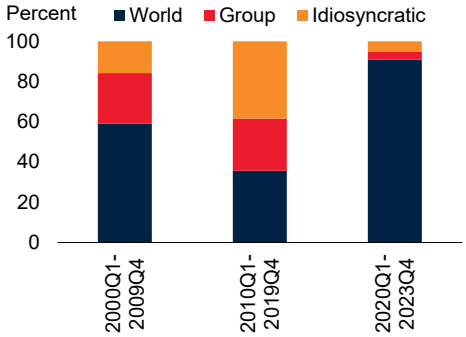
A. Contributions of factors to business cycle variation in EMDEs



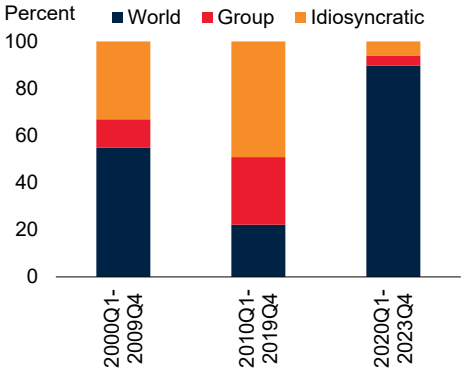
B. Contributions of factors to business cycle variation in EM3



C. Contributions of factors to business cycle variation in advanced economies



D. Contributions of factors to business cycle variation in AE3

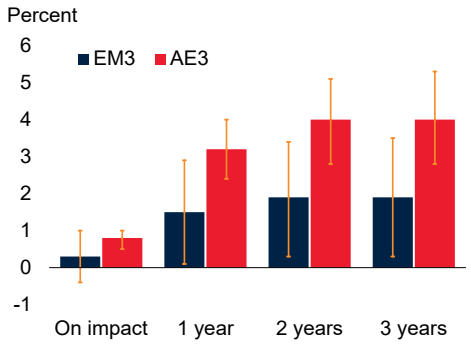


Source: World Bank.
Note: AE3 = United States, euro area, and Japan. EMDEs = emerging market and developing economies; EM3 = China, India, and Brazil. Sample includes 15 EMDEs and 15 advanced economies. Annex 3.1 contains additional methodological information.

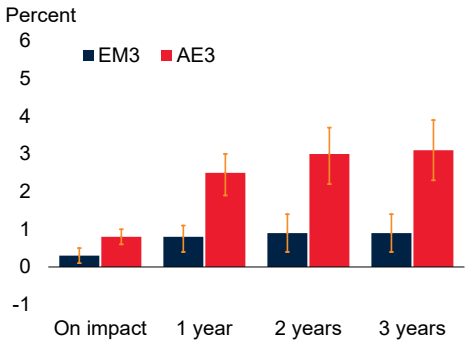
Figure 7. Spillovers from the EM3 and AE3

Growth shocks in the EM3 have sizable spillovers on output in other EMDEs and globally. A 1-percentage-point increase in EM3 output growth is associated with a cumulative increase in output of 1.9 percent in other EMDEs and 0.9 percent growth in the global economy after three years. However, growth spillovers from the EM3 are considerably smaller than spillovers from the AE3. Growth shocks in the EM3 also explain less of the growth variance in other EMDEs and the global economy than do shocks in the AE3.

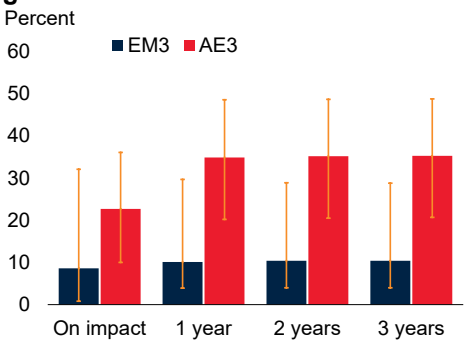
A. Cumulative output responses in other EMDEs from a 1-percentage-point growth increase in the EM3 and AE3



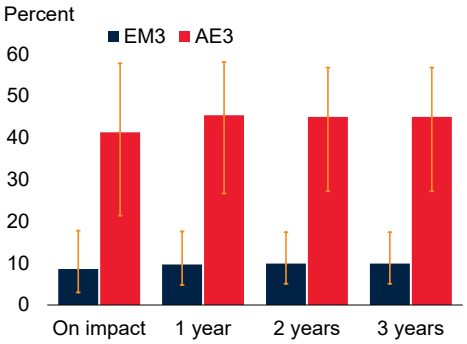
B. Cumulative output responses in the global economy from a 1-percentage-point growth increase in the EM3 and AE3



C. Other EMDEs' growth variance explained by growth variations in the EM3 and AE3



D. Global growth variance explained by growth variations in the EM3 and AE3

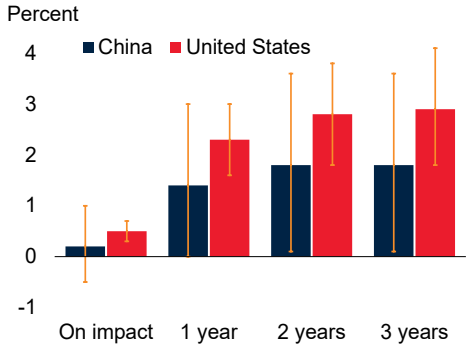


Source: World Bank.
Note: AE3 = United States, euro area, and Japan; EM3 = China, India, and Brazil; other EMDEs = emerging market and developing economies, excluding the EM3. Solid bars represent medians from the posterior distribution; error bars show 16-84 percent confidence bands. Results are based on quarterly data covering the period 2000Q1-2023Q4. Annex 3.2 contains further methodological information.
A. Bars show the cumulative impulse responses of output in other EMDEs to a 1 percentage point increase in output growth in the EM3 and the AE3.
B. Bars show the cumulative impulse responses of output in the global economy to a 1 percentage point increase in output growth in the EM3 and the AE3. Impulse responses are calculated as the GDP-weighted average of EM3, other EMDEs, and AE3 responses.
C. Bars show the (forecast error) variance of other EMDEs explained by growth variations in the EM3 versus the AE3.
D. Bars show the (forecast error) variance of the global economy explained by growth variations in the EM3 versus the AE3. The variance share of the global economy is calculated as the GDP-weighted average of the variance shares of the EM3, other EMDEs, and the AE3.

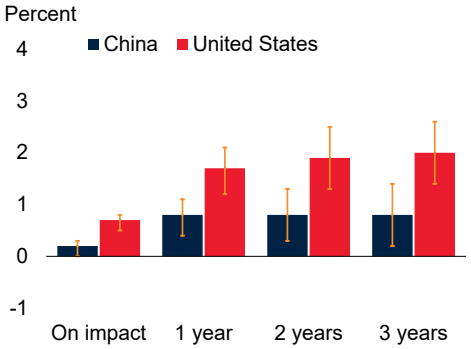
Figure 8. Spillovers from China and the United States

A 1-percentage-point increase in growth China leads to substantial output spillovers in other EMDEs and the global economy. Yet the cumulative magnitude of spillovers to the global economy is about half of that of spillovers from the United States. Growth shocks in China also explain a smaller share of the growth variance in other EMDEs and the global economy than do shocks in the United States.

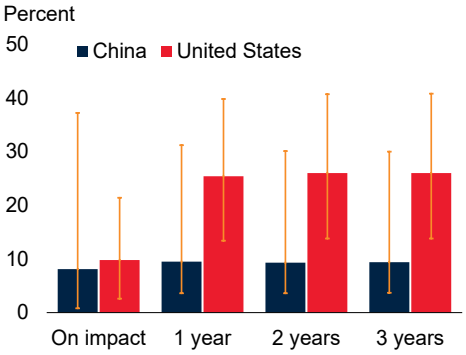
A. Cumulative output responses in other EMDEs from a 1-percentage-point growth increase in China and the United States



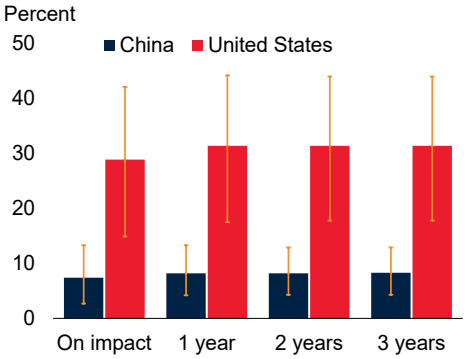
B. Cumulative output responses in the global economy from a 1-percentage-point growth increase in China and the United States



C. Other EMDEs' growth variance explained by growth variations in China and the United States



D. Global growth variance explained by growth variations in China and the United States

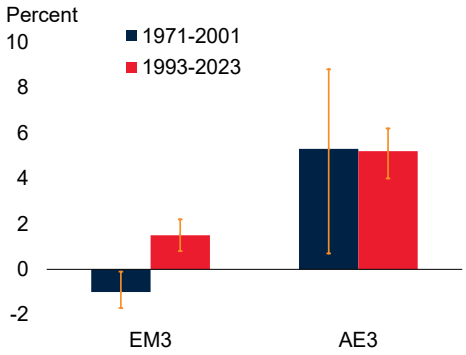


Source: World Bank.
Note: AE3 = United States, euro area, and Japan; EM3 = China, India, and Brazil; other EMDEs= emerging market and developing economies, excluding the EM3. Solid bars represent medians from the posterior distribution; error bars show 16-84 percent confidence bands. Results are based on quarterly data covering the period 2000Q1-2023Q4. Annex 3.2 contains further methodological information.
A. Bars show the cumulative impulse responses of output in other EMDEs to a 1 percentage point increase in output growth in China and the United States.
B. Bars show the cumulative impulse responses of output in the global economy to a 1 percentage point increase in output growth in China and the United States. Impulse responses are calculated as the GDP-weighted average of EM3, other EMDEs, and AE3 responses.
C. Bars show the (forecast error) variance of other EMDEs explained by growth variations in China versus the United States.
D. Bars show the (forecast error) variance of the global economy explained by growth variations in China versus the United States. The variance share of the global economy is calculated as the GDP-weighted average of the variance shares of the EM3, other EMDEs, and the AE3.

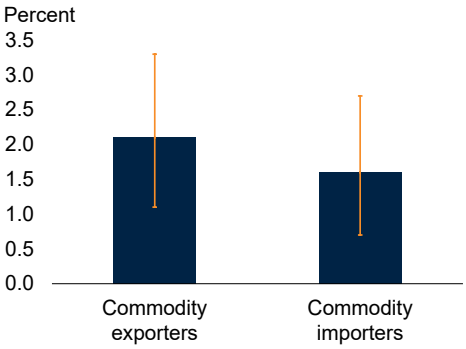
Figure 9. Spillovers over time and across country groups

Spillovers from the EM3 to other EMDEs have increased over time. Commodity prices play an important role in transmitting cross-border shocks.

A. Cumulative output responses in other EMDEs after three years from a 1-percentage-point growth increase in the EM3 and AE3



B. Cumulative output responses in other EMDE commodity exporters and importers after three years from a 1-percentage-point growth increase in the EM3



Source: World Bank.

Note: AE3 = United States, euro area, and Japan; EM3 = China, India, and Brazil; other EMDEs = emerging market and developing economies, excluding the EM3. Solid bars represent medians from the posterior distributions; error bars show 16-84 percent confidence bands.

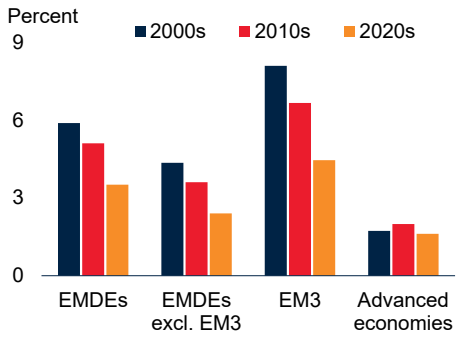
A. Chart shows the cumulative impulse responses of output at a 3-year horizon to a 1 percentage point increase in EM3 and AE3 growth. Annex 3.2 contains further methodological information.

B. Chart shows the cumulative impulse responses of output at a 3-year horizon to a 1 percentage point increase in EM3 growth.

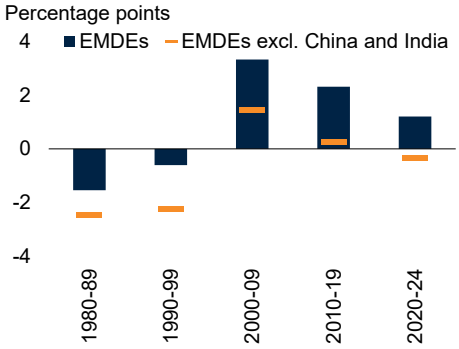
Figure 10. Growth, convergence, and poverty

As growth in EMDEs has slowed, the pace of convergence to the income levels of advanced economies has also weakened. During 2020-24, annual per capita growth in EMDEs averaged only 1.2 percentage points above that in advanced economies. The sluggish pace of per capita growth in EMDEs will not be sufficient to allow many of these economies to make meaningful progress toward key global development goals, including further progress on poverty reduction.

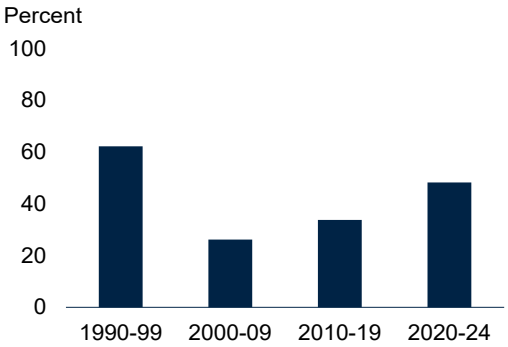
A. Average annual GDP growth



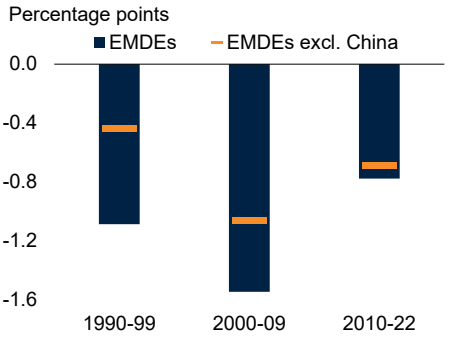
B. Annual per capita GDP growth differentials with advanced economies



C. Share of EMDEs with slower per capita GDP growth than advanced economies



D. Annual change in extreme poverty

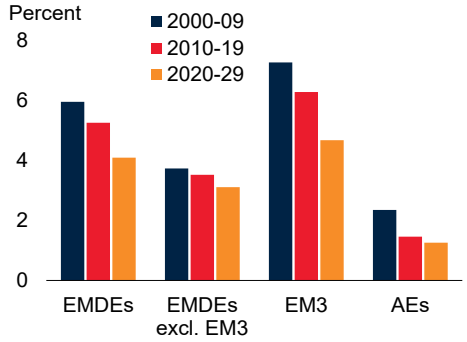


Sources: UN World Population Prospects; World Bank; World Bank Poverty and Inequality Platform.
Note: EM3 = China, India, and Brazil; EMDEs = emerging market and developing economies.
A. Bars show simple average for each decade of annual GDP-weighted average growth in each group of economies. Data for the 2020s include 2020-24. Growth rates for 2024 are estimated.
B.C. Per capita GDP is calculated as the total GDP for each group of economies divided by the total population in each group. GDP aggregates are calculated using real U.S. dollar GDP weights at average 2010-19 prices and market exchange rates. Per capita growth rates for 2024 are estimated.
D. Bars show average annual change in extreme poverty rates.

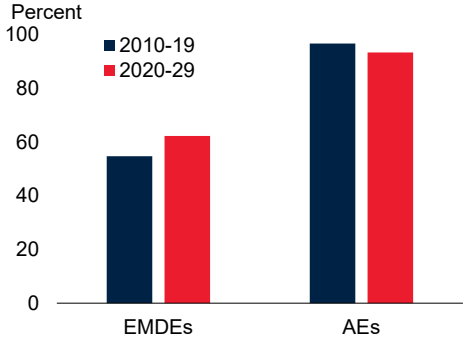
Figure 11. Potential output growth and long-term growth expectations

EMDEs' potential output growth and long-term growth forecasts have slowed significantly since the 2000s. The slowdown has been even more pronounced in the EM3, mainly reflecting the slowdown in China. Even with the post-pandemic recovery, growth of actual and potential GDP is set to remain below the averages achieved in the early 2000s.

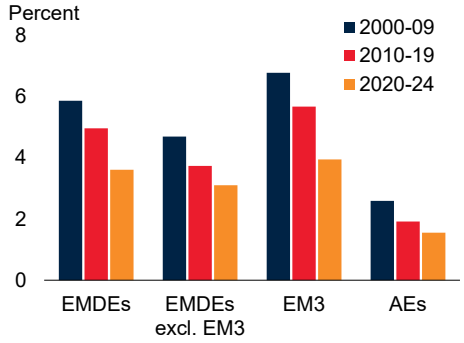
A. Potential output growth



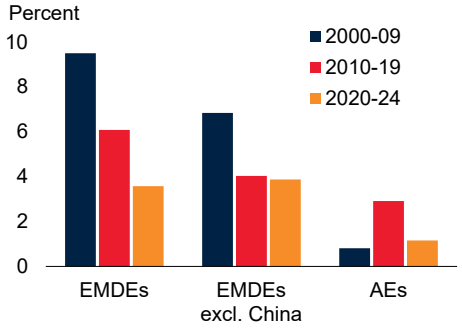
B. Share of economies with lower potential growth than in the 2000s



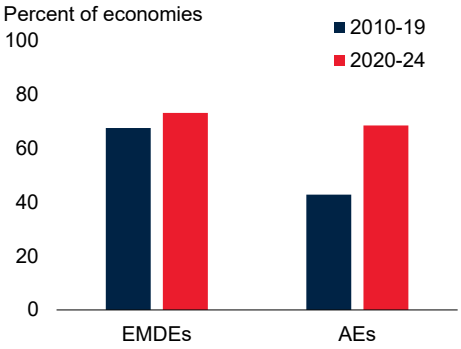
C. Long-term growth forecasts



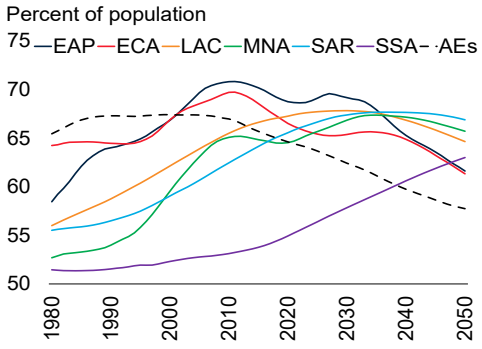
D. Investment growth



E. Share of economies with lower investment growth than in the 2000s



F. Working-age population



Sources: Consensus Economics; Haver Analytics; Penn World Tables; Kilic Celik, Kose, and Ohnsorge (2024); United Nations World Population Prospects; World Bank; World Development Indicators database.

Note: AEs = advanced economies; EAP = East Asia and Pacific; ECA = Europe and Central Asia; EM3 = China, India, and Brazil; EMDEs = emerging market and developing economies; EMDEs excl. EM3 = emerging market and developing economies excluding China, India, and Brazil; LAC = Latin America and the Caribbean; LICs = low-income countries; MNA = Middle East and North Africa; SAR = South Asia; SSA = Sub-Saharan Africa.

A.B. Potential growth is the maximum GDP growth rate that can be sustained in the long term at full employment and full capacity without igniting inflation. It is measured using a production function approach as in Kilic Celik, Kose, and Ohnsorge (2024). Sample includes 53 EMDEs and 30 advanced economies.

A. Bars show simple averages across years of GDP-weighted averages for each year.

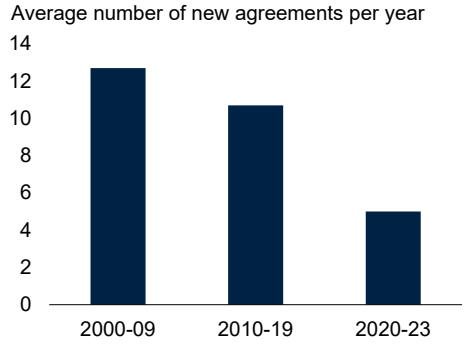
B. Bars show the fraction of countries with weaker average potential output growth during the 2010s and 2020s compared to the

2000s.
C. Bars show simple averages across years of GDP-weighted averages of Consensus Economics growth forecasts for 6-10 years ahead. Sample includes 52 EMDEs and 34 advanced economies.
D. E. “Investment” refers to gross fixed-capital formation. Investment growth is calculated using countries’ real annual investment in constant U.S. dollars as weights. Investment growth for 2024 is estimated. Sample includes 71 EMDEs and 35 advanced economies. Lines show population-weighted averages. Working-age is defined as ages 15-64.

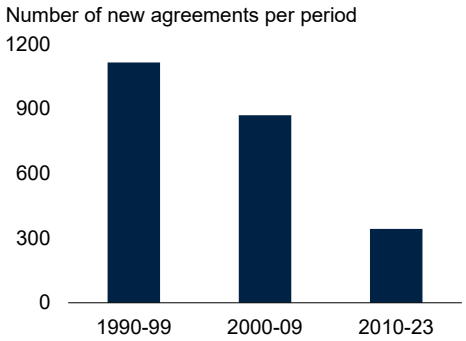
Figure 12. Trade and investment fragmentation

Trade and investment restrictions have increased sharply in recent years, while the number of new trade and investment agreements has declined. Geopolitical fragmentation has been trending upwards since around 2008, peaking in 2020, and remains high.

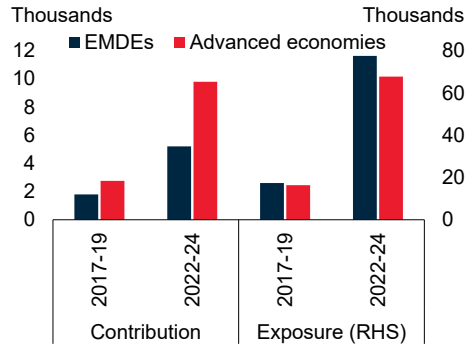
A. Trade agreements



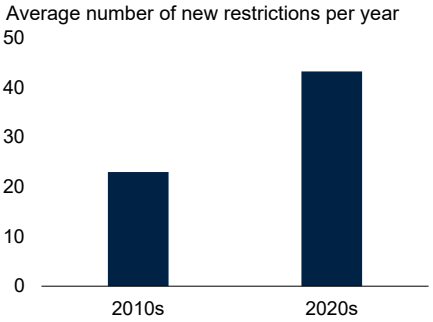
B. International investment agreements



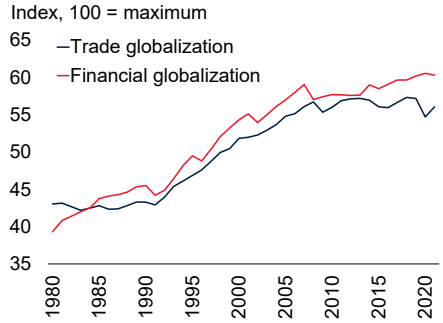
C. New trade-distorting policy measures



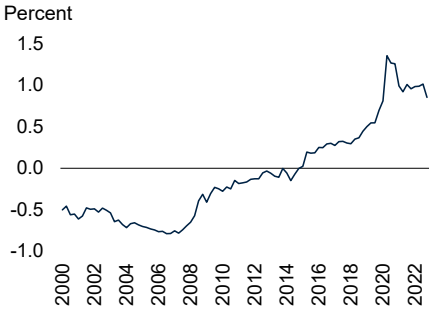
D. New FDI-restricting measures



E. World trade and financial globalization



F. Geopolitical fragmentation index



Sources: Fernández-Villaverde, Mineyama, and Song (2024); Global Trade Alert (database); UNCTAD International Investment Agreements Navigator (database); KOF Economic Research Institute; World Bank; World Trade Organization.

Note: EMDEs = emerging market and developing economies; FDI = foreign direct investment; RHS = right-hand scale.

A. Bars show simple averages of annual data. Sample excludes agreements signed by the United Kingdom.

B. Data include new international investment agreements that are in force.

C. Panel shows implemented interventions by countries that discriminate against foreign interests. Contribution represents the number of measures implemented by each country group. Exposure represents the number of measures affecting each country group. Each measure can be implemented by and target multiple countries. Adjusted data (for reporting lags) as of December 19, 2024.

D. Bars for the 2020s include data available through November 2024.

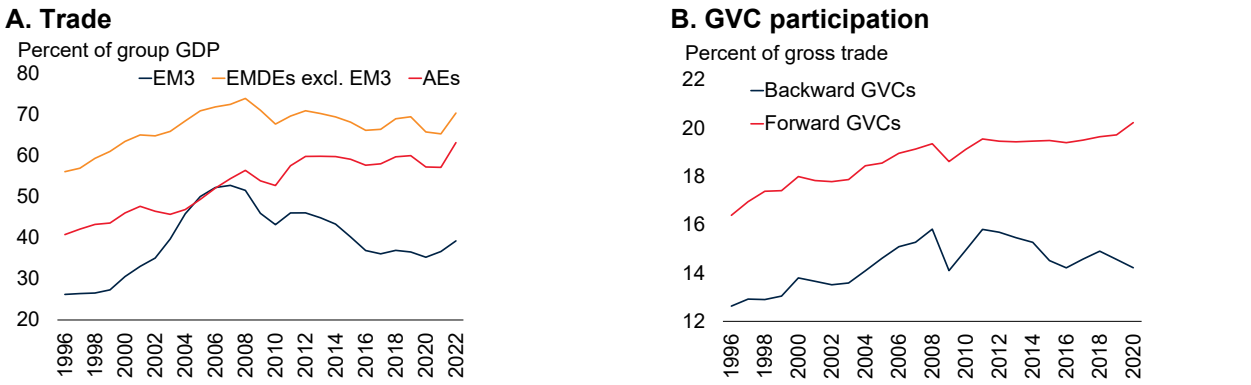
E. The trade globalization index is calculated using trade in goods and services, trade partner diversity, trade regulations, trade taxes and tariffs, and trade agreements. The financial globalization index is calculated using FDI; portfolio investment; international debt, reserves, and income payments; investment restrictions; capital account openness; and international investment agreements. The indexes use time-varying weights of the individual variables, determined using principal components analysis on 10-year rolling windows of annual data.

F. The geopolitical fragmentation index extracts a common factor across various indicators relating to trade and financial flows,

restrictions, and global uncertainty (Fernández-Villaverde, Mineyama, and Song 2024). Line shows the percent responses to a one-standard-deviation fragmentation shock. A higher value implies greater fragmentation.

Figure 13. Global trade integration

Trade as a share of GDP leveled off in advanced economies and EMDEs excluding the EM3 in the early 2010s, after rising rapidly in the decade before the global financial crisis, and has not risen back to its peaks since then. In the EM3, trade as a share of GDP has declined significantly. Trade growth in the early 21st century was underpinned by robust growth in global value chains (GVCs) in the 2000s, which has since leveled off.

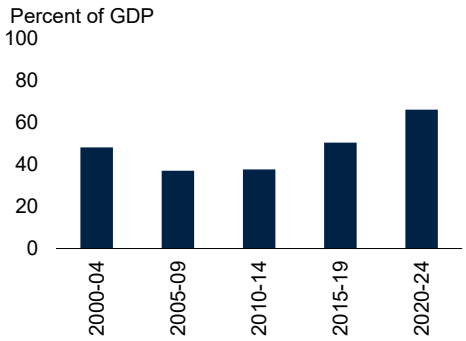


Sources: OECD TiVA; World Bank; World Development Indicators (database).
Note: AEs = advanced economies; EM3 = China, India, and Brazil; EMDEs = emerging market and developing economies; EMDEs excl. EM3 = emerging market and developing economies excluding China, India, and Brazil.
A. Lines show three-year moving averages of annual GDP-weighted averages in each group of economies. Trade is measured as the sum of exports and imports and includes goods and services trade. Last observation is 2023.
B. Lines show GDP-weighted averages of 39 EMDEs and 34 advanced economies. Backward GVC participation measures the proportion of foreign value-added embedded in a domestic economy's exports; forward GVC participation measures the proportion of domestic value added embedded in foreign exports.

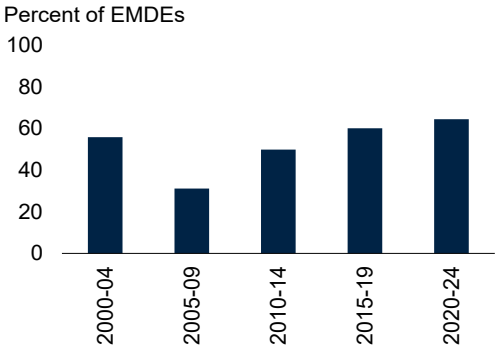
Figure 14. Debt and fiscal conditions

Elevated public debt and persistent fiscal deficits in EMDEs limit their policy space. Amid weak growth, higher interest rates and debt-service costs, and long-standing structural challenges, the urgency of fiscal consolidation and reforms to restore and maintain debt sustainability has intensified.

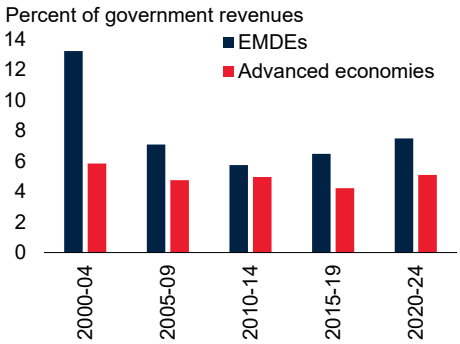
A. Government debt in EMDEs



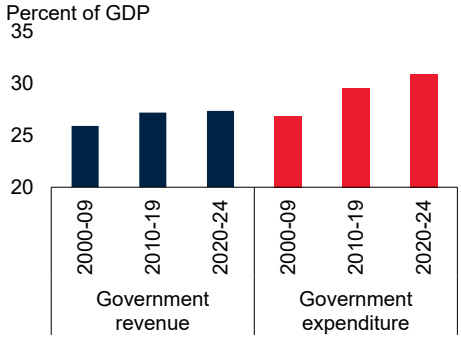
B. EMDEs with debt-increasing fiscal positions



C. Debt-servicing costs



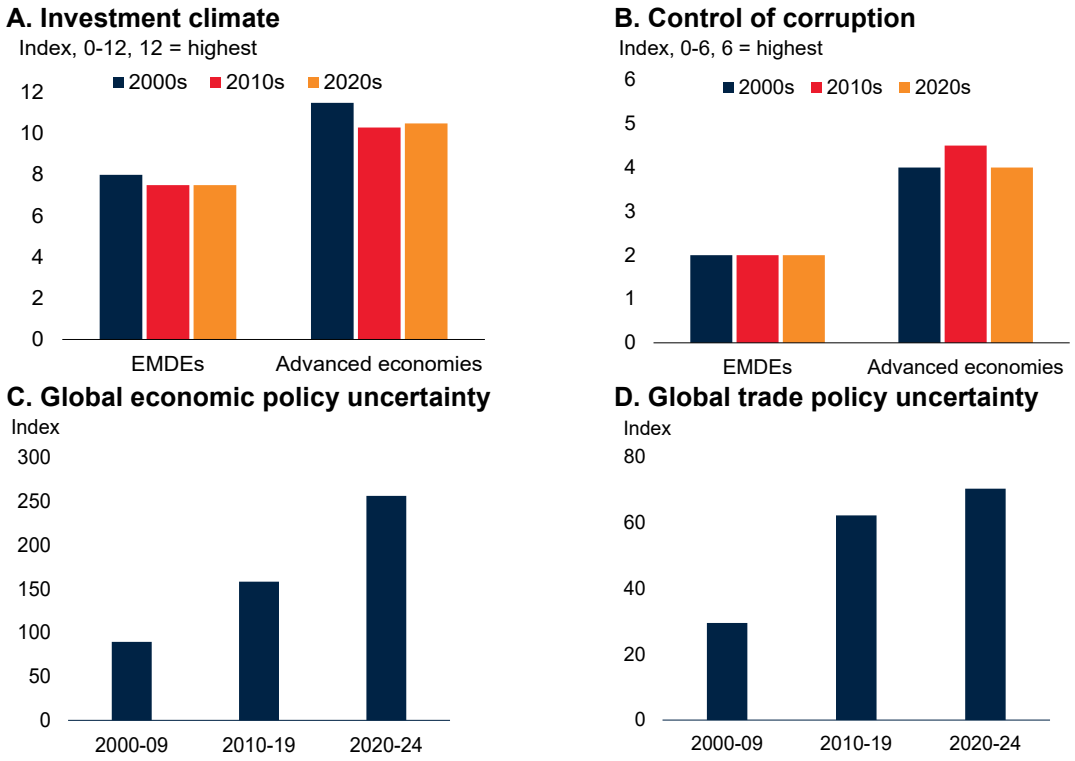
D. Government revenues and expenditures in EMDEs



Sources: International Monetary Fund; Kose et al. (2021, 2022); World Bank.
Note: EMDEs = emerging market and developing economies; GDP = gross domestic product.
A. Period averages, with data for 2024 referring to estimates. The aggregate is computed with current GDP in U.S. dollars as a weight, based on data for up to 153 EMDEs.
B. Bars show the share of EMDEs with a primary balance sustainability gap of less than zero. The primary balance sustainability gap is calculated as the difference between the primary balance and the debt-stabilizing primary balance. Sample includes 82 EMDEs.
C. Debt servicing costs are represented by net interest payments in percent of government revenues. Net interest payments are, computed as the difference between primary and overall fiscal balances. The aggregates are computed with government revenues in U.S. dollars as weights. Sample includes 150 EMDEs and 38 advanced economies.
D. Bars show unweighted averages.

Figure 15. Institutional environment and policy uncertainty

Progress with institutional reforms in EMDEs has stalled since the 2000s, weakening the investment climate and discouraging FDI inflows. Heightened policy uncertainty—driven by geopolitical tensions, armed conflicts, and changing approaches to trade policy shifts—constrains investment and growth prospects in EMDEs.

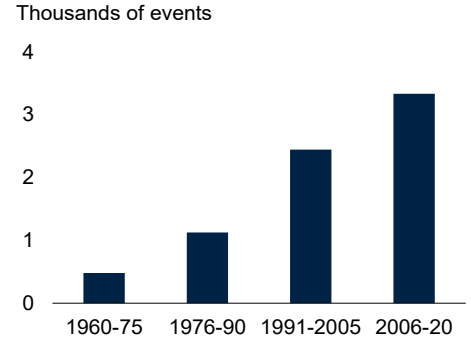


Sources: Caldara et al. (2020); FRED; PRS Group; World Bank.
Note: EMDEs = emerging market and developing economies; FDI = foreign direct investment.
A.B. Bars show group medians. Data for the 2020s cover 2020-23. Sample includes 36 advanced economies and 102 EMDEs.
C. Index is a GDP-weighted average of 15 advanced economies and 5 EMDEs using current price adjusted GDP. Last observation is September 2024.
D. The global trade policy uncertainty index quantifies changes in trade policy uncertainty by measuring the frequency of related terms in major newspapers; higher values indicate increased uncertainty. Last observation is November 2024.

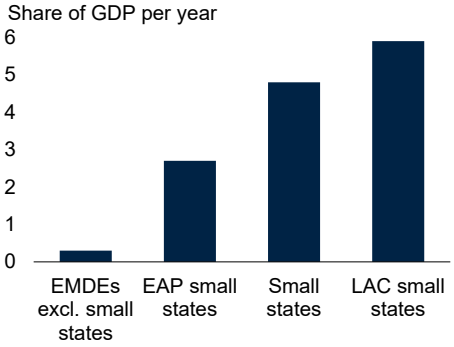
Figure 16. Natural disasters and climate change

The frequency and severity of extreme weather events have risen sharply. Climate change and climate-related disasters have caused significant damage to lives and livelihoods in some EMDEs and could push a large number of people into poverty in the future. Large-scale investment is needed for mitigation of, and adaptation to, the effects of climate change, but this is obstructed by EMDEs' major financing constraints.

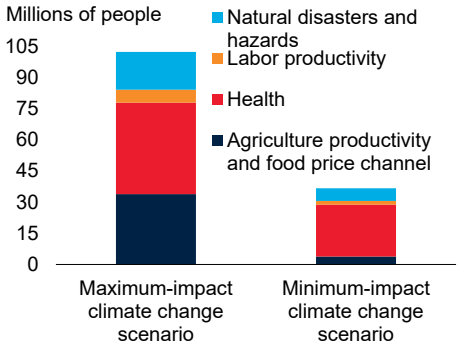
A. Extreme weather events in EMDEs



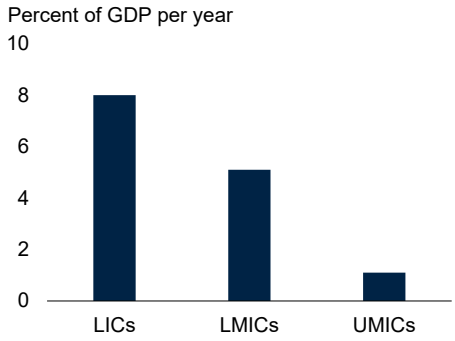
B. Damages and losses from natural disasters



C. Impact of climate change on extreme poverty by 2030



D. Additional investment needs for a resilient and low-carbon pathway, 2022-30

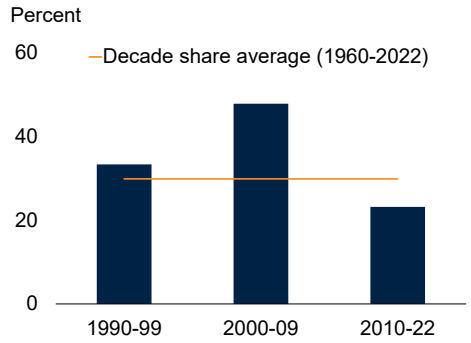


Sources: EM-DAT (database); Jafino et al. (2020); World Bank (2022a); World Bank.
Note: EAP = East Asia and Pacific; EMDEs = emerging market and developing economies; LAC = Latin America and the Caribbean; LICs = low-income countries; LMICs = lower-middle-income countries; UMICs = upper-middle-income countries.
A. Extreme weather events include droughts, floods, and storms. Sample includes 123 economies for droughts, 144 for floods, and 125 for storms.
B. Small states are EMDEs with a population of less than 1.5 million. Aggregates are calculated using nominal GDP weights.
C. Bars show the number of additional people in extreme poverty in 2030 owing to climate change. Based on Jafino et al. (2020), baseline scenarios are created without accounting for climate change impacts but with factoring in possible changes to demography, education, labor force participation, economic structure, productivity, and redistribution. Then, climate change is introduced in these baselines. The maximum and minimum levels of climate impacts represent the uncertainty on the physical impacts of climate and local adaptation policies.
D. Bars show the annual investment needs to build resilience to climate change and put countries on track to reduce emissions by 70 percent by 2050. Depending on availability, estimates include investment needs related to transport, energy, water, urban adaptations, industry, and landscape. In some Country Climate and Development Reports, especially those for low-income and lower-middle- income countries, estimated investments include development needs, especially those linked to closing the infrastructure gaps—such as solar mini grids to provide energy access—and cannot be considered entirely "additional" to pre-existing financing needs.

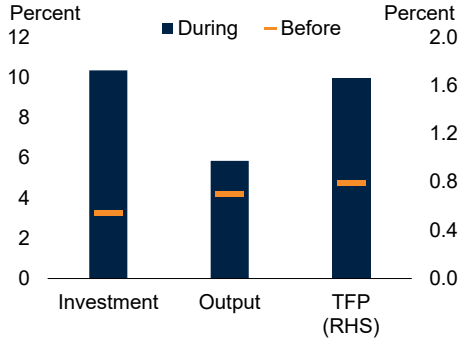
Figure 17. Investment accelerations in EMDEs

Investment accelerations in EMDEs—a key means of boosting potential growth in these economies—have become less common since the 2009 global recession, reducing output growth and hindering progress toward development and climate goals. Comprehensive policy reforms that ease cross-border trade and financial flows, remove structural bottlenecks, and enhance macroeconomic stability can trigger new investment accelerations and reverse projected declines in potential growth.

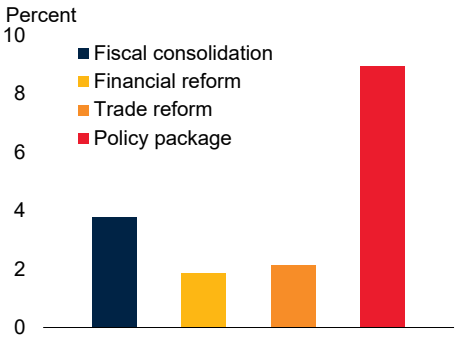
A. Share of EMDEs with investment accelerations



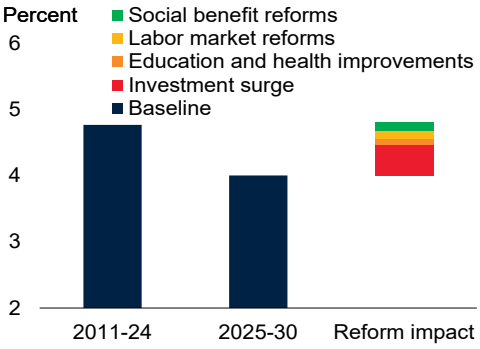
B. Annual growth of investment, output, and productivity before and during investment accelerations in EMDEs



C. Change in probability of investment acceleration



D. Impact of investment surges and policy reforms on potential growth in EMDEs

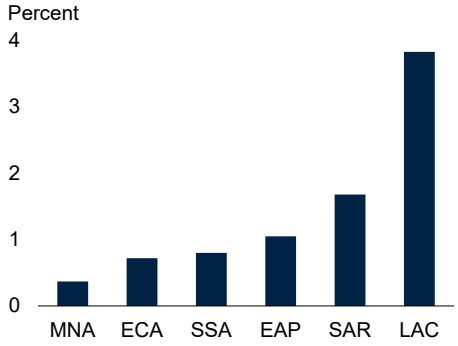


Source: Stamm and Yu (2024).
Note: EMDEs = emerging market and developing economies; TFP = total factor productivity. "Investment accelerations" are sustained periods when investment growth typically accelerates to more than 10 percent per year—more than three times the growth rate in other (nonacceleration) years over the past seven decades.
A. Bars show the decade average share of EMDEs that started an investment acceleration during the corresponding periods. The line shows the average percent of countries that started an investment acceleration over the past six decades.
B. "Before" indicates the six years before an investment acceleration. "During" indicates the full duration of an investment acceleration. The markers indicate median growth before acceleration years in the sample.
C. Bars show the increase in the probability of an investment acceleration following a one-standard deviation improvement in economic policy. Right bar shows the combined impact of increasing all three policy variables by one standard deviation.
D. GDP-weighted arithmetic averages. Scenarios assume annual growth rates of underlying variables during 2025-30, in each country. The investment surge is defined as the best 10-year average annual investment growth for each country. Education improvements assume that secondary and tertiary enrollment and completion rates rise over 2022-30 as much as their largest historical 10-year gain in 2000-21. Labor market changes assume female labor force participation grows annually at each country's fastest historical 10-year pace in 1990-2020. Health improvements assume life expectancy increases over 2022-30 at each country's highest recorded 10-year rate in 2000-21. Social benefits assume reforms raise older workers' participation rates over two decades by gradually lifting rates for each 5-year age and gender group from 55-59 years onward to match those of the next-younger age group.

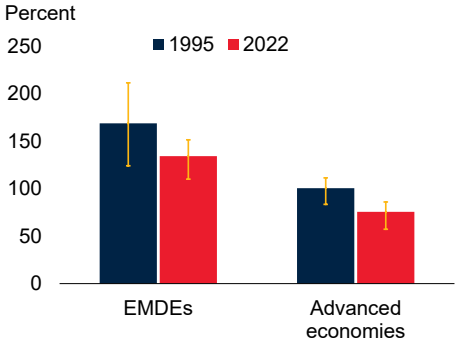
Figure 18. Trade policy

Deep trade agreements that tackle behind-the-border barriers as well as explicit trade restrictions could yield broader benefits—boosting output in and beyond member countries. Reforms that reduce persistently high trade costs could also deliver sizable macroeconomic gains and efficiency improvements for EMDEs.

A. Effect of deepening existing trade agreements on output



B. Cost of goods traded internationally in excess of goods traded domestically

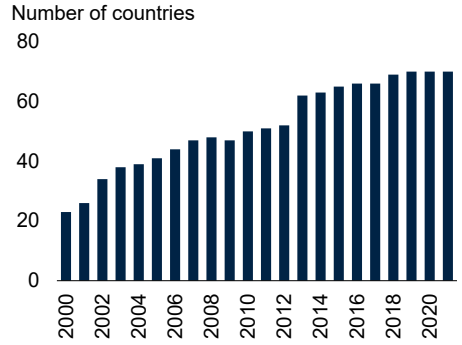


Sources: ESCAP-World Bank Trade Cost Database; Fontagné et al. (2023); World Integrated Trade Solution (database); World Bank.
Note: EAP = East Asia and Pacific; ECA = Europe and Central Asia; EMDEs = emerging market and developing economies; LAC = Latin America and the Caribbean; MNA = Middle East and North Africa; SAR = South Asia; SSA = Sub-Saharan Africa.
A. Bars show estimates of percent change in GDP by region resulting from deepening existing trade agreements to their highest level of ambition. Data for 2018.
B. Bars show averages of the percentage by which the costs of a good traded internationally exceed the costs of the same good traded domestically and are expressed as ad valorem tariff equivalents. Costs are aggregated into individual-country measures using 2021 bilateral country export shares. Bars show unweighted averages of individual-country measures; whiskers show interquartile ranges. Sample in 1995 includes 62 EMDEs and 34 advanced economies; sample in 2022 includes 86 EMDEs and 28 advanced economies.

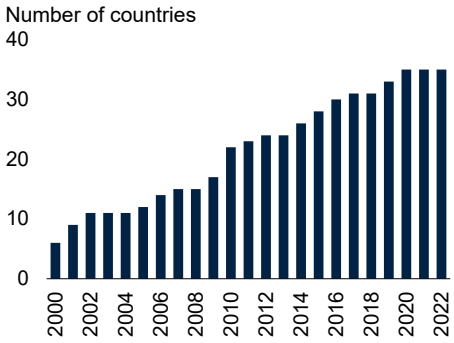
Figure 19. Fiscal and monetary policy frameworks

The volatility of output and inflation in EMDEs decreased somewhat between 2000 and 2019 but spiked up following the global pandemic. Fiscal and monetary frameworks in EMDEs have improved since the early 2000s as a growing number of countries adopt fiscal rules and central banks use inflation-targeting frameworks. Inflation and inflation volatility are better controlled in EMDEs where central banks have a high degree of independence.

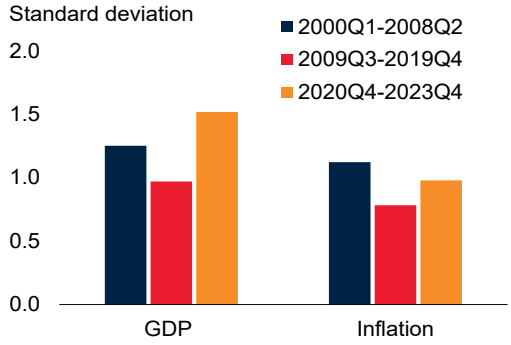
A. EMDEs with fiscal rules



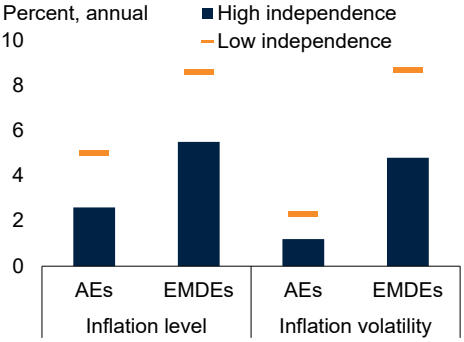
B. EMDEs with inflation targeting



C. Growth and inflation volatility



D. Inflation and inflation volatility, by level of central bank independence



Sources: Dincer and Eichengreen (2014); Ha, Kose, and Ohnsorge (2023); Haver Analytics; IMF AREAER database; World Bank.
Note: AEs = advanced economies; EMDEs = emerging market and developing economies.
A. An economy is considered to implement a fiscal rule if it has one or more fiscal rules on expenditure, revenue, budget balance or debt.
C. Median volatility of quarterly real GDP and CPI growth during indicated subsamples. Sample includes 37 EMDEs.
D. Bars show median inflation rates and inflation volatility in country-year pairs with a central bank independence and transparency index in the top quartile of the sample. Markers show medians for country-year pairs in the bottom quartile.

Annex 1. Dynamic factor model methodology

Dynamic factor model (benchmark version)

Dynamic factor models are commonly utilized for identifying common elements in national business cycles (Crucini, Kose, and Otrok 2011; Kose, Otrok, and Prasad 2012; Hirata, Kose, and Otrok 2013). This paper estimates a dynamic factor model to capture commonalities in fluctuations of real GDP growth. The benchmark model uses a sample of 30 economies and quarterly data for 2000Q1-2023Q4 (table A.1.1). Real quarterly GDP (seasonally adjusted and in local currency) is obtained from Haver Analytics and converted to continuously compounded growth rates by taking the quarter-over-quarter change in the natural logarithm of the series.

Dynamic factor models are designed to extract a small number of unobservable common elements from the comovement between macroeconomic time series across economies. In this application, the variance of quarterly GDP growth is decomposed into three factors:

- A global factor common to all economies;
- A group factor common to a subset of economies. In the benchmark model, the sample is split into two groups, advanced economies and EMDEs;
- Idiosyncratic factors specific to each individual GDP growth series.

A major advantage of the model is that it allows for a parsimonious representation of the data in terms of unobservable common elements, obviating the need to explicitly identify all relevant observable independent variables.

The model has thirty equations, in which GDP growth for each economy is specified as a function of the global, group, and idiosyncratic factors. For example, under the benchmark approach to grouping economies, Mexico is categorized as an EMDE, such that the equation for economic growth for this economy is:

$$Y_t^{\text{MEX}} = \beta_{\text{GLOBAL}}^{\text{MEX}} f_t^{\text{GLOBAL}} + \beta_{\text{EMDE}}^{\text{MEX}} f_t^{\text{EMDE}} + \varepsilon_t^{\text{MEX}},$$

where Y denotes growth in output. The global and group factors are represented by f_t^{global} and f_t^{EMDE}, respectively. The coefficients capture the sensitivities of the GDP growth in each economy to these factors. The error term ε_t^{MEX} is assumed to be uncorrelated at all lead and lags. The error term and the factor loadings follow autoregressive processes:

$$f_t^m = \phi^m(L) f_{t-1}^m + \mu_t^m \,,$$

$$\varepsilon_t = \psi(L)\varepsilon_{t-1} + \chi_t \,,$$

where $m = \{\text{GLOBAL, GROUP}\}$, $\phi^m(L)$ and $\psi(L)$ are lag polynomial operators, and the terms $\mu_t^m$and χ_t are normally distributed and mutually orthogonal across all equations and variables in the system.

The model is estimated using the Bayesian approach outlined in Kose, Otrok, and Whiteman (2003) and using priors described in detail in Jackson et al. (2016). Dummy series are included as external variables in the system for each of the quarters of 2020 and 2021 to avoid any bias produced by the unconventional variance that observations exhibit during this period.

To measure the importance of each factor, the total variance of output growth is decomposed according to the contributions of each factor. This is achieved by applying the variance operator to each equation in the system. For the case of GDP growth in Mexico:

$$\text{Var}(Y^{\text{MEX}}) = (\beta^{\text{MEX}}_{\text{GLOBAL}})^2\text{Var}(f_t^{\text{GLOBAL}}) + (\beta^{\text{MEX}}_{\text{EMDE}})^2\text{Var}(f_t^{\text{EMDE}}) + \text{Var}(\varepsilon^{\text{MEX}})$$

Since the factors are assumed to be orthogonal to each other, the variance in output attributable to the global factor can be represented as:

$$\frac{(\beta^{\text{MEX}}_{\text{GLOBAL}})^2\text{Var}(f_t^{\text{GLOBAL}})}{\text{Var}(Y^{\text{MEX}})}$$

The variance share attributable to the group factor is computed using an analogous approach. The idiosyncratic factor explains the residual variance unaccounted for by the global and group factors. In reporting results, the variance attributable to the respective factors is averaged across economies in each group (the change in the contribution of the factors is robust to using medians instead of means).

The analysis is extended to examine the dynamic nature of the variance contributions by adopting more granular time frames. To do this, the coefficient matrix of the system of equations is estimated using the entire sample, making use of the maximum number of available data to avoid estimation issues. Then, the variance decomposition exercises are performed employing the coefficients estimated before and the variance of the factor and data within 10-year windows. For example, the variance explained by the global factor for Mexico between 2000 and 2009 is:

$$\frac{(\beta^{\text{MEX}}_{\text{GLOBAL}})^2\text{Var}(f^{\text{GLOBAL}}_{2000-2009})}{\text{Var}(Y^{\text{MEX}}_{2000-2009})}$$

This approach mitigates estimation biases that could arise from relying on shorter sub-periods to estimate the model, at the time in which it allows to capture dynamic properties of the data, such as autocorrelations and cross-autocorrelations across variables over time.

Dynamic factor model (alternative version)

In an alternative exercise, the sample is extended to 58 economies, using quarterly data for the same period as in the benchmark model (2000Q1-2023Q4), and grouped into six geographic regions (table A.1.2). Given geographic proximity, North American countries (Canada and the United States) are combined with the LAC region. The results are robust to treating these countries as a separate region. For SAR, the model is estimated with four additional countries (Maldives, Nepal, Pakistan, and Sri Lanka), using data for a shorter time period, 2005Q4 to 2023Q4, given data availability for these countries.

The purpose of the alternative DFM is to provide insights into how the contributions of specific group factors change when considering geographic proximity. For example, under the geographic approach to grouping economies, Mexico is categorized in the Latin America and the Caribbean, United States, and Canada region:

$$Y_t^{\text{MEX}} = \beta_{\text{GLOBAL}}^{\text{MEX}} f_t^{\text{GLOBAL}} + \beta_{\text{LAC}}^{\text{MEX}} f_t^{\text{LAC}} + \varepsilon_t^{\text{MEX}}$$

The variance decomposition exercise is estimated using the same strategy described for the benchmark DFM. Figure A.1.1 shows the results of this exercise. When countries are grouped by geographic regions, global factors remain the dominant contributors to fluctuations in economic growth, explaining 54 percent of the variance across countries. Here, the group (that is, regional) factor accounts for a smaller share of the variance than in the benchmark model, explaining, on average, 9 percent of the variability in growth across the six regions. The results are heterogeneous across regions, however.[15]

Table A.1.1 Sample, benchmark DFM

Group	Economies
Advanced economies (15)	Australia; Austria; Belgium; Canada; France; Germany; Italy; Japan; Republic of Korea; Netherlands; New Zealand; Spain; Sweden; the United Kingdom; and the United States
EMDEs (15)	Brazil, Chile, China, Colombia, Hungary, India, Malaysia, Mexico, Peru, Philippines, Poland, the Russian Federation, South Africa, Thailand, and Türkiye

Note: DFM = dynamic factor model; EMDEs = emerging market and developing economies.

[15] Dynamic factor models are designed to capture underlying trends and patterns in multivariate time series data. Even when the factors extracted explain a relatively small part of the variance of growth, they still represent meaningful underlying economic processes. These factors highlight systematic relationships and latent structures that are crucial for understanding the dynamics of the data.

Table A.1.2 Sample, alternative DFM

Region	Economies
East Asia and Pacific (10)	Australia; China; Hong Kong SAR, China; Indonesia; Japan; New Zealand; the Philippines; Republic of Korea; Singapore; and Thailand
Europe and Central Asia (22)	Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, Kazakhstan, Luxembourg, the Netherlands, North Macedonia, Norway, the Russian Federation, Serbia, Spain, Sweden, Türkiye, and the United Kingdom
Latin America and the Caribbean, United States, and Canada (16)	Argentina, Belize, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, the Dominican Republic, Ecuador, El Salvador, Mexico, Paraguay, Peru, the United States, and Uruguay
Middle East and North Africa (5)	Israel, Jordan, Morocco, Tunisia, and West Bank and Gaza
South Asia (5)	India, Maldives, Nepal, Pakistan, and Sri Lanka
Sub-Saharan Africa (4)	Botswana, Cameroon, Namibia, and South Africa

Note: DFM = dynamic factor model; EMDEs = emerging market and developing economies.

Annex 2. SVAR methodology

Benchmark SVAR model

Growth spillovers are investigated using a structural vector autoregression (SVAR) model. The data set includes 40 economies—EM3 countries, AE3 countries, and 34 other EMDEs—at a quarterly frequency covering the period 2000Q1-2023Q4 (table A.2.1). The starting date is selected based on data availability. The starting date of 2000 is also chosen so that the sample does not mix data from before and after the launch of the euro at the beginning of 1999, avoids the immediate aftermath of the Asian financial crisis of 1997 and the Russian financial crisis of 1998, and captures data at the time of China's WTO accession in 2001.

The benchmark SVAR model is used to investigate the growth spillovers from EM3 countries, where several global developments are controlled for. The model includes the endogenous variables of AE3 growth, the U.S. interest rate, EMBI spreads, EM3 growth, oil price growth, and other EMDEs growth. The U.S. interest rate (measured as the yield on 10-year U.S. Treasuries) and EMBI spreads are used as proxies for financial conditions in AE3 and EM3, respectively. The EMBI (Emerging Market Bond Index) is a commonly used benchmark for tracking yields on sovereign debt in EMDEs. Oil price growth (with oil prices measured as a simple average of Brent, Dubai, and West Texas Intermediate crude oil prices) captures developments in production costs and demand conditions. Four dummies are included as exogenous variables, one for each quarter of 2020, to control for the economic effects of the COVID-19 pandemic.

Country-specific growth rates are calculated as log-differences based on the quarterly real GDP data obtained from Haver Analytics. The market yield on 10-year U.S. Treasuries is sourced from the Federal Reserve Economic Data. The EMBI spread is obtained from J.P. Morgan. Nominal oil prices are obtained from the World Bank's Pink Sheet (crude oil, average) and deflated using seasonally adjusted U.S. CPI series from the Federal Reserve Economic Data.

The formal investigation is based on the following model with a lag length of four quarters (standard for SVAR models using quarterly data):

$$A_0 z_t = a + \sum_{k=1}^{4} A_k z_{t-k} + u_t \,,$$

where u_t is a vector of serially and mutually uncorrelated structural innovations. The model is expressed in reduced form for estimation purposes:

$$z_t = b + \sum_{k=1}^{4} B_k z_{t-k} + e_t \,,$$

where $b = A_0^{-1}a$ and $B_k = A_0^{-1}A_k$ for all k *and* $e_t = A_0^{-1}u_t$. The identification of the shocks is achieved by imposing the following sign and zero restrictions on the matrix A_0^{-1} (table

A.2.2). The restrictions are deliberately minimal, as the secondary shocks are not the main subject of the analysis and the aim is to avoid imposing overly restrictive assumptions.

The motivation for the restrictions imposed on each shock is as follows:

- A positive growth shock in major emerging markets (EM shock) increases GDP growth in EM3, decreases the EMBI spread, and increases oil price growth amid higher demand. It is assumed that the two advanced economy variables (AE3 GDP growth and the U.S. interest rate) do not respond contemporaneously to EM shocks.
- A positive growth shock in major advanced economies (AE shock) is associated with an increase in AE3 GDP growth, EM3 GDP growth, and oil price growth. U.S. interest rates also rise as a result, as standard during the business cycle. Importantly, the response of other EMDEs growth to EM and AE shocks is left unrestricted.
- A positive growth shock in other EMDEs (other EMDEs shock) increases GDP growth in other EMDEs but is not associated with a contemporaneous impact on GDP growth in both AE3 and EM3, nor is it associated with a change in the U.S. interest rate.
- A rate shock is akin to a monetary policy shock, as it slows GDP growth in AE3 while the U.S. interest rate rises.
- An EMBI shock is assumed to be a rise in the EMBI spread decrease of EM3 GDP growth. AE3 growth is assumed to have no contemporaneous reactions.
- An oil shock resembles a supply shock in that it is associated with higher oil price growth and lower economic activity in all regions analyzed (AE3, EM3, and other EMDEs).

In the results presented in the main text of the paper, shocks are normalized to a 1-percentage-point increase in GDP growth for the respective aggregate. For instance, an EM3 shock corresponds to a 1-percentage-point increase in EM3 growth upon impact, with persistence determined by the model. The bar charts depicting responses in other EMDEs and the global economy display the cumulative effect over time, expressed as percent increase in GDP. The "global" results are based on the GDP-weighted average of the impact in the AE3, the EM3, and other EMDEs.

The estimation uses a Bayesian approach with Minnesota priors. This corresponds to generating posterior draws for the structural model parameters by transforming each reduced-form posterior draw. For each draw of the covariance matrix from its posterior distribution, the corresponding posterior draw for A_0^{-1} is constructed by discarding non admissible solutions of the structural shocks that do not satisfy the sign restrictions until 1,000 admissible draws are obtained. While the median of each distribution is considered as the Bayesian estimator, the 16th and 84th percentiles of distributions are used to construct 68 percent confidence intervals (the standard measure in the related literature).

Several tests are conducted to ensure the robustness of the baseline SVAR findings. First, oil prices are replaced with a broad index of energy and non-energy prices from the World

Bank's Pink Sheet. The results indicate that a positive growth shock in EM3 countries leads to expansions in other EMDEs and the global economy of a similar magnitude as in the baseline results. Second, the consistency of the estimates is tested by replacing China's GDP with the China Activity Tracker from the San Francisco Fed. Although this adjustment necessitates a slightly shorter sample period, starting from 2001Q1, the results are closely aligned with the baseline results, with growth shocks in China yielding comparable effects on other EMDEs and the global economy. Third, the sensitivity of the baseline model to alternative groupings of economies is tested by replacing the AE3 and EM3 aggregates with G7 and EM7 aggregates, where EM7 is Brazil, China, India, Indonesia, Mexico, Russia, and Türkiye. Again, the results are comparable to the baseline results.

Multiple subsample estimations provide sensitivity analysis of the results. Excluding the post-2020 period from the estimation sample indicates that the findings are not driven by the COVID-19 period. Additionally, the baseline model is re-estimated using data for 2009-23. The results show that although the impact on oil prices has increased somewhat, there is no noticeable rise in business cycle spillovers to other EMDEs, advanced economies, or the global economy in the post-global financial crisis period. Similar findings emerge from re-estimating the model using 10-year rolling windows over the full sample, which indicate broadly stable spillovers from EM3 growth shocks since 2000.

Several factors may explain the lack of significant increases in spillovers over time. First, the shorter sub-periods may limit the ability to detect longer-term changes in spillover dynamics. Second, while EM3 economies have deepened their trade and financial linkages globally, the changes may not be large enough to drive a noticeable rise in spillovers, particularly given the more gradual pace of integration since the early 2010s. Third, the relatively low variability of aggregate growth in the EM3, especially driven by the reduced GDP volatility of China in the 2010s compared to the previous decade, could dampen the effects of business cycle spillovers. Finally, the estimated models do not explicitly account for potential regime changes or nonlinearities, which may limit the capacity to capture variations in spillovers over time. For instance, although China's growth delivered substantial regional spillovers to developing economies in the 2000s, these effects appear to have diminished in recent years (World Bank 2024j).

Country-specific SVAR model

Country-specific SVAR models are used to estimate growth spillovers from China (the largest of the EM3 economies) and the United States (the largest advanced economy). In technical terms, this investigation is achieved by replacing the EM3 aggregate in the benchmark model with China and replacing the AE3 aggregate in the benchmark model with the United States. The exogenous COVID-19 dummies are also included to ensure consistency with the baseline specification. In the model estimating spillovers from China, the endogenous variables in the benchmark model are modified to include AE3 GDP growth, the U.S. interest rate, EMBI, China's GDP growth, oil price growth, and other EMDEs GDP growth. In the model estimating spillovers from the United States, the endogenous variables in the benchmark model are

modified to include U.S. GDP growth, U.S. interest rate, EMBI, EM3 GDP growth, oil price growth, and other EMDEs GDP growth.

Table A.2.1 Sample, benchmark SVAR model

Group	Economies
AE3	United States, euro area, and Japan
EM3	China, India, and Brazil
Other EMDEs (34 economies)	Argentina, Belize, Bolivia, Bosnia and Herzegovina, Botswana, Bulgaria, Cameroon, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Honduras, Hungary, Indonesia, Jordan, Kazakhstan, Mexico, Morocco, Namibia, North Macedonia, Paraguay, Peru, the Philippines, Poland, Romania, the Russian Federation, Serbia, South Africa, Thailand, Tunisia, Türkiye, Uruguay, and West Bank and Gaza

Note: EMDEs = emerging market and developing economies; SVAR = structural vector autoregressions.

TABLE A.2.2 Sign and zero restrictions imposed to identify shocks in the SVAR models

	EM shock	AE shock	Other EMDEs shock	Rate shock	EMBI shock	Oil shock
AE3	0	+	0	-	0	-
U.S. interest rate	0	+	0	+	*	*
EMBI	-	*	*	*	+	*
EM3	+	+	0	*	-	-
Oil	+	+	*	*	*	+
Other EMDEs	*	*	+	*	-	-

Note: Asterisks indicate that no restrictions were imposed on these variables. AE3 = United States, euro area, and Japan; EM3 = China, India, and Brazil; other EMBI = Emerging Markets Bond Index; EMDEs = emerging market and developing economies; other EMDEs = emerging market and developing economies excluding the EM3; SVAR = structural vector autoregression.

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