A World Bank Group Flagship Report

Global Economic Prospects

Darkening Skies

JANUARY 2019

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Executive Summary

The outlook for the global economy has darkened. International trade and investment have softened, trade tensions remain elevated, and some large emerging market and developing economies have experienced substantial financial market pressures. Against this challenging backdrop, EMDE growth is expected to stall at 4.2 percent in 2019. Downside risks have become more acute and include the possibility of disorderly financial market movements and an escalation of trade disputes. Debt vulnerabilities in emerging market and developing economies, particularly low-income countries, have increased. More frequent severe weather events would raise the possibility of large swings in international food prices, which could deepen poverty. In this difficult environment, it is of paramount importance for emerging market and developing economies to rebuild policy buffers while laying a stronger foundation for future growth by boosting human capital, promoting trade integration, and addressing the challenges associated with informality.

Global Outlook. Moderating activity and heightened risks are clouding global economic prospects. International trade and investment have softened, trade tensions remain elevated, and some large emerging market and developing economies (EMDEs) have experienced substantial financial market pressures. Against this challenging backdrop, EMDE growth is expected to stall at 4.2 percent in 2019, with a sharply weaker-than-expected recovery in commodity exporters accompanied by a deceleration in commodity importers. Global growth is expected to slow to 2.9 percent in 2019, from 3.0 percent in 2018. Downside risks have become more acute. Disorderly financial market developments could disrupt activity in the affected economies and lead to contagion effects. Trade disputes could escalate or become more widespread, denting activity in the involved economies and leading to negative global spillovers. To confront this increasingly difficult environment, the immediate priority is for EMDE policymakers to prepare for possible bouts of financial market stress and rebuild macroeconomic policy buffers as appropriate. But there remains the longer run need to foster stronger potential growth by boosting human capital, removing barriers to investments, and promoting trade integration. Such efforts would also help address the challenges associated with informality.

Regional Perspectives. The cyclical upswing in regions with many commodity exporters (Latin America and the Caribbean and Middle East and North Africa) is proceeding at a more moderate pace than previously anticipated, partly reflecting a substantial slowdown in some large economies, and is expected to plateau towards the end of the forecast horizon. Growth in regions with large numbers of commodity importers (such as South Asia and East Asia and the Pacific) is expected remain solid at around 6-7 percent. For all regions, risks to the outlook are increasingly tilted to the downside.

This edition of Global Economic Prospects includes a chapter on the challenges associated with the presence of large informal sectors in EMDEs and policy options to address informality; a box on the remarkable decline in EMDE inflation over the past decades; and two essays, on rising debt vulnerabilities in low-income countries (LICs) and the implications of large food price spikes for poverty.

Growing in the Shadow: Challenges of Informality. The informal sector accounts for about a third of GDP and 70 percent of employment (of which self-employment is more than a half) in EMDEs. Informality is more widespread in lower-income countries with a large agricultural sector and a high share of unskilled workers. While offering the advantage of flexibility and employment in some economies, a larger informal sector is associated with lower
productivity, reduced fiscal revenues, and greater poverty and inequality. Overcoming the challenges of informality requires a balanced mix of policies that carefully take into account country-specific drivers. A well-designed policy framework should include measures aimed at reducing regulatory and tax burdens, expanding access to finance, improving education and other public services, and strengthening public revenue frameworks.

The Great Disinflation in EMDEs. EMDEs have achieved a remarkable decline in inflation, from 17.3 percent in 1974 to about 3.5 percent in 2018. This achievement coincided with an even sharper decline in inflation in advanced economies. The great disinflation in EMDEs has also been accompanied by growing inflation synchronization, as evidenced by the emergence of a global inflation cycle. It has been supported by long-term trends such as the widespread adoption of robust monetary policy frameworks and strengthening of global trade and financial integration. More recently, the disruptions caused by the global financial crisis also contributed to the decline in inflation. However, a continuation of low and stable EMDE inflation is by no means guaranteed. If the wave of structural and policy-related factors that have driven disinflation since the 1970s loses momentum or is rolled back, elevated inflation could re-emerge. If the global inflation cycle turns up, EMDE policymakers may find that maintaining low inflation can be as a great a challenge as achieving it.

Debt in Low-Income Countries: Evolution, Implications, and Remedies. Debt vulnerabilities in LICs have increased substantially in recent years. Since 2013, median government debt has risen by more than 17 percentage points of GDP and has shifted toward non-concessional and private sources. As a result, in most LICs interest payments are absorbing an increasing proportion of government revenues. The majority of LICs would be hard hit by a sudden weakening in trade or global financial conditions given high levels of external debt, lack of fiscal space, low foreign currency reserves, and undiversified exports. A proactive effort to reduce debt-related vulnerabilities is a policy priority for many LICs, and focus needs to be placed on domestic resource mobilization, strengthening management practices for debt and public investment, building more resilient macro-fiscal frameworks, and developing domestic financial systems.

Poverty Impact of Food Price Shocks and Policies. In the event of large swings in world food prices, governments sometimes intervene to soften the impact on domestic prices and to lessen the burden of adjustment for vulnerable groups. While individual countries can succeed at insulating their domestic markets from short-term fluctuations in global food prices, the collective intervention of many countries may exacerbate the volatility of world prices. Policies introduced during the 2010-11 food price spike may have accounted for 40 percent of the increase in the world price of wheat and one-quarter of the increase in the world price of maize. Combined with government policy responses, the 2010-11 food price spike tipped 8.3 million people (almost 1 percent of the world’s poor) into poverty.
# Abbreviations

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<tr>
<th>Abbreviation</th>
<th>Description</th>
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<td>advanced economies</td>
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<td>CEMAC</td>
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<td>CES</td>
<td>constant elasticity of substitution</td>
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<td>constant elasticity of transformation</td>
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<td>CGE</td>
<td>computable general equilibrium model</td>
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<td>consumer price index</td>
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<td>DB</td>
<td>Doing Business</td>
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<td>DGE</td>
<td>Dynamic General Equilibrium</td>
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<td>Distance to Frontier score</td>
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<td>East Asia and Pacific</td>
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<td>Error Correction Model</td>
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<td>emerging market and developing economies</td>
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<td>FCV</td>
<td>fragility, conflict, and violence-affected economies</td>
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<td>FICCI</td>
<td>Federation of Indian Chambers of Commerce</td>
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<td>Fewsnet</td>
<td>Famine Early Warning Systems Network</td>
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<tr>
<td>G4</td>
<td>Euro Area, Japan, the United Kingdom, and the United States</td>
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<td>GCC</td>
<td>Gulf Cooperation Council</td>
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<td>GDP</td>
<td>gross domestic product</td>
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<td>Global Economic Prospects</td>
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<td>Global Information and Early Warning System</td>
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<td>goods and nonfactor services</td>
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<td>GTAP</td>
<td>Global Trade Analysis Project</td>
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<td>Hard Red Wheat</td>
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<td>ICSE</td>
<td>International Classification of Status in Employment</td>
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<td>ICT</td>
<td>information and communication technology</td>
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<td>Independent Evaluation Group</td>
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<td>International Labor Organization</td>
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<td>International Monetary Fund</td>
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<td>LAC</td>
<td>Latin America and the Caribbean</td>
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<td>LES–CES</td>
<td>linear expenditure system–constant elasticity of substitution</td>
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<td>LIC</td>
<td>low-income country</td>
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<tr>
<td>Acronym</td>
<td>Full Form</td>
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<td>MIC</td>
<td>middle-income country</td>
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<td>MIMIC</td>
<td>Multiple Indicators Multiple Causes model</td>
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<td>MMDA</td>
<td>Metro Manila Developments Authority</td>
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<td>MENA</td>
<td>Middle East and North Africa</td>
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<tr>
<td>MSEs</td>
<td>micro and small enterprises</td>
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<tr>
<td>NBER</td>
<td>National Bureau of Economic Research</td>
</tr>
<tr>
<td>NEET</td>
<td>Not in Employment, Education, or Training</td>
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<tr>
<td>NPAs</td>
<td>non-performing assets</td>
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<tr>
<td>NRP</td>
<td>Nominal Rate of Protection</td>
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<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
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<td>OLS</td>
<td>ordinary least squares</td>
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<tr>
<td>PPP</td>
<td>purchasing power parity</td>
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<td>RHS</td>
<td>right-hand side (in figures)</td>
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<td>SAR</td>
<td>South Asia Region</td>
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<td>SDGs</td>
<td>Sustainable Development Goals</td>
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<td>SEMP</td>
<td>self-employment rate</td>
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<td>SMEs</td>
<td>small and medium-sized enterprises</td>
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<td>SSA</td>
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<td>SSRN</td>
<td>Social Science Research Network</td>
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<td>UNCTAD</td>
<td>United Nations Conference on Trade and Development</td>
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<td>UNDP</td>
<td>United Nations Development Programme</td>
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<td>UNICEF</td>
<td>United Nations International Children’s Emergency Fund</td>
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<td>USDA</td>
<td>United States Department of Agriculture</td>
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<td>VAT</td>
<td>Value-added taxation</td>
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<td>WDI</td>
<td>World Development Indicators</td>
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<td>WEF</td>
<td>World Economic Forum</td>
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<td>WGI</td>
<td>World Governance Indicators</td>
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<td>WVS</td>
<td>World Value Survey</td>
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<td>WHO</td>
<td>World Health Organization</td>
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<td>World Trade Organization</td>
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Moderating activity and heightened risks are clouding global economic prospects. International trade and investment have softened, trade tensions remain elevated, and some large emerging market and developing economies (EMDEs) have experienced substantial financial market pressures. Against this challenging backdrop, EMDE growth has stalled, with a sharply weaker-than-expected recovery in commodity exporters accompanied by a deceleration in commodity importers. Downside risks have become more acute. Disorderly financial market developments could disrupt activity in the affected economies and lead to contagion effects. Trade disputes could escalate or become more widespread, denting activity in the involved economies and leading to negative global spillovers. To confront this increasingly difficult environment, the immediate priority is for EMDE policymakers to prepare for possible bouts of financial market stress and rebuild macroeconomic policy buffers as appropriate. But there remains the longer run need to foster stronger potential growth by boosting human capital, removing barriers to investments, and promoting trade integration. Such efforts would also help address the challenges associated with informality.

Summary

Global growth is moderating, as the recovery in trade and manufacturing activity loses steam (Figure 1.1). Despite ongoing negotiations, trade tensions among major economies remain elevated and have been accompanied by heightened policy uncertainty. Borrowing costs for emerging market and developing economies (EMDEs) have increased, in part as major advanced-economy central banks continue to withdraw policy accommodation in varying degrees. A strengthening U.S. dollar, heightened financial market volatility, and rising risk premiums have intensified capital outflow and currency pressures in some large EMDEs, with some vulnerable countries experiencing substantial financial stress. Energy prices have fluctuated markedly, mainly due to supply factors, and other commodity prices—particularly metals—have weakened, posing renewed headwinds for commodity exporters.

Economic activity in advanced economies has been diverging of late. Growth in the United States has remained solid, bolstered by fiscal stimulus. In contrast, activity in the Euro Area has been somewhat weaker than previously expected, owing to slowing net exports. While growth in advanced economies is estimated to have slightly decelerated to 2.2 percent last year, it is still above potential and in line with previous forecasts.

EMDE growth edged down to an estimated 4.2 percent in 2018—0.3 percentage points slower than previously projected—as a number of countries with elevated current account deficits experienced substantial financial market pressures and appreciable slowdowns in activity. More generally, as suggested by recent high-frequency indicators, the recovery among commodity exporters has lost momentum significantly, largely owing to country-specific challenges within this group. Activity in commodity importers, while still robust, has slowed somewhat, reflecting capacity constraints and decelerating export growth. In low-income countries (LICs), growth is firming as infrastructure investment continues and easing drought conditions support a rebound in agricultural output. However, LIC metals exporters are struggling partly reflecting softer metals prices. Central banks in many EMDEs have tightened policy to varying degrees to alleviate currency pressures and confront rising inflation.

In all, global growth is projected to moderate from a downwardly revised 3 percent in 2018 to 2.9 percent in 2019 and 2.8 percent in 2020-21, as economic slack dissipates, advanced-economy central banks continue to remove policy accommodation, and global trade and investment growth weaken further. Unlike other advanced economies, near-term growth in the United States will be boosted temporarily by fiscal stimulus, which will likely lead to larger and more persistent

Note: This chapter was prepared by Carlos Arteta and Marc Stocker, with contributions from Patrick Kirby, Ekaterine Vashakmadze, and Collette M. Wheeler. Additional inputs were provided by John Buffen, Alain Kabundi, Eung Ju Kim, Csilla Lakatos, Peter Nagle, Rudi Steinbach, and Shu Yu. Research assistance was provided by Liu Cui, Ishita Dugar, Brent Harrison, Mengyi Li, Claudia Marchini, Julia Roseman, and Jinxin Wu.
### TABLE 1.1 Real GDP<br>(Percent change from previous year)

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**Memorandum items:**

#### Real GDP

- High-income countries: 1.7 2.2 2.2 2.0 1.7 1.6 0.0 0.0 -0.1
- Developing countries: 4.0 4.6 4.4 4.4 4.7 4.8 -0.3 -0.4 -0.1
- Low-income countries: 4.8 5.6 5.7 5.9 6.3 6.3 0.0 0.0 0.1
- BRICS: 4.4 5.2 5.3 5.2 5.3 5.3 -0.1 -0.2 -0.1
- World (2010 PPP weights): 3.3 3.7 3.6 3.5 3.6 3.6 -0.2 -0.3 -0.1
- World trade volume: 2.6 5.4 3.8 3.6 3.5 3.4 -0.5 -0.6 -0.5

#### Commodity prices

- Oil price: -15.6 23.3 31.6 -1.4 0.1 0.1 -1.0 0.0 0.0
- Non-energy commodity price index: -2.8 5.3 1.7 1.0 1.2 1.2 -3.4 0.8 0.7


Notes: PPP = purchasing power parity; e = estimate; f = forecast. World Bank forecasts are frequently updated based on new information. Consequently, projections presented here may differ from those contained in other World Bank documents, even if basic assessments of countries’ prospects do not differ at any given moment in time. Country classifications and lists of emerging market and developing economies (EMDEs) are presented in Table 1.2. BRICS include: Brazil, Russia, India, China, and South Africa.

2. GDP growth values are on a fiscal year basis. Aggregates that include these countries are calculated using data compiled on a calendar year basis. Pakistan’s growth rates are based on GDP at factor cost. The column labeled 2017 refers to FY2016/17.
3. The column labeled 2016 refers to FY2016/17.
4. World trade volumes of goods and non-factor services.
5. Oil is the simple average of Brent, Dubai, and West Texas Intermediate. The non-energy index is comprised of the weighted average of 39 commodities (7 metals, 5 fertilizers, 27 agricultural commodities). For additional details, please see http://www.worldbank.org/en/research/commodity-markets.

For additional information, please see www.worldbank.org/GEPI.
fiscal deficits. Advanced-economy growth will gradually decelerate toward potential, falling to 1.5 percent by the end of the forecast horizon, as monetary policy is normalized and capacity constraints become increasingly binding.

Moderating advanced-economy growth, softening global trade and investment, tightening financing conditions, and heightened trade tensions will result in a more challenging environment for EMDE economic activity. EMDE growth is expected to stall at 4.2 percent in 2019—0.5 percentage point below previous forecasts, partly reflecting the lingering effects of recent financial stress in some large economies (e.g., Argentina, Turkey), with a sharply weaker-than-expected pickup in commodity exporters accompanied by a deceleration in commodity importers. EMDE growth is projected to plateau at an average of 4.6 percent in 2020-21, as the recovery in commodity exporters levels off. Per capita growth will remain anemic in several EMDE regions—most notably, in those with a large number of commodity exporters—likely impeding further poverty alleviation.

Risks to global economic prospects are on the downside (Figure 1.2). A sharper-than-expected tightening of global financing conditions, or a renewed rapid appreciation of the U.S. dollar, could exert further downward pressure on activity in EMDEs, including in those with large current account deficits financed by portfolio and bank flows. Government and/or private sector debt has also risen in a majority of EMDEs over the last few years, including in many LICs, reducing the fiscal room to respond to shocks and heightening the exposure to shifts in market sentiment and rising borrowing costs.

Escalating trade tensions are another major downside risk to the global outlook. If all tariffs currently under consideration were implemented, they would affect about 5 percent of global trade flows and could dampen growth in the involved economies, leading to negative global spillovers. While some countries could benefit from trade diversion in the short run, rising trade protectionism would stifle investment and severely disrupt global value chains, contributing to higher

FIGURE 1.1 Summary – Global prospects

Global growth is moderating, as industrial activity and trade decelerate. Recovery in EMDEs has lost momentum owing to softening external demand, weakness in some commodity prices, and tightening external financing conditions. Many EMDE central banks have raised interest rates to fend off currency pressures. Per capita growth will remain anemic in several EMDE regions—most notably, in those with a large number of commodity exporters.

A. Global growth

B. Global industrial production and new export orders

C. Change in commodity prices, 2018

D. Growth in EMDEs

E. EMDE policy interest rates, by extent of currency depreciation against the U.S. dollar

F. Per capita growth, by region


Note: EMDEs = emerging market and developing economies.


B. New export orders measured by Purchasing Managers’ Index (PMI). PMI readings above 50 indicate expansion in economic activity; readings below 50 indicate contraction. Last observation is October 2018 for new export orders and September 2018 for industrial production.

C. Cumulative change for periods January 1 to June 14 and June 15 to November 29. June 15 indicates the date on which the United States announced tariffs on $34 billion of China’s goods.


E. The aggregate policy interest rates are calculated using constant 2010 U.S. dollar GDP weights. The above average and below average currency depreciation groups are defined by countries above or below the sample average of the year-to-date percent change in the bilateral exchange rate against the U.S. dollar. The sample average is -9.3 percent and includes 27 EMDEs, of which 11 are above average and 16 are below average. Last observation is October 2018.

F. EAP = East Asia and Pacific, ECA = Europe and Central Asia, LAC = Latin America and the Caribbean, MNA = Middle East and North Africa, SAR = South Asia, and SSA = Sub-Saharan Africa.
prices and lower productivity. Other downside risks—such as heightened political uncertainty, escalating geopolitical tensions, and conflict—further cloud the outlook.

Even though the probability of a recession in the United States is still low, and the slowdown in China is projected to be gradual, markedly weaker-than-expected activity in the world’s two largest economies could have a severe impact on global economic prospects. Stimulus measures have bolstered the near-term outlook in these two countries but could result in a more abrupt downturn later on. A simultaneous occurrence of a U.S. recession and a sharper-than-expected deceleration in China would significantly increase the probability of an abrupt global slowdown and thus negatively impact the outlook of other EMDEs through trade, financial, and commodity market channels. A global downturn would be particularly detrimental for those EMDEs with reduced policy space to respond to shocks.

The softening outlook and heightened downside risks exacerbate various challenges faced by policymakers around the world. Advanced economies should use this period of above-potential growth to rebuild macroeconomic policy buffers and lay the foundation for stronger growth with reforms that bolster potential output. Care should be taken to avoid shifts in trade and immigration policies that could negatively affect longer-term growth prospects, both domestically and abroad.

EMDEs policymakers need to bolster the capacity to cope with possible bouts of financial market volatility, including sharp exchange rate movements—while undertaking measures to sustain the ongoing period of historically stable inflation (Box 1.1). This will require from central banks a credible commitment to price stability underpinned by strong institutional independence, as well as efforts by regulators and prudential authorities to reduce persistent financial fragilities. EMDEs also face substantial fiscal challenges and the risk of worsening debt dynamics as global financing conditions tighten. For many EMDEs, it will be imperative to restore fiscal space given cyclical conditions, as well as
address the vulnerabilities associated with elevated foreign-currency-denominated debt.

Equally critically, amid a projected deceleration in potential growth, EMDEs face the substantial longer-term challenge of ensuring sustained improvements in living standards. This will require investments in human capital and skills development to raise productivity and take full advantage of technological changes—and, in a context of limited fiscal space, prioritize effective public spending and increase public sector efficiency. Facilitating the expansion of small- and medium-sized enterprises, including by improving their access to international markets and finance, would also spur productivity and stimulate growth-enhancing investments. For many EMDEs, there is scope to further liberalize trade and improve the extent to which they are integrated into global value chains, which would foster a more efficient allocation of resources, job creation, and export diversification. Policies that help improve outcomes in these areas would also contribute to address the challenges associated with informality, thus reinforcing the basis for future productivity growth.

**Major economies: Recent developments and outlook**

Growth has moderated in most advanced economies, with the notable exception of the United States, where fiscal stimulus is boosting activity. Over the forecast horizon, growth in all major advanced economies is projected to slow toward potential as capacity constraints become increasingly binding and monetary accommodation is withdrawn. In China, activity remains robust, but headwinds are increasing in a context of heightened trade tensions.

Incoming data in advanced economies have softened but still point to above-potential growth. Unemployment rates have continued to decline, and for many countries are below levels prior to the global financial crisis. After slightly decelerating from 2.3 percent in 2017 to an estimated 2.2 percent last year, advanced-economy growth is expected to continue slowing over the forecast period, with a notable slowdown in investment and the eventual shift of U.S. fiscal policy from stimulative to contractionary (Figure 1.3).

**United States**

U.S. growth in 2018 is estimated to have picked up to 2.9 percent, up 0.2 percentage point from previous projections mostly reflecting stronger-than-expected private consumption. Activity is being bolstered by procyclical fiscal stimulus and still-accommodative monetary policy, while domestic demand remains solid (Figure 1.4).

The labor market remains robust, bolstering consumption. The unemployment rate has fallen to an almost 50-year low, despite an influx of new workers—about three-quarters of the approximately 200,000 jobs being added every month are being filled by new entrants. Labor productivity is showing signs of picking up. Although nominal wages have begun to accelerate, they have so far been largely overtaken by an energy-driven rise in prices, leaving real wages stagnant. Long-term inflation expectations are edging up but still remain contained.

During 2018, the U.S. administration raised tariffs on about $300 billion worth of imports,
Emerging market and developing economies (EMDEs) have achieved a remarkable decline in inflation from a peak in the mid-1970s (Ha, Kose, and Ohnsorge 2019). Median annual national consumer price inflation in EMDEs fell from stubbornly persistent double-digits during the 1970s to about 3.5 percent in 2018 (Figure 1.1.1). By 2017, inflation was within or below central bank target ranges in three-quarters of the EMDEs that had adopted inflation targeting. Inflation has also fallen around the world, a peak of nearly 17 percent in 1974 to less than 2.5 percent in 2018. The decline in inflation began in the mid-1980s in advanced economies and in the mid-1990s in EMDEs. By 2000, global inflation had stabilized at historically low levels.

Low and stable inflation has historically been associated with greater output stability, higher growth and better development outcomes. EMDEs can continue enjoying the benefits of low inflation, but only if the confluence of structural and policy related factors that have fostered global disinflation over the past decades is sustained. In the near term, the global cyclical pressures that have depressed EMDE and global inflation over the past decade appear to be fading. This would likely test the resolve of EMDE policymakers to prolong the era of low inflation.

Against this backdrop, this box addresses the following questions:

- How has EMDE inflation evolved?
- How important is global inflation in explaining national inflation in EMDEs?

- What are the benefits of low inflation for growth and development outcomes?
- Can EMDEs sustain the era of low inflation?

**Evolution of EMDE inflation: A remarkable conquest**

**Disinflation.** EMDEs have achieved a remarkable decline in inflation since the early 1970s, with median annual national consumer price inflation down from a peak of 17.3 percent in 1974 to about 3.5 percent in 2018. Disinflation over recent decades has been broad-based across regions and country groups. For example, disinflation occurred across all EMDE regions, including those with a history of persistently high inflation, such as Latin America and Sub-Saharan Africa (Figure 1.1.2). Even among low-income countries (LICs), inflation fell by two-thirds between the mid-1970s and 2017, to 5 percent.

EMDE disinflation was set against the backdrop of sharper disinflation among advanced economies, where median inflation dropped from its highest (15 percent in 1974) to its lowest level (0.3 percent in 2015) in more than 60 years. Since then, it has risen somewhat to 1.5 percent in 2018Q2 but remains below the median inflation target of advanced-economy central banks. After 2008, below-target inflation and, in some cases, deflation became pervasive across advanced economies: for example, in 2015, inflation was negative in more than half of advanced economies. Some advanced-economy central banks have struggled to

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**Note:** This box was prepared by Jongrim Ha, M. Ayhan Kose, and Franziska Ohnsorge.

1 The “near-universal” character of the decline in inflation since the mid-1970s was recognized at an early stage by Rogoff (2003).

2 Disinflation is a decline in inflation rates, regardless of inflation being negative (deflation) or positive.

3 However, inflation remains in double-digits in some relatively large EMDEs, in part reflecting currency depreciations.
Drivers of low inflation. While the global financial crisis played a major role in pushing inflation down around the world over the past decade, the longer-term trend of disinflation has been supported by a wide range of structural changes. The most significant of these have been the wide-spread adoption of more effective and more transparent monetary, exchange rate, and fiscal policy frameworks as well as globalization.

- **Macroeconomic policies.** In the second half of the 1980s and during the 1990s, many EMDEs implemented macroeconomic stabilization programs and structural reforms, and gave their central banks clear mandates to control inflation. The adoption of resilient policy frameworks has facilitated more effective control of inflation (Taylor 2014; Fischer 2015). Twenty-four EMDEs have introduced inflation targeting monetary policy frameworks since the late 1990s and, in the median EMDE, the index of central bank independence and transparency rose more than one-and-a-half-fold between 1990 and 2014. Inflation tends to be lower in countries that employ an inflation targeting framework and that have more independent and transparent central banks (Ha et al. 2019). Changes in fiscal policy frameworks have also contributed: fiscal rules have been adopted in 88 countries, including 49 EMDEs; and EMDE government debt has fallen considerably from its peak in the early 1990s. Other reforms, including labor market and product market liberalization, and the removal or easing of foreign exchange market controls, also assisted the disinflation process.

- **Trade and financial integration.** Trade integration has contributed to lower prices, as higher shares of imports in consumption and production result in competitive pressures from foreign producers (Figure 1.1.4). Financial integration has helped discipline macroeconomic policies since more financially integrated economies are more likely to implement monetary policies targeting low and stable inflation (Kose et al. 2010). In the median EMDE, as in the median advanced economy, the ratio of trade to GDP increased by half between 1970 and 2017, to 75 percent of GDP, and international assets and liabilities tripled (although they remain only half the level of advanced economies). Inflation tends to be lower in economies that are more open to trade and financial flows (Ha et al. 2019).
Global inflation cycle: Getting stronger

A critical feature of the international inflation experience of the past five decades has been the emergence of a “global inflation cycle” (Ciccarelli and Mojon 2010). This is reflected in a growing contribution of a common global factor to the variation in country-level inflation rates. To analyze its importance, a dynamic factor model is estimated for annual consumer price inflation rates in 25 advanced economies and 74 EMDEs during 1970-2017 (Ha et al. 2019). The model includes a common global factor as well as group factors specific to advanced economies and EMDEs. The presence of group factors allows the model to account for the large differences in...
country characteristics between advanced economies and EMDEs.

Global inflation factor. Inflation has become increasingly globally synchronized (Figure 1.1.5). The contribution of the global factor to inflation variation has grown over time: since 2001, it has almost doubled, and now accounts for 22 percent of inflation variation (Ha et al. 2019a). It has explained about one-fifth and one-quarter of EME and advanced economy inflation variation, respectively, since 2001. Over the past four decades, an EMDE-specific factor has also become more prominent. The rising importance of these global and group-specific factors indicates that inflation synchronization has become more broad-based over time.

Global inflation versus global business cycle. Inflation synchronization is sizable by comparison with global business cycle synchronization. The international business cycle literature has established the presence of a well-defined global business cycle (Kose, Otrok, and Prasad 2012). In the sample used here, the global business cycle, as captured by a common global factor in output growth, has accounted for 5 percent of national output growth fluctuations since 1970—less than half the degree of inflation synchronization.

 Tradable versus non-tradable. The role of the global factor has been more prominent in price baskets with a larger tradables content. The global factor’s contribution to inflation variation was largest for import prices (54 percent in the median country) and smallest for core CPI inflation (5 percent). Between these two extremes, the global factor’s contribution to variation in PPI inflation was 42 percent and that for GDP deflator growth was 13 percent and comparable to that for headline CPI inflation.

Low inflation: Good for growth and development

Inflation can erode growth, which remains the main source of poverty reduction, by sapping investor confidence and weakening incentives to save. The damage of high inflation often falls disproportionately on the poor, since poorer households are more reliant than higher-income households on sources of income and forms of savings that do not keep pace with inflation.

Inflation and output growth. Historically, low and stable inflation, combined with well-anchored inflation expectations, has been associated with greater short-term stability of output and employment and higher long-term growth. Lower inflation has tended to be accompanied by lower inflation volatility and higher output growth. Lower inflation volatility, in turn, has typically been accompanied by lower output growth volatility, higher investment, and savings (Figure 1.1.4). Several channels account for the beneficial effects of low and stable inflation on economic activity. These include greater predictability for investors
and households, higher transparency of relative price changes, and improved financial stability (Ha et al. 2019a).

**Inflation and poverty.** While the evidence of a positive correlation between inflation and inequality or poverty is mixed at the aggregate level, the linkages are more established at the household level (Ha et al. 2019). In general, the literature suggests higher inflation is associated with mildly lower inequality in countries where inflation is already low (typically advanced economies), but that high inflation is associated with higher inequality in countries where inflation is already high (typically in EMDEs). The evidence also suggests that achieving stable and low inflation is associated with better outcomes for poverty, with the benefits greatest among low-income, high-inflation countries.

Poorer households may suffer greater welfare losses from inflation than wealthier households. In general, poorer households tend to be less able to protect the real value of their income and assets from the impact of inflation as they are more reliant on wage income, have less access to interest-bearing and foreign currency-denominated accounts, and are more likely to hold the majority of their savings in cash. They may also face a higher or more volatile rate of inflation than wealthier households, due to differences in the composition of their consumption baskets—for instance, poorer households may be relatively more exposed to food price volatility.

**Maintaining low inflation: A greater challenge**

The achievement of low inflation cannot be taken for granted (Rogoff 2014; Draghi 2016; Carstens 2018). Over the next decade, both cyclical and structural forces are likely to become less disinflationary than they have been over the past five decades. As global economic slack dissipates, inflation could rise globally. Through the strengthening global inflation cycle, this may put upward pressure on EMDE inflation. More importantly, structural and policy related factors that have helped lower inflation over the past several decades may lose momentum or be rolled back amid mounting populist sentiment.

- **Slowing globalization.** The rising protectionist sentiment of recent years may slow or even reverse the pace of globalization. New tariffs and import restrictions have been put in place in advanced economies and EMDEs since 2017. The possibility of further escalation in trade restrictions involving major economies remains elevated.
• **Weakening monetary policy frameworks.** A shift from a strong mandate of inflation control, to objectives related to the financing of government, would undermine the credibility of monetary policy frameworks and raise inflation expectations. Among EMDEs, a decline in central bank independence and transparency has been associated with significantly less well-anchored inflation expectations and greater pass-through of exchange rate movements to inflation.

• **Weakening fiscal policy frameworks.** Growing populist sentiment could lead to a move away from rule-based fiscal policies. Fiscal rules can become ineffective once commitment to them falters (Wyplosz 2012). Mounting public and private debt in EMDEs could also weaken commitment to strong fiscal and monetary policy frameworks. Government and/or private sector debt has risen in more than half of EMDEs since 2012, including in many LICs (World Bank 2018). EMDE sovereign credit ratings have continued to deteriorate, with some falling below investment grade, reflecting concerns about rising debt and deteriorating growth prospects.

If unwanted inflation makes a comeback, policy frameworks may be tested in EMDEs: their inflation expectations are less well-anchored, and the absence of strong monetary policy frameworks in many of these economies means that inflation is sensitive to exchange rate movements (Kose et al. 2019; Ha, Stocker and Yilmazkuday 2019). Growing inflation synchronization also increases the risk of policy errors when the appropriate response differs depending on the origin of the underlying inflation shock (IMF 2018). EMDE central banks may struggle to contain inflationary pressures and may not receive adequate support from fiscal policy in stabilizing the business cycle. For some EMDEs, a significant increase in inflation could set back poverty reduction efforts.

The demise of previous periods of sustained low inflation is a reminder that low EMDE inflation is by no means guaranteed. Inflation has been low and stable before: during the Bretton Woods fixed exchange rate system of the post-war period up to 1971 and during the gold standard of the early 1900s (Figure 1.1.6). Yet directly following the low inflation period that ended in the early 1970s, the sharp increase in oil prices in 1973-74 led to a rapid acceleration in global inflation and sharp declines in growth in many countries (Kose and Terrones 2015). Global inflationary pressures also led to a significant increase in domestic inflation in developing economies, including those that experienced relatively low and stable inflation in the late 1960s and early 1970s (Cline 1981). All three episodes of sustained low inflation are characterized by inflation below 5 percent for an extended period. It is notable, however, that the two earlier episodes

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5 Major advanced-economy central banks have also acknowledged the need to consider the global environment in setting monetary policy in light of the highly synchronized nature of global inflation (Bernanke 2007; Draghi 2015; Carney 2015).
mostly from China; other countries have retaliated with tariffs on about $150 billion worth of U.S. exports. In all, new tariffs have been imposed on about 12 percent of U.S. goods imports and may expand further, resulting in higher prices and elevated policy uncertainty (Lindé and Pescatori 2017; Kutlina-Dimitrova and Lakatos 2017).

During the forecast horizon, growth is expected to decelerate as monetary policy continues to tighten, and as fiscal stimulus fades and subsequently begins to drag on growth. Higher trade tariffs are expected to further weigh on activity, especially exports and investment. In all, U.S. growth is projected to slow to 2.5 percent in 2019 and to an average of 1.7 in 2020-21—roughly consistent with potential.

Euro Area

Euro Area growth slowed notably in 2018 to an estimated 1.9 percent, 0.2 percentage point below previous projections. In particular, net exports have softened, reflecting the earlier appreciation of the euro and slowing external demand (Figure 1.5).

While unemployment has declined, inflation remains stubbornly low. Headline inflation has risen to target, but largely due to a temporary acceleration in energy prices. Core inflation is still only about 1 percent, while long-term inflation expectations continue to hover around 1.7 percent, as in the past three years. The European Central Bank stopped adding to its balance sheet in 2018, although it is expected to maintain its negative interest rate policy until at least mid-
2019. Financial system lending and profitability have continued to increase, though some European banks may be exposed to financial stress in some EMDEs.

Across the Euro Area, the stance of fiscal policy is expected to be mildly expansionary, primarily because of increased German expenditures leading to smaller surpluses. Disagreements between the European authorities and the Italian government about its draft budget and resulting deficits have pushed up yields on Italy’s government debt.

In all, Euro Area growth is projected to further decelerate toward potential over the forecast horizon, to 1.6 percent in 2019 and an average of 1.4 percent in 2020-21, as monetary stimulus is withdrawn and global trade growth moderates.

Japan

Japanese growth slowed to an estimated 0.9 percent in 2018, reflecting contractions in the first and third quarters due to bad weather and natural disasters. Nevertheless, the labor market has been robust, with the unemployment rate at 2.3 percent, rising earnings, and the participation rate standing at 79 percent—up more than a percentage point since the beginning of last year. Rising labor force inputs, however, have been offset by weak productivity (Figure 1.6).

The Bank of Japan continues to provide stimulus by keeping long-term rates near zero and expanding its balance sheet. The government continues to run a primary deficit, which is expected to gradually narrow over the projection horizon.

Growth is expected to remain at 0.9 percent in 2019, as recovery from last year’s temporary disruptions is offset by fiscal consolidation and a slowdown in employment growth. The planned hike in the VAT rate is forecast to reduce growth to 0.5 percent in 2020, followed by a rebound to 0.7 percent in 2021.

China

Growth is estimated to have slowed to a still robust 6.5 percent in 2018, supported by resilient consumption (Figure 1.7). A rebound in private fixed investment helped offset a decline in public infrastructure and other state spending. However, industrial production and export growth have decelerated, reflecting easing global manufacturing activity. Import growth continued to outpace export growth, contributing to a shrinking current account surplus. Net capital outflows have resumed, and international reserves have been edging down. Stock prices and the renminbi have been experiencing continued downward pressures, and sovereign bond spreads have risen in a context
of ongoing trade tensions and concerns about the growth outlook.

New regulations on commercial bank exposures to shadow financing, together with stricter provisions for off-budget borrowing by local governments, have slowed credit growth to the non-financial sector. However, in mid-2018 the State Council reiterated its intention to pursue looser macroeconomic policies to counter the potential economic impact of trade disputes with the United States. Prices of newly constructed residential buildings have rebounded, including in Tier 1 cities following several years of correction. Consumer price inflation has moved up since mid-2018 partly reflecting currency depreciation and higher energy and food prices in most of last year, but it is still below target.

Growth is projected to decelerate to 6.2 percent in 2019, slightly below previous projections as a result of weaker exports, and to further moderate to 6 percent by the end of the forecast horizon, broadly in line with its potential pace. Domestic demand is projected to remain robust aided by policies to boost consumption. Supportive fiscal and monetary policies undertaken so far are expected to largely offset the negative impact of higher tariffs; however, additional stimulus may have the undesirable effect of slowing the deleveraging and de-risking process (World Bank 2018a).

Global trends

In 2018, global trade slowed more rapidly than expected alongside softening industrial activity. Trade policy uncertainty remains elevated, dampening global investment and trade. Borrowing costs have generally tightened in EMDEs following a broad-based appreciation of the U.S. dollar, bouts of investor risk aversion, and increased focus on country-specific vulnerabilities. External financing conditions are expected to continue deteriorating in 2019, as monetary policy accommodation in advanced economies is unwound. Oil prices were markedly volatile in the second half of 2018, mainly due to supply factors, and most other commodity prices—particularly metals—weakened on heightened trade tensions.

Global trade

Following strong momentum in 2017, global goods trade growth markedly slowed during the first half of 2018 and has only partially recovered since then. The deceleration was more pronounced than previously expected, as reflected in decelerating export orders and global manufacturing activity (Figure 1.8). In particular, global capital goods production, which is highly trade-intensive, has slowed notably in Europe and developing Asia, two tightly interconnected global manufacturing hubs
(Raschen and Rehbock 2016). Nearly a third of European exports and more than half of German exports to developing Asia are of machinery and vehicles, while capital goods and electronics account for a third of exports from developing Asia to Europe.

The softening of global goods trade comes against the backdrop of ongoing trade tensions involving major economies. New tariffs introduced since the beginning of last year have affected about 12 percent of U.S. goods imports, 6.5 percent of China’s goods imports, and about 2.5 percent of global goods trade. In the United States, tariff increases were implemented citing national security concerns and unfair trade practices. Import restrictions and tariff increases were also put in place in some EMDEs, as retaliatory actions or as measures aimed at reducing current account vulnerabilities in the face of intensifying capital outflow pressures (e.g. Arab Republic of Egypt, Kazakhstan, India, Indonesia, Islamic Republic of Iran, Pakistan, Sri Lanka, Turkey).

Combined with the rising prevalence of temporary trade barriers (such as anti-dumping and countervailing duties and safeguards), recent protectionist measures have disproportionately affected trade in parts and components, with negative repercussions for international value chains (Bown 2018; Baldwin 2018; Johnson and Noguera 2017). Increased tariffs on certain goods, including on U.S. steel imports, is associated with an especially large negative effect on producers in poorer and smaller EMDEs (Bown, Jung, and Zhang 2018). In contrast, some EMDEs may be benefiting in the short term from trade diversion, as rising tariffs increase the cost of targeted goods in the United States and China.

The temporary pause in tariff hikes agreed by the United States and China during the G20 meeting in early December 2018, the successful negotiations of the new United States-Mexico-Canada Agreement, and of the draft withdrawal treaty mapping the United Kingdom’s exit from the European Union (EU) have somewhat tempered trade policy uncertainties. However, the possibility of escalating trade restrictions involving major economies remains elevated. This uncertainty is likely to weigh on firms’ willingness to invest, export, and engage in international value chains, with negative effects on the global trade outlook (Osnago, Piermartini, and Rocha 2018; Feng, Li, and Swenson 2017; Handley and Limão 2015). In addition, rising interest rates in

FIGURE 1.8 Global trade

Global goods trade and industrial activity decelerated in 2018 amid trade tensions between major economies. A projected moderation of investment growth in China and major advanced economies is expected to lead to slower trade growth in coming years. Technological changes could continue to increase the share of services trade.
advanced economies and economic rebalancing in China is expected to contribute to slower global investment and trade growth, with the latter projected to decelerate from 3.8 percent last year to 3.4 percent by the end of the forecast horizon (Ahuja and Nabar 2012; Kose et al. 2017a). Global trade is still projected to grow somewhat faster than global GDP, but at a much weaker pace than previously envisaged, reflecting a deterioration in growth prospects in several large EMDEs and in the Euro Area, as well as trade policy uncertainties.

Structural factors continue to weigh on the medium-term outlook for global trade, including maturing international value chains (Constantinescu et al. 2018; ECB 2016; Hoekman 2015). However, technological change and progress in liberalization efforts under the Trade in Services Agreement (TiSA) should continue to increase the relative importance of services in global trade flows (Lodefalk 2014; Miroudot and Cadestin 2017).

Financial markets

Borrowing costs in advanced economies crept up during 2018, as inflation moved closer to central bank targets and monetary policy accommodation continued to be withdrawn. U.S. long-term yields reached 3.2 percent during the second half of 2018—their highest level since mid-2011, up about 80 basis point from the start of the year, and the third largest increase since 2000 (Figure 1.9). Notwithstanding a scaling back of central bank asset purchases in the Euro Area and Japan, negative interest rate policies in these economies have continued to keep a lid on global bond yields, with nearly $8 trillion of outstanding debt still trading at negative interest rates (16 percent of all bonds). A search for higher-yielding safe assets continued to support strong demand for long-term U.S. Treasuries, further compressing the U.S. yield curve despite rising inflation and ballooning U.S. government deficits driven by fiscal stimulus measures. Global equity markets dropped in the final quarter of 2018, reflecting concerns about softening growth prospects, rising borrowing costs, and trade tensions.

Divergent monetary policy among major economies also contributed to a significant
appreciation of the U.S. dollar in 2018. This, together with increased investor risk aversion and renewed attention to external vulnerabilities contributed to significant depreciations and capital outflows in many EMDEs. Since the U.S. dollar started strengthening in April 2018, EMDE currencies fell by an average of about 11 percent—the most significant episode of sustained depreciation over the past five years. Cumulative portfolio outflows from EMDEs also surpassed those seen after the 2013 Taper Tantrum, reflecting a broad-based sell-off in both equity and bond funds.

While financial market stress was most pronounced in Turkey and Argentina, many other EMDEs also suffered from deteriorating market sentiment. Countries with current account deficits financed by volatile capital flows, as well as countries with high short-term external debt, were most severely impacted, pointing to heightened investor focus on external vulnerabilities. Elevated domestic debt, above-target inflation, and idiosyncratic factors such as policy uncertainty played a role as well. As in previous episodes, EMDEs with more liquid currency and equity markets were disproportionately affected by shifting market sentiment and contagion effects (Ahmed, Coulibaly, and Zlate 2015; Eichengreen and Gupta 2014).

Bond issuance has slowed markedly since mid-2018, particularly in Latin America and the Caribbean and Eastern Europe and Central Asia, amid worsening external financing conditions. EMDE sovereign credit ratings have continued to deteriorate, with some falling below investment grade, reflecting concerns about rising debt and deteriorating growth prospects. Yields on foreign-currency-denominated debt rose by 150 basis points in 2018—among the three largest increases over the last two decades. Demand for cross-border bank loans has also weakened, with the appreciation of the U.S. dollar putting upward pressure on dollar funding costs. Various EMDE central banks have responded to currency and capital outflow pressures with interest rate hikes, leading to tighter domestic borrowing conditions and, in some cases, slower credit and domestic demand growth.

In contrast to the slowdown in portfolio and bank flows, foreign direct investment (FDI) into EMDE is estimated to have increased modestly in 2018, driven mainly by a rebound in flows to China. Outward FDI from China remained robust, boosted by the Belt and Road initiative.

Looking forward, global interest rates are likely to rise at a slightly slower pace than previously expected, reflecting increased headwinds to global growth. Nevertheless, external financing conditions are expected to tighten further in EMDEs, and capital flows to moderate, particularly among more vulnerable economies.

**Commodities**

Energy prices fluctuated markedly in the second half of 2018, mainly reflecting supply factors, and prices of most metals and, to a lesser extent, agricultural commodities weakened largely due to concerns about the effects of tariffs on global growth and trade. Prices of the three commodity groups are expected to generally stabilize in 2019 (Figure 1.10).

Oil prices averaged $69 per barrel (bbl) in 2018, a touch lower than June forecasts but about 32 percent higher than in 2017. While robust global oil consumption contributed to this increase, supply-side factors were the main drivers of price movements through the year. Continuing declines in production in Venezuela and market concern about the impact of U.S. sanctions on Iran contributed to rising Brent crude oil prices, which peaked at $86/bbl in early October. However, prices fell sharply in November after the United States announced temporary waivers to the sanctions on Iran for eight countries, including China and India. The decline in prices also reflected continued rapid growth in oil production in the United States, as well as a substantial increase in supply by the Organization of the Petroleum Exporting Countries (OPEC) and the Russian Federation.

Oil prices are expected to remain at $69/bbl in 2019 and 2020, unchanged from June projections, but uncertainty around the forecast is high. While growth in oil demand is expected to remain robust in 2019, the expected loss in momentum across
uncertainty remains about the full impact of Iranian sanctions once temporary waivers end, as well as the outlook for Venezuelan production. In contrast, increased supply from the United States is expected to help meet the anticipated rise in global demand, with capacity constraints likely to ease in 2019 as new pipeline capacity comes onstream.

Metals prices rose 6 percent on average, in 2018, less than previously expected. After a substantial increase in the first half of last year, prices fell sharply in the second half following the imposition of broad-based tariffs by the United States on China’s imports (World Bank 2018b). Heightened trade tensions involving these economies have raised market concerns about global trade and investment prospects; as a result, they have clouded the outlook for demand for commodities. Industrial metals have been particularly responsive to these concerns given their many uses in the manufacture of tradable goods, with some metals such as nickel falling more than 20 percent. In contrast, the price of steel and aluminum in the United States rose following the announcement of specific tariffs on imports of those metals from a wide range of countries. U.S. steel prices have increased by around 25 percent more than UK steel prices since the start of 2018. Metals prices are expected to stabilize in 2019 and 2020.

While agricultural prices were roughly flat in 2018 as a whole, they declined appreciably in the second half of the year, with developments varying by commodity. Soybean prices in the United States fell substantially following the announcement of tariffs by China on imports of U.S. soybeans, while prices rose in other countries, particularly in Brazil. The imposition of tariffs has led to trade diversion, with China’s imports of soybeans from the United States 25 percent lower in 2018 relative to 2017, while those from Brazil have risen 22 percent. In contrast, wheat prices were slightly higher as bad weather in Europe led to smaller harvests. Estimates for the 2018-19 crop forecast have been revised up for most commodities, and high stock-to-use ratios for rice and wheat reduce the likelihood of a food price spike. In all, agricultural prices are projected to remain broadly stable in 2019 and 2020.

EMDEs could have a greater impact on oil demand than expected. The outlook for supply is unclear and depends to a large extent on production decisions by OPEC and key non-OPEC producers, chiefly Russia. Considerable

FIGURE 1.10 Commodity markets

Commodity prices are expected to generally stabilize in 2019, following sharp movements last year. Crude oil prices fluctuated in the second half of 2018 mainly due to supply factors. Trade tensions between the United States and China, including the imposition of tariffs on a range of products, has had varying effects on metal and agricultural commodities. In particular, the impact has depended on whether tariffs were broad-based or commodity specific, such as in the case of steel and soybeans.
Emerging market and developing economies: Recent developments and outlook

EMDE growth is expected to stall at 4.2 percent in 2019, markedly below previous expectations. The forecast reflects the lingering effects of recent financial market pressure in some large economies, with a substantially weaker-than-expected pickup in commodity exporters accompanied by a deceleration in commodity importers. Growth is projected to plateau at 4.6 percent toward the end of the forecast horizon, as the recovery in commodity exporters levels off. In about 35 percent of EMDEs, per capita growth will be too low to avoid widening income gaps with advanced economies.

Recent developments

The recovery in EMDE activity has stagnated. Aggregate growth in EMDEs edged down to an estimated 4.2 percent in 2018—0.3 percentage point below previous projections—against the backdrop of a substantial strengthening of the U.S. dollar, weakening capital flows, heightened trade tensions, and moderating global manufacturing and trade. This more challenging international environment was accompanied by renewed market attention to country-specific vulnerabilities and financial stress in some large economies with persistent macroeconomic fragilities—most notably, Argentina and Turkey. More generally, the weakness in activity was most pronounced in EMDEs that suffered financial market pressures in a context of elevated current account deficits and high exposure to volatile capital flows (Figure 1.11). Many of these economies faced sizable currency depreciation, equity market declines, or foreign reserve losses (e.g., Angola, Argentina, Turkey, South Africa).

Domestic demand across EMDEs has moderated, reflecting tighter domestic borrowing conditions, softer confidence, and policy tightening in some large economies to ward off domestic price and capital outflow pressures. A rebound in EMDE gross capital formation that began in 2015 has slowed, and investor sentiment has deteriorated. On the external front, import growth has softened, partly due to sharp currency depreciations in some large economies, while export growth has also moderated, reflecting weaker external demand—notably, moderating global investment. Recent high-frequency indicators confirm the weakening momentum among EMDEs. For example, manufacturing Purchasing Managers’ Indexes for EMDEs have moderated, mainly reflecting substantially weaker activity in countries that have sizable current account deficits and rely heavily on portfolio and bank flows.

FIGURE 1.11 Activity in EMDEs

EMDE activity has stalled, in part reflecting the effect of financial stress in some large economies with sizable current account deficits and high exposure to volatile capital flows. Domestic demand across EMDEs has moderated, and trade flows have softened. High-frequency indicators suggest that the weakness continues, particularly in more vulnerable economies.
Commodity-exporting EMDEs

The pace of recovery in commodity exporters has weakened significantly, and activity across the group has become more heterogenous. Investor confidence has generally worsened, especially toward economies with external vulnerabilities and fragile domestic conditions (e.g., Argentina, Angola, Nigeria, South Africa). Recent declines in oil and other commodity prices have posited additional headwinds to activity.

Long-standing challenges in several large economies have resurfaced. In a number of countries, capital flows have softened, and asset prices and currencies have come under significant pressure, amid weaker global trade, rising trade restrictions, and renewed investor attention to country-specific factors including sizable current account and fiscal deficits and elevated debt. As a consequence, the rebound in domestic demand has slowed and the recovery in investment has stalled (e.g., Argentina, Brazil, Iran, South Africa). Private consumption growth has also cooled following several years of continued recovery, partly reflecting the dampening impact of rising inflation and tighter lending conditions.

Among the largest commodity exporters, growth in Argentina plummeted following acute financial market stress that resulted in sharp currency depreciation and monetary policy tightening. In South Africa, activity contracted in the first half of 2018 and remains subdued, reflecting challenges in mining production, a sharp fall in agricultural production, and policy uncertainty. Growth in Brazil was lackluster in 2018, reflecting a truckers’ strike mid-year and heightened policy uncertainty. In Russia, although growth has been resilient supported by private consumption, momentum has slowed reflecting policy uncertainty, recent oil price declines, and renewed pressures on currency and asset prices. Output has contracted in a number of other commodity exporters that suffer from social tensions or security issues (e.g., Equatorial Guinea, Nicaragua), as well as other idiosyncratic factors (e.g., sanctions in Iran).

In contrast, activity has firmed further in several oil-exporting economies where oil production rebounded in 2018 (e.g., Iraq, Kuwait, United Arab Emirates). Recoveries have also continued, to varying degrees, in several large energy exporters where significant adjustments were introduced in response to the 2014-16 oil price plunge (e.g., Azerbaijan, Colombia, Saudi Arabia; World Bank 2018c, 2018d). Despite recent declines in industrial metals prices, growth among some large metals exporters has continued to show resilience (e.g., Chile, Mongolia, Peru). In addition, activity in a number of countries has been supported by infrastructure spending and foreign direct investment flows (e.g., Benin, Burkina Faso, Côte d’Ivoire, Ethiopia, Kenya, Lao People’s Democratic Republic, Morocco, Senegal, Uganda; World Bank 2018e).

Commodity-importing EMDEs

Growth in commodity importers has decelerated, reflecting capacity constraints, moderating export growth, and deteriorated conditions in some large economies with elevated vulnerabilities and heightened policy uncertainty. Inflation has generally moved up, partly in response to higher energy prices in most of 2018 and closed or positive output gaps. Price pressures, widening fiscal and current account deficits, or in some cases currency and financial market volatility have prompted a shift to less accommodative monetary policy in some countries in this group (e.g., India, Mexico, Pakistan, the Philippines, Romania).

The moderation in activity is most evident among commodity importers with increasing capacity constraint, rising inflation, high current account deficits, or sizable public debt. The slowdown in Turkey—which faced a substantial deterioration in foreign investor confidence—has been especially severe. Activity is also slowing, and financial conditions have tightened, in a number of other commodity importers that have experienced financial market stress of continue to face widening fiscal and current account deficits (e.g., Pakistan, the Philippines, Romania).

Slowing Euro Area growth has diminished the positive trade and financial spillovers that had previously supported activity in several countries in Europe and Central Asia (e.g., Bulgaria, Croatia, Montenegro). However, in some economies, moderate inflation and low interest
rates have continued to push growth toward or above trend (e.g., Hungary, Poland, Serbia). Growth in Mexico remains moderate, partly owing to tighter financing conditions and domestic policy-related uncertainty.

Although activity continues to be generally more solid in Asia, external headwinds have increased. In India, growth has accelerated, driven by an upswing in consumption, and investment growth has firmed as the effects of temporary factors wane. However, rising interest rates and currency volatility are weighing on activity (World Bank 2018f). Other Asian economies (e.g., Bhutan, Cambodia, Vietnam) continue to benefit from pan-Asian infrastructure investment projects, including the China-led Belt and Road initiative (World Bank 2018a).

**Low-income countries**

Economic activity has continued to strengthen in most low-income countries (LICs; Box 1.2). Increased agricultural production in the wake of easing drought conditions is supporting robust growth in several non-resource-intensive countries (e.g., Rwanda, Uganda), as well as infrastructure investment related to reforms (e.g., Benin, Senegal). Among exporters of industrial commodities, growth performances have varied. Chad emerged from two years of recession partly due to the recovery in oil prices from their 2016 trough, as well as increased oil production. However, for metal exporters, growth was more subdued, reflecting weaker metals prices and external demand. Lower export growth, combined with higher fuel-related imports, has caused current account deficits to widen in many LICs. In addition, the less favorable external environment is making the financing of these deficits more challenging. Moreover, government debt has continued to rise, as fiscal deficits remain elevated due to commodity-related declines in revenue, as well as governance challenges in some countries (Chapter 4).

**EMDE Outlook**

**Growth outlook**

EMDE growth is expected to stall at 4.2 percent in 2019—down 0.5 percentage point relative to previous projections. This reflects the lingering effects of recent financial market stress on several large economies, a lackluster and notably softer-than-envisioned cyclical recovery in commodity exporters, and a further deceleration in commodity importers (Figure 1.12). Growth across EMDEs in 2019 is expected to be close to the upper bound of estimates of its potential pace—particularly among the commodity importers, where slack has been exhausted.

Growth in EMDEs is foreseen to reach an average of 4.6 percent in 2020-21, as the recovery in commodity exporters matures. Throughout the forecast horizon, the international context is expected to be increasingly less favorable, in light of a projected slowdown in advanced-economy growth, weakening trade and investment, tighter financing conditions, trade policy uncertainty, and reduced appetite for EMDE assets. These factors will impede further acceleration in EMDE activity.

Growth in commodity exporters is projected to pick up to 2.3 percent in 2019—sharply below previous expectations—and plateau at 2.9 percent in both 2020 and 2021. Some large economies that experienced sizable contractions in activity in 2018 are expected to gradually recover over the forecast horizon (e.g., Angola, Argentina, Iran). The outlook for commodity exporters is uneven, however, owing to divergences in commodity price movements and renewed market attention to country-specific vulnerabilities.

Projections for many commodity exporters have been downgraded. Downward revisions reflect, to varying degrees, more adverse financial conditions and the resulting policy adjustment, softening confidence, lingering effects of strikes and political uncertainty, and softer metals prices and mining bottlenecks. These downward revisions are also reflected in forecasts for EMDE regions with a substantial number of commodity exporters (Box 1.3; Chapter 2).

Growth in commodity importers is expected to moderate to 5.5 percent in 2019—broadly in line with its potential rate—and remain steady at 5.6 percent in both 2020 and 2021. A structural slowdown in China is expected to be partly offset by a moderate pickup in other large economies in
Recent developments

Economic growth is gradually improving in most low-income countries (LICs), even though the external environment is becoming less favorable (Figure 1.2.1). Robust growth in several non-resource-intensive countries has been supported by agricultural production (e.g., Rwanda, Uganda) and services (e.g., Nepal, Uganda) on the production side, and household consumption (e.g., Togo) and public investment (e.g., Benin, Burkina Faso, The Gambia, Nepal, Tajikistan) on the demand side. In LICs in the West African Economic and Monetary Union (WEAMU), growth exceeded 6 percent in Benin, Burkina Faso, and Senegal. Among exporters of industrial commodities, Chad emerged from two years of recession partly due to the recovery in oil prices from their 2016 trough, as well as increased oil production. However, the growth performance of metals exporters was more subdued, reflecting weaker metals prices and external demand, as well as mine closures (e.g., Sierra Leone), and heightened political uncertainty (e.g., Democratic Republic of Congo).

Progress on poverty reduction in LICs continues to be disappointing, with more than 40 percent of the population in these countries living in extreme poverty—i.e., earning below $1.90 per day. And while this ratio has remained broadly unchanged in recent years, insufficient per capita GDP growth, especially in economies affected by fragility, conflict, and violence, means that the poverty headcount is rising.

Current account deficits are estimated to have widened in several countries in 2018. Among non-resource-intensive economies, as well as metals exporters, external balances have deteriorated as exports declined in response to weaker external demand and moderating metals prices and the effect of rising fuel prices on import bills. In contrast, oil exporters, such as Chad, recorded smaller deficits, helped by higher oil export earnings.

The financing of current account deficits has become more challenging amid a less supportive external environment, as foreign direct investment (FDI) inflows slowed in almost 40 percent of countries (e.g., Mozambique, Tanzania, Zimbabwe; UNCTAD 2018). FDI inflows, in particular to LICs, are more vulnerable to fluctuations in international financial conditions (Burger and Ianchovichina 2017). However, in some countries, reduced political uncertainty and improved investor sentiment have supported stronger FDI inflows (e.g., Benin, The Gambia). In addition, remittance flows have recovered in several countries as growth in selected advanced economies improved in recent years (e.g., Benin, Guinea-Bissau, Haiti; World Bank 2018a). Nevertheless, for many LICs, the accumulation of sufficient international reserves remains difficult, leaving them below the three-months-of imports benchmark and highly vulnerable to negative shocks.

Fiscal deficits generally widened among the LICs, with the median deficit increasing from 3.3 percent of GDP in 2017 to an estimated 3.6 percent in 2018. The deterioration reflected rising fiscal deficits among several industrial-commodity-exporting LICs, where governments struggle to rein in spending (e.g., Mozambique), while moderating metals prices dampened revenues. However, in oil-exporting countries (e.g., Chad), higher oil revenues combined with improved non-oil revenue collection yielded a fiscal surplus, and in some non-resource-intensive countries, fiscal consolidation delivered narrower fiscal deficits (e.g., Benin, The Gambia).

Debt levels remain elevated in many countries and continue to rise. In Liberia and Sierra Leone, the debt-to-GDP ratio has increased more than twofold over the last five years, driven by continually weak revenue collection (Liberia) and a depreciating exchange rate coupled with new borrowings (Sierra Leone). In addition to the rise in debt ratios, changes in the composition of debt have made some countries more vulnerable to shifts in international financing conditions (Chapter 4). As countries have gained access to international capital markets and non-resident participation in domestic debt markets expanded, non-
concessional debt has increased, reaching more than 30 percent of total public debt in several LICs (e.g., Chad, Senegal, Mozambique, Ethiopia) and over half of total public debt in Zimbabwe.

As a result, debt sustainability has deteriorated in several LICs. At the end of 2017, Chad, Mozambique, Somalia, and Zimbabwe were classified as in debt distress under the IMF-World Bank debt sustainability framework. In addition, The Gambia, and Ethiopia more recently, were downgraded from moderate-risk to high-risk rating.

**Outlook**

Growth in LICs is expected to improve, rising to 5.9 percent in 2019 and an average of about 6.3 percent in 2020-21 (Figure 1.2.2). While the growth recovery among the metals exporters is expected to be sluggish, as lower revenues constrain fiscal spending, growth among oil exporters is expected to be spurred by higher oil production and improving domestic demand. Economic activity is also expected to remain robust in non-resource-intensive LICs. In fast-growing countries, such as Rwanda
Low-income countries: Recent developments and outlook

Growth among the LICs is expected to improve. In non-resource-intensive economies, growth will be supported by stronger agriculture production and continued infrastructure investment, while oil exporters should benefit from higher oil production. However, weaker metals prices and subdued external demand imply a sluggish recovery in metals exporters. Moreover, progress on poverty reduction in LICs is expected to be slow, as per capita income growth still remains modest, especially among fragility, conflict, and violence-affected economies.

Per capita GDP growth in LICs is expected to increase only modestly from 3.0 percent in 2018 to 3.3 percent in 2019, and to an average of 3.7 percent in 2020-21. Moreover, among LICs affected by fragility, conflict, and violence, growth in per capita GDP is expected to be significantly lower—increasing from 0.7 percent in 2018 to an average of 1.9 per cent in 2020-21. In all, these rates are not sufficient to generate a marked reduction in poverty rates, and the number of people in LICs living below the international poverty line of $1.90 per day is expected to remain elevated.

Risks

The outlook is dominated by downside risks. On the external front, slower-than-projected growth in major world economies—such as the United States, Euro Area, or China—would adversely affect export demand and investment in several LICs, specifically countries that are heavily dependent on these large economies for trade and investment flows. Moreover, escalating trade tensions involving major economies (e.g., rising tariffs between the United States and China) would be detrimental to LICs that depend on extractive industries—specifically metals producers, as metals prices are likely to fall faster than other commodity prices in response (World Bank 2018b). Furthermore, an unexpected deterioration in international financial conditions could disrupt capital inflows (IMF 2018), fuel disorderly exchange rate depreciations, and raise financing costs, especially in LICs with weaker macroeconomic fundamentals or higher political risks. Sharp increases in debt-servicing costs, specifically foreign currency denominated debt, would undermine much-needed fiscal consolidation efforts and crowd out poverty-reducing expenditures.

Risks to debt sustainability are high, as several countries are either already in debt distress or facing high risk thereof, according to the IMF-World Bank debt sustainability framework for LICs (Chapter 4). The recent increased reliance on foreign currency borrowing has increased the extent to which debt sustainability is vulnerable to sharp currency depreciations.
Weather-related shocks, such as flooding or severe and prolonged drought episodes, remain an important risk for many LICs. A return of the drought conditions experienced in recent years would undermine the ongoing recovery in agricultural production. In addition, lower agricultural output, and the food price spikes that are likely to follow, could adversely affect poverty rates in many LICs, especially countries where agricultural activity accounts for a dominant share of domestic value added (e.g., Chad, Sierra Leone), or is the prevailing source of employment (e.g., Burkina Faso, Burundi; Chapter 4).

Health crises are a continuous concern. The recent Ebola outbreak in the Democratic Republic of Congo could have a detrimental impact on economic activity in the country and the sub-region, if it were to spread to major urban centers and to neighboring countries.

### BOX 1.2 Low-income countries: Recent developments and outlook (continued)

#### TABLE 1.2.1 Low-income country forecasts
(Real GDP growth at market prices in percent, unless indicated otherwise)

<table>
<thead>
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<th>2016</th>
<th>2017</th>
<th>2018e</th>
<th>2019f</th>
<th>2020f</th>
<th>2021f</th>
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#### Percentage point differences from June 2018 projections

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World Bank forecasts are frequently updated based on new information and changing (global) circumstances. Consequently, projections presented here may differ from those contained in other Bank documents, even if basic assessments of countries’ prospects do not significantly differ at any given moment in time.

a. Central African Republic, Democratic People’s Republic of Korea, Somalia, Syria, and Yemen are not forecast due to data limitations.
b. GDP at market prices and expenditure components are measured in constant 2010 U.S. dollars.
c. GDP growth based on fiscal year data. For Nepal, the year 2017 refers to FY2016/17.
d. Due to changes in the official list of countries classified as low income by the World Bank, the sample of LICs in this table is not comparable to June 2018. However, an identical sample is used for the comparison of the aggregate LIC GDP projection.

For additional information, please see www.worldbank.org/isp.
BOX 1.3 Regional perspectives: Recent developments and outlook

The cyclical upswing in regions with many commodity exporters (such as Latin America and the Caribbean and the Middle East and North Africa) is proceeding at a more moderate pace than previously anticipated, partly reflecting a substantial slowdown in some large economies, and is expected to plateau toward the end of the forecast horizon. Growth in regions with large numbers of commodity importers (such as South Asia and East Asia and the Pacific) is projected to remain solid at around 6-7 percent. For all regions, risks to the outlook are increasingly tilted to the downside.

East Asia and Pacific. Growth is projected to moderate to a still-robust pace of about 6 percent in 2019 and remain near that level over the forecast period, broadly as previously expected. In China, policies aimed at rebalancing the economy and countering the impact of higher U.S. tariffs will continue to tilt activity toward consumption and away from exports. Excluding China, regional growth is expected to remain steady at 5.2 percent over the forecast horizon. Risks to regional growth are to the downside and have intensified. They include a further escalation of trade restrictions and a faster-than-expected tightening of global financing conditions. Highly leveraged economies and countries with sizable external financing needs are particularly vulnerable to disruptions in real and financial activity.

Europe and Central Asia: Growth is estimated to have fallen to 3.1 percent in 2018, driven by a slowdown in Turkey and in Central European economies. Turkish growth for this year has been revised sharply down due to substantial financial market stress and the associated economic effects, contributing to a deceleration in regional growth in 2019 to 2.3 percent. Growth in the region is expected to pick up to 2.7 percent in 2020, as a rebound in Turkey offsets a moderation in activity among other commodity importers. Risks are tilted to the downside and growing. They include the possibility of renewed stress in Turkey alongside larger-than-expected spillovers to the rest of the region, and unexpected shifts in policy.

Latin America and the Caribbean. Growth stalled at 0.7 percent in 2018, held back by currency crisis and drought in Argentina, a truckers’ strike in Brazil, and worsening conditions in Venezuela. Although regional growth is projected to strengthen over the forecast horizon, the improvement will be weaker than previously expected, partly owing to the effects of financial market tightening and trade policy uncertainty. However, firming momentum in Brazil and Colombia, together with gradual improvements in Argentina, will push regional growth to 1.8 percent in 2019 and 2.4 percent in 2020. Downside risks dominate, including the possibility of an abrupt further tightening of external financial conditions, a further escalation of domestic or international trade policy uncertainty, adverse market responses to fiscal conditions, and disruptions from natural disasters.

Middle East and North Africa. Growth in the region is expected to pick up slightly in 2019 to 1.9 percent, but prospects are uneven across countries. Accelerating activity in Saudi Arabia and Egypt is expected to be offset by sharp contraction in Iran following the imposition of U.S. sanctions. Rising oil production, high oil prices, and fiscal easing are supporting the recovery in some oil exporters, while oil importers continue to benefit from policy reforms. Regional growth is projected to rise to 2.7 percent in 2020-21, as domestic demand among both oil importers and exporters shows a broad-based pickup, supported by reforms and diversification policies. Key downside risks include the possibility of intensified geopolitical tensions, renewed volatility in oil prices, rising global trade restrictions, an abrupt tightening of global financing conditions, and delays in reform implementation.

South Asia. Growth is projected to accelerate to 7.1 percent in 2019—mainly reflecting strengthening domestic demand in India, as the benefits of structural reforms such as GST harmonization and bank recapitalization take effect. Elsewhere in the region, the forecast is for a moderation in activity, notably in Bangladesh and the Maldives. Over the medium term, growth is expected to remain at 7.1 percent, reflecting robust domestic demand in the region. External vulnerabilities are rising in the region, reflected in mounting external debt, widening current account deficits, and eroding foreign reserves. Risks to the outlook are to the downside. On the domestic front, vulnerabilities are being exacerbated by fiscal slippages and rising inflation, and there is a risk of delays in structural reforms to address balance sheet issues in the banking and non-financial corporate sectors. Key external risks are of a further deterioration in current accounts, higher global oil prices, and a faster-than-expected global financial tightening.

Sub-Saharan Africa. Regional growth is estimated to have reached 2.7 percent in 2018—a downward revision from

Note: This box was prepared by Patrick Kirby with contributions from Yoki Okawa, Rudi Steinbach, Temel Taskin, Ekaterine Vashakmadze, Dana Vorisek, and Lei Ye. Research assistance was provided by Hazel Macadangdang.
previous projections due to weaker-than-expected incoming data, lower prices of key commodities, financial market volatility, and stalled reform agendas. South Africa entered a recession in the first half of last year. In Nigeria, oil production declined due to pipeline closures, while farmer-herdsmen conflicts disrupted agricultural output. In Angola, oil production is falling, but it is projected to recover as new oil fields come on stream. Regional growth is expected to pick up, reaching 3.4 percent in 2019 and an average of 3.7 in 2020-21, as investment and consumer spending rebound. Downside risks include the possibility of further declines in commodity prices, a sharp tightening of global financing conditions, fiscal slippage, stalled structural reforms, and conflict. The region is also vulnerable to adverse weather shocks.

this group. In commodity importers excluding China, a downgrade to growth projections of 0.4 percentage point this year partly reflects the worsened outlook for Turkey as a result of the effects of recent financial market stress, and, to a lesser degree, in some other large economies (e.g., Romania, Pakistan).

Growth in LICs is expected to improve, rising to 5.9 percent in 2019 and 6.3 percent in 2020-21. However, for the metals exporters, growth will be more sluggish than previously envisioned, with lower revenues constraining fiscal spending. In contrast, oil exporters should benefit from higher oil production and improving domestic demand. Economic activity is expected to remain robust in non-resource-intensive LICs. In the fast-growing countries (e.g., Rwanda, Tanzania), the expansion will be supported by public investment in infrastructure and strong agricultural growth. Similarly, infrastructure investment related to structural reforms should sustain Senegal’s growth recovery. However, in Ethiopia—the largest LIC—growth is expected to moderate somewhat,
as the government tightens its fiscal stance to stabilize public debt.

In the longer run, the underlying potential growth of EMDEs has fallen considerably over the past decade reflecting softening productivity growth and, to a lesser degree, slowing capital accumulation and less favorable demographic trends (World Bank 2018g, Vorisek et al. forthcoming). Potential growth in EMDEs is expected to further decline, as its fundamental drivers continue to weaken. Moreover, tightening global financing conditions, higher borrowing costs, moderating capital flows, and lingering policy uncertainty are likely to hamper investment growth in the coming years, further constraining potential growth.

**Outlook for per capita income and poverty**

Per capita income growth in EMDEs is expected to pick up in 2019, but it will be insufficient to narrow income gaps with advanced economies in about 35 percent of countries (Figure 1.13). The share will be even greater among commodity exporters (42 percent); among LICs (close to 36 percent); and in countries affected by fragility, conflict, and violence (nearly 60 percent).

Although the extreme poverty rate—defined at a threshold of $1.90 per day—has fallen below 3 percent in more than half of the world’s economies in recent years, nearly a quarter of countries faced rates above 30 percent in 2015, with the average for LICs standing above 40 percent. Poverty rates remain the highest among LICs, but the majority of extreme poor currently reside in large lower-middle-income countries, including India and Nigeria. Current growth projections suggest that the number of extreme poor should continue to fall rapidly in India, but remain broadly unchanged in some other countries, including Nigeria. While extreme poverty has declined notably, progress in alleviating poverty at higher income levels has been slower, with nearly a quarter of the world’s population still living with less than $3.20 per day.

Worryingly, per capita income growth in Sub-Saharan Africa is expected to average only 0.9 percent in 2019-21—insufficient to drive significant progress toward poverty alleviation. Indeed, if recent growth trends persist, the fraction of the global poor residing in Sub-Saharan Africa could be as large as 87 percent by 2030 (World Bank 2018h).
Risks to the outlook

The balance of risks is more firmly on the downside. The risk of disorderly financial market developments has increased and could spread through EMDEs, amplified by elevated vulnerabilities in many countries. A marked intensification of trade restrictions remains possible, and its realization could be highly disruptive in the presence of complex value chains. Policy uncertainty and geopolitical risks remain elevated and could negatively impact confidence and investment both in the affected countries and globally. Although unlikely in the near term, the simultaneous occurrence of a U.S. recession and a sharper-than-expected deceleration in China would trigger a marked downturn in global activity.

Global growth is projected to gradually slow over the forecast horizon as economic slack dissipates, major central banks remove policy accommodation, and the recovery in commodity exporters matures. This moderation is somewhat more pronounced than previously expected, amid softer-than-expected global trade and industrial activity and heightened financial market pressures in some EMDEs. While an abrupt slowdown is only expected in countries that faced severe financial stress in 2018, the global outlook has become more uncertain, with downside risks becoming more predominant.

A faster-than-expected tightening of global financing conditions, or disorderly exchange rate movements, could have large adverse effects on activity, particularly among more vulnerable EMDEs. Escalating trade tensions represent another key risk to the global outlook, as they could significantly hamper cross-border trade and investment, with the impact amplified by complex regional and global value chains. Loss of confidence in international trading rules could inflict long-lasting damage, lowering opportunities for future growth in EMDEs. Rising political uncertainty and polarization, geopolitical risks, and conflict could also depress sentiment and investment in the affected countries and globally.

The materialization of one or several of these downside risks would result in a more abrupt slowdown in global growth than currently envisioned. In particular, a simultaneous occurrence of a U.S. recession and a sharper-than-expected deceleration in China would significantly increase the likelihood of a global recession. Past experience illustrates that global slowdowns and recessions often come unexpectedly after spells of highly synchronized growth and of rapid debt build-ups (Figure 1.14; Kose and Terrones 2015).

On the upside, a resolution of trade tensions between major economies could lift sentiment and support global investment and trade. Furthermore,
the ongoing cyclical recovery in global productivity growth could prove more durable than expected, including if the pickup in intangible investments in recent years lead to a broader diffusion of productivity-enhancing technologies. If so, this would help counter the dampening effect of population aging on potential growth in the longer term.

A quantification of possible global growth outcomes around the baseline provides additional evidence of elevated forecast uncertainty and the predominance of downside risks. At current market conditions, the probability of global growth being more than 1 percentage point below baseline in 2019 is estimated at 21 percent, while that of growth being more than 1-percentage-point above baseline is 17 percent. That range has widened and shifted further down from a year ago, reflecting increased uncertainty embedded in the distribution of key risk factors, including equity price futures.

Disorderly financial market developments

Risks of disorderly financial market developments have intensified substantially, reflecting the possibility of a faster-than-expected tightening of global financing conditions, sharp movements in major currencies, and contagion from financial stress in some EMDEs.

Despite bouts of volatility in bond and equity markets, as well as ongoing uncertainty about growth and inflation prospects, U.S. term premiums are still negative, raising the risks of sharp upward adjustments (Crump, Eusepi, and Moench 2018; Kopp and Williams 2018). Investors also continue to foresee a shorter and shallower tightening cycle in U.S. policy interest rates than currently signaled by the Federal Reserve, implying risks of disorderly market reassessments (FOMC 2018). In this context, a sharper-than-expected rise in U.S. borrowing costs remains possible, triggered for instance by concerns about rising inflation, swelling fiscal deficits, or slowing foreign demand for U.S. government debt (Andolfatto and Spewak 2018; Kopp and Williams 2018). Following a decade of exceptionally low U.S. interest rates and growing debt levels, the effects of a sudden rise in borrowing costs could be amplified by increased investor risk aversion and sudden stops in capital flows to EMDEs (Arteta et al. 2015; Buttiglione et al. 2014; Dobbs et al. 2015; Mai 2018). The dampening effect could be particularly severe on cross-border bank loans to EMDEs (Bräuning and Ivashina 2018).

A further appreciation of the U.S. dollar, possibly triggered by diverging monetary policy and growth prospects among major economies, could also impact the outlook for EMDEs. Periods of dollar strength have been associated in the past with an increased frequency of disorderly currency
depreciations in EMDEs. If currency crises were to materialize, they would be associated with slowing growth or outright contractions. In the past, a large proportion of crises were accompanied by a recession in the same year (Figure 1.15). When currency crises are accompanied by banking crises, as is sometimes the case, the likelihood of large output losses rises substantially (Laeven and Valencia 2018). These “twin” crises can occur in the presence of elevated foreign-currency-denominated debt or on the back of an abrupt end to capital inflows and credit booms leading to rising corporate defaults and large asset price corrections (Caballero 2014; Bordo and Meissner 2016).

Financial stress could spread through contagion effects. Excluding China and a few large regional economies (e.g., Russia, Brazil), direct trade and financial sector spillovers from most other EMDEs are limited (World Bank 2016). However, contagion across countries can result from heightened investor risk aversion and shifts in portfolio allocations between broad asset classes, amplifying the effects of shocks (Gelos 2012). Historically, the correlation across EMDE assets has been high and tends to increase during stress episodes (Park and Mercado 2013; Eichengreen and Gupta 2016).

These risks are particularly salient in the current context given persistent domestic and external vulnerabilities in EMDEs, as these can both amplify the impact of financial shocks and limit policy options in response to financial stress. On the domestic front, many countries evidence sizable government debt and primary fiscal deficits, elevated or rising private debt, and high non-performing loans. Corporate borrowers have increasingly relied on bond markets to finance rising debt levels, and now face significant refinancing needs amid rising interest rates (Lund et al. 2018). This could result in sudden increases in corporate default rates and have a sustained negative effect on investment and financial stability (Borensztein and Ye 2018). On the external side, many EMDEs are faced with the challenge of financing large current account deficits and rely heavily on volatile capital inflows. Coupled with high levels of short-term external debt and low foreign currency reserves, this leaves them exposed to shifts in external financing conditions, which could exert further downward pressure on activity.

In low-income countries (LICs), public debt burdens and vulnerabilities associated with a greater reliance on non-concessional financing are rising (Chapter 4). More than 40 percent of LICs are in debt distress or at high risk of debt distress—more than twice the share in 2013 (IMF 2018a; World Bank 2018e). Most LICs also suffer from a lack of transparency in public sector accounts, further exacerbating vulnerabilities.

**FIGURE 1.15 Financial stress**

More than a third of currency crises in EMDEs are associated with negative growth in the same year. Currency crises are sometimes accompanied by banking crises, and their simultaneous occurrence can be particularly damaging. Financial stress can be amplified by persistent external vulnerabilities, potentially leading to further forecast downgrades for more exposed countries.

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A. Currency crises with negative or positive GDP growth during the year of the crisis. Currency crises are defined as nominal depreciation of the currency vis-à-vis the U.S. dollar of at least 30 percent that is also at least 10 percentage-points higher than the rate of depreciation in the year before. Last observation is 2017.

B. The percent of EMDE currency crisis episodes that were preceded by, coincided with, or followed by a banking or sovereign debt crisis, with t denoting the start of the currency crisis. Crises episodes are as defined in Laeven and Valencia (2018).

C. Share of countries that experienced negative growth in the current or next year following a currency crisis, a currency and banking crisis, or a currency, banking, and sovereign debt crisis. Last observation is 2017.

FIGURE 1.16 Trade protectionism

If all new tariffs currently under consideration were to be implemented, more than 5 percent of global goods trade would be affected, and average U.S. tariff rates would increase to levels not seen since the early 1960s. The dampening impact of escalating trade tensions involving major economies could be amplified by adverse confidence effects. The cost of protectionism can be multiplied through global value linkages, particularly in EMDEs.

A. Imports affected by new tariffs

B. Average import tariffs in the United States

C. Impact on nominal GDP of tariff hikes on all U.S.-China trade flows

D. Magnification of tariffs due to vertical specialization


A. Import tariffs implemented in the United States and the rest of the world in 2018, as well as those under consideration, as a percent of global goods imports.

B. Ratio of duties collected to the total value of imports. Data for 2018-20 are forecast from tariffs under consideration, excluding car imports from Canada and Mexico, as of November 30, 2018.

C. Blue bars depict the impact of a 25-percentage-point increase of the tariff surcharge on all bilateral U.S.-China trade flows. Red bars depict the additional impact from adverse investor confidence. The additional confidence shock assumes a decline of the investment-to-GDP ratio of 0.5 percentage point, similar to that observed during the global slowdown in 2001. The percent deviations from CGE simulations are applied to GDP in current U.S. dollars.

D. The magnification ratio of vertical specialization is estimated by comparing a country’s standard tariff on exports with possible negative effects on confidence, has been estimated to reduce global exports by up to 3 percent and global income by 1.7 percent over the medium term (Freund et al. 2018).

More generally, a proliferation of trade barriers across both advanced economies and EMDEs could inflict lasting damage to the global economy. In particular, if all WTO members were to increase tariffs up to legally-allowed bound rates, this could translate into a decline in global trade flows of about 9 percent, similar to the drop seen during the global financial crisis in 2008-09 (Kutlina-Dimitrova and Lakatos 2017).

Escalating trade restrictions

The risk of rising trade protectionism remains high. U.S. tariffs and the retaliatory response of trading partners now affect close to $430 billion of global imports—around 2.5 percent of global goods trade (Figure 1.16). Despite a temporary pause in tariff hikes agreed by the United States and China in early December, unsuccessful negotiations could lead to a renewed escalation in trade restrictions. These, along with previous measures, would affect close to all goods trade between the two countries. Additional tariffs on U.S. imports of motor vehicles and parts are also under consideration, which could cause serious adverse effects given tightly integrated global automotive value chains.

If all proposed tariffs increases were to be implemented, the average U.S. tariff rate would more than quadruple, rising to levels not seen since the late 1960s. These new tariffs, and the associated retaliatory actions, could substantially depress bilateral U.S.-China trade, increase demand for costlier substitutes, and lead to lower growth in both the United States and China. It is also likely to affect investment strategies by multinational companies and lead to changes in some value chains. While some countries could benefit from trade diversion in the short run, including those with comparative advantages in close substitutes to the goods subject to U.S. or China tariffs, adverse effects from weakening growth and rising policy uncertainty involving the world’s two largest economies would have predominantly negative repercussions. In this context, a further escalation of trade frictions between the United States and China, coupled with possible negative effects on confidence, has been estimated to reduce global exports by up to 3 percent and global income by 1.7 percent over the medium term (Freund et al. 2018).
is usually lower and trade costs higher than in advanced economies. In the automotive sector, participation of EMDEs in global value chains has proliferated in the past decade, intensifying risks in the case of sudden pullbacks (Van Biesebroeck and Sturgeon 2011).

Intensifying trade disputes could eventually threaten the stability of the rules-based global trading system and undo the beneficial effects of trade liberalization and global integration achieved during decades of multilateral cooperation. Uncertainty about future trade rules could compound the negative effect of trade barriers on investment and activity (IMF 2018b; Kose et al. 2017a).

Policy uncertainty and geopolitical tensions

Global policy uncertainty has increased since mid-2018, reflecting heightened trade tensions and geopolitical risks, as well as idiosyncratic developments in a number of large advanced economies and EMDEs. Elevated policy uncertainty tends to encourage investors to require higher risk premiums to hedge against negative outcomes. Financial market volatility remained exceptionally low in 2018, implying the risk of disorderly repricing of policy-related risks (Figure 1.17). A further escalation of policy uncertainty could lead companies to delay or reconsider capital spending, contributing to a more rapid deceleration of global growth than currently projected.

Political uncertainty is generally associated with lower growth in both advanced economies and EMDEs (Aisen and Veiga 2013). It has increased or remained elevated in a number of European countries—including in the United Kingdom as it transitions out of the EU, and in Italy where fiscal slippages have led to a market reassessment of country risk. Electoral outcomes in a number of EMDEs and advanced economies could result in further polarization and political fragmentation, making it harder to govern and formulate policies. A backlash against trade and immigration could also spur more inward-looking and populist policies (Aksoy, Guriev, and Treisman 2018; Moriconi, Peri, and Turati 2018).

Geopolitical risks intensified again in the Middle East, and persist in Central Asia, East Asia, and Africa. An intensification of these risks could impact growth the affected regions, and their main trading partners. In the case of the Middle East, disruptions to global oil supplies could result in higher-than-expected oil prices, with negative impacts on aggregate demand and trade balances in major oil importers (Baffes et al. 2015; Stocker et al. 2018).
The number of armed conflicts also remains above historical averages. In particular, security conditions remain challenging in many countries in Sub-Saharan Africa, the Middle East, and North Africa. In the past, countries in conflict or in fragile situations suffered from below average growth in income per capita, delaying or derailing their catchup with advanced economy levels (UN and World Bank 2018). Beyond adverse short-term effects on growth, conflict can also substantially set back efforts to reduce poverty and child mortality, and can hamper access to education, implying longer lasting negative repercussions on development (Gates et al. 2012).

Region-specific downside risks

These global risks are compounded by multiple region-specific risks (Box 1.2; Chapter 2). Most regions are vulnerable to sudden shifts in policy, which could result in fiscal slippage, reduced investment due to policy uncertainty, and weaker potential growth resulting from insufficient structural reforms. Security-related risks remain present, in varying degrees, in Europe and Central Asia, the Middle East and North Africa, South Asia, and East Asia, and could rise in the face of renewed geopolitical tensions. A flare-up in violence would disrupt activity in various ways, weigh on potential output, and drive up refugee flows. A fall in the price of specific commodities could disrupt activity in large regional commodity exporters, with possible broader spillovers.

Severe weather events appear to be becoming more frequent, with particularly serious consequences for vulnerable countries, such as island nations in the Caribbean and East Asia and the Pacific. Adverse weather patterns are also problematic for countries with large agricultural sectors dependent on rainfall, including many in Sub-Saharan Africa and South Asia. In those countries, large food price increases could severely impact poverty (Chapter 4). For instance, the spike in food prices in 2007-08 is estimated to have placed around 140 million to 155 million people below the extreme poverty line. Other natural disasters, such as earthquakes and hurricanes, can inflict severe damage in the affected countries. These events are unpredictable and often force countries to overly rely on aid for reconstruction, even though recent progress in disaster risk finance has created opportunities for preventive actions (Végh et al. 2018).

Simultaneous slowdown in the two largest economies

Fiscal measures undertaken in the United States and China are supporting their near-term growth prospects; however, they could exacerbate imbalances and amplify risks of a more abrupt downturn later on. A sharper-than-expected and simultaneous slowdown in these two economies could have severe consequences for the global economy.

The policy mix in the United States will shift from expansionary to contractionary during the forecast horizon, with monetary, fiscal, and trade policies all expected to become a drag on activity within the next couple of years. In this context, relatively small negative shocks have the potential to abruptly end the current expansion, which is on track to be the longest in more than century (Figure 1.18). Although the probability of a U.S. recession in the short term is still low, at about half its level prior to previous recessions, it has increased throughout 2018.

Economic expansions do not end, and give way to recessions, only because they have lasted long (Castro 2013; Diebold and Rudebusch 1999; Rudebusch 2016). Instead, they tend to end as a reflection of corrections from imbalances accumulated over the business cycle. In particular, recessions often follow periods of rapid increase in debt levels and excessive asset price valuations (Mendoza and Terrones 2012; Claessens, Kose, and Terrones 2012). These imbalances tend to suddenly unwind, often during or shortly after the end of a monetary policy tightening cycle (Bernanke and Gertler 1995; Sims and Tao 2006). In the United States, three of the last four tightening cycles were indeed followed by a recession within a year and a half, with the most severe contractions following unsustainable housing market booms (Gelain, Lansing, and Natvik 2018; Mian and Sufi 2009; Berkovec, Chang, and McManus 2012). The only exception was the productivity-driven growth revival around mid-1990, which continued uninterrupted despite interest rate hikes in 1994-95.
At the present juncture, the rise in U.S. private debt is smaller than prior to past recessions, mostly because of household and bank deleveraging since the global financial crisis. U.S. corporate debt is starting to accumulate, however, raising the risk that corporate bond defaults could amplify the next downturn. On balance, the U.S. economy has some of the characteristics that have preceded relatively mild recessions, but some corporate and non-bank financial sector risks are a source of concern (IMF 2018c).

In China, risks to the outlook are increasingly tilted to the downside. Fiscal and monetary policy stimulus measures could offset the adverse effect of trade tensions with the United States but may delay efforts to contain credit growth and limit the buildup of balance sheet vulnerabilities of corporates, local governments, and financial institutions (IMF 2017; World Bank 2018g, World Bank 2018i). Both the level and pace of increase in the stock of private debt are well above those observed during previous credit booms in other EMDEs—two thirds of which ended in significant growth slowdowns and more than a third in financial crises (Acharya et al. 2015; Alter and Elekdag 2016). In the case of China, risks are somewhat tempered by still low central government debt, extensive capital controls, large foreign reserves, and a low reliance on external financing. That said, if financial stress were to materialize, it would likely translate into a significantly sharper-than-expected slowdown in activity (Bernadini and Forni 2017; Beltran, Garud, and Rosenblum 2017; Maliszewski et al. 2016).

The simultaneous occurrence of a recession in the United States and a sharper-than-expected slowdown in China, although still unlikely in the near term, would substantially increase the risk of an abrupt global downturn, or even a global recession. These two economies are, together with the Euro Area, the most important source of global spillovers, and can impact the outlook for EMDEs through trade, confidence, financial-market, and commodity-market channels (World Bank 2016).

In all, a 1-percentage-point decline in U.S. growth is estimated to translate after one year into a

FIGURE 1.18 Simultaneous slowdown in the two largest economies

The U.S. expansion is on track to be the longest in more than a century. The probability of a U.S. recession in the short term is still low, but has increased, and corporate debt vulnerabilities are growing. Private debt in China exceeds levels that gave rise to significant adjustments in other EMDEs in the past. A simultaneous sharp slowdown in both the United States and China could bring the global economy closer to a global recession.

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A. Shaded area indicates the number of months from January 2019 to December 2019.
B. Probability of a recession in 12 months derived from the U.S. yield curve model of the Federal Reserve Bank of New York. Last observation is October 2018.
C. Shaded areas indicate recessions, as identified by the National Bureau of Economic Research (NBER). Last observation is 2018Q2.
D. Debt peaks are defined as the highest value of the private non-financial credit to GDP ratio over the period 1960Q1 to 2018Q1. Sample includes 15 EMDEs. For China, values are the last observations in 2018Q1.
E. Countries must have experienced a currency, systemic banking, or sovereign debt crisis within two years after reaching the peak debt-to-GDP ratio. A slowdown is defined as a 1-percentage-point or more drop in GDP growth between the two years before and the two years after peak debt-to-GDP ratio. Sample includes 15 EMDEs.
F. Blue and red bars show scenarios assuming a 1-percentage-point growth shock in China, the United States, and the combination of the two. Shocks are applied in the second half of 2019. Based on the vector autoregression model presented in World Bank (2016). Deviations from baseline are all significantly different from zero.
systemically large economies decelerate (Kose and Terrones 2015). For instance, a recession in the United States increases the probability of a global recession from 7 percent on an average year to 50 percent. The risk of a global downturn or recession could be magnified as policymakers’ ability to respond is constrained by a lack of fiscal and monetary space and by a reduced appetite for coordinated policy responses among major economies. High levels of private and public debt also make EMDEs particularly vulnerable to adverse shocks (World Bank 2018g). The materialization of a global downturn could set back efforts to alleviate extreme poverty—including in Sub-Saharan Africa, where progress has been slow in recent years.

Possible productivity revival

Although global downside risks predominate, a sustained revival in productivity growth following cyclical improvements in 2017-18 could lead to stronger-than-expected global activity (Figure 1.19). An acceleration in patent applications and growing investments in intangible assets could be tentative signs of such a revival. Greater connectivity, falling computing costs, and open software architectures could also facilitate the adoption of digital technologies and enable less productive firms to catch up with the technological frontier (Andrews, Criscuolo, and Gal 2016; OECD 2018). Over the medium term, breakthroughs in data processing, artificial intelligence, and manufacturing could drive additional productivity-enhancing innovations (Diamandis and Kotler 2012; Brynjolfsson and McAfee 2014).

Economies experiencing faster productivity growth would benefit from additional policy room, as the recovery could continue without generating overheating pressures. This could allow for a more gradual pace of monetary policy tightening than currently envisioned and facilitate the necessary restoration of fiscal buffers given higher revenues. A sustained pickup in productivity could also spur additional investments and trigger virtuous cycle between capital deepening and growth.
Policy challenges

Challenges in advanced economies

Advanced economy monetary policy is expected to gradually become less stimulative, especially in the United States, where tightening is proceeding more quickly than elsewhere partly in response to procyclical fiscal easing. Advanced economies should use this period of above-potential growth to create the room to respond to future cyclical shocks. Longer-term prospects remain subdued and could be further eroded by major shifts in trade and immigration policies.

Monetary and financial policies

The U.S. Federal Reserve is gradually removing stimulus in response to low unemployment and near-target inflation amid procyclical fiscal stimulus. In contrast, the European Central Bank and the Bank of Japan have signaled that they will be holding policy rates at current levels in the near term.

For the first time since the financial crisis, the main U.S. policy rate is approaching its neutral level (Figure 1.20). However, the policy rate is expected to peak at about 3 percent, meaning the Federal Reserve has significantly less room to cut rates before reaching the zero lower bound should a new downturn occur—in the last three downturns, the Federal Reserve cut its policy rate by about 5 percentage points.

To varying degrees, central banks in other advanced economies currently have even less policy space. While unconventional monetary policies could again be deployed, their effectiveness in returning inflation to target and supporting growth is subject to debate (Bernanke 2017a; Engen, Laubach, and Reifschneider 2015; Greenlaw et al. 2018). This lack of monetary space highlights the importance of avoiding a policy-driven downturn in activity, combined with research into alternative methods of providing monetary policy stimulus (Bernanke 2017b, Williams 2017).

Fiscal policy

In many advanced economies, government debt-to-GDP ratios have reached unprecedented levels, becoming the largest component of debt. This limits the capacity of countries to provide countercyclical fiscal stimulus in response to economic slowdowns (Huidrom et al. 2016).
The significant U.S. fiscal stimulus has been enacted when the economy is already at or above full employment and is expected to result in persistent deficits equivalent to about 5 percent for most of the next decade (CBO 2018). In these circumstances, the consequence of pro-cyclical stimulus is likely to be inflation pressures, higher domestic interest rates, a crowding out of private sector activity, and a widening of the U.S. current account deficit.

**Structural policies**

Potential growth remains subdued in advanced economies and is likely to slow further in coming years, partly due to aging populations and declining birth rates (Figure 1.21; World Bank 2018g). An increasing number of countries are raising barriers to immigration, which might hasten this deceleration. Immigration is an important reason for rising labor forces in many advanced economies and may also contribute to productivity growth; immigrants skew younger than host populations, and younger populations have been associated with faster labor productivity growth for various industries and occupations (World Bank 2018j; Maestas, Mullen, and Powell 2016). Heightened restrictions on immigration could also worsen fiscal positions, by dampening growth and the net contribution that immigrants typically provide to the government budget (Clements et al. 2015).

Recent trade disputes represent a critical headwind to longer-term prospects. Rising tariffs may already be contributing to weaker productivity by increasing costs, disrupting global supply chains, strangling productive assets, and relocating activity away from the most efficient locations (Melitz 2003). Lack of policy clarity also risks causing firms to delay investment because of uncertainty over market access. This highlights the importance of a continued commitment to a rules-based international trading system.

Increasing restrictions to trade and immigration could therefore result in weaker growth and lower productivity. While international trade and immigration can impose costs on some sectors of the economy or vulnerable groups of workers, a better course is to adopt policies that mitigate these costs and redistribute more equitably the benefits of globalization.

**Challenges in emerging market and developing economies**

Recent financial market stress in some EMDEs highlights the need to strengthen buffers against the risk of less favorable global financial conditions. Fiscal positions remain fragile, underscoring the urgency to improve domestic revenue mobilization and to commit to or deepen fiscal reforms aimed at controlling expenditures. In the longer-term, steps to enhance human capital, encourage regional economic integration, and lower barriers to investment for small- and medium-sized enterprises would boost potential growth and help tackle challenges associated with high informality. China’s key policy challenge is to foster the transition to more sustainable growth while dealing with trade-related headwinds without overstimulating the economy and delaying the deleveraging process.

**Policy challenges in China**

Authorities in China have shifted to looser monetary and fiscal policies in response to a more challenging external environment, including heightened trade tensions. They have cut reserve

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**FIGURE 1.21 Structural policies in advanced economies**

Potential growth is expected to decelerate in advanced economies, partly due to demographic factors. This deceleration is likely to be more severe if government policies lead to heightened restrictions on immigration, as immigrants tend to be younger than the native population.

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**A. Potential growth in advanced economies**

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**B. Immigrant versus native population age distribution to OECD destinations**

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A. TFP = total factor productivity growth. Figure shows potential growth estimates based on the production function approach. For further details on potential growth estimates, refer to the January 2018 edition of the Global Economic Prospects report. Aggregates calculated using constant 2010 U.S. dollar GDP weights. Sample includes 30 advanced economies.

B. “Working age” includes population aged 25-64 years, “dependents” includes population aged 0-24 and above 65 years. Country-level age proportions are weighted by size of the immigrant population. Data are from the 2010-11 OECD Database on Immigrants in OECD and Non-OECD countries (DIIOC-E).
requirements, introduced new tax breaks for financial institutions lending to small firms, and encouraged banks to buy more local government bonds. They have also reduced taxes and fees, increased export tax rebates, and accelerated issuance of special purpose local government bonds to bolster infrastructure spending. In addition, the authorities have stepped up their structural reform efforts to improve the business environment, including for foreign firms, and have lowered tariffs on imports—with the critical exception of tariffs on U.S. imports in retaliation to U.S. tariffs on China’s goods.

The trade disputes with the United States, and the ongoing moderation of global trade, highlight China’s key economic policy challenge—namely, how to confront trade-related headwinds with supportive policy actions that avoid overstimulating the economy and delaying the deleveraging process, while fostering the transition to more sustainable growth (World Bank 2018a). This will require continued reforms to reduce financial vulnerabilities, including those associated with the accumulation of non-financial enterprise debt. Additional efforts to enhance market competition, encourage a shift of capital and labor toward more productive firms and sectors, and bolster household consumption would also be needed (World Bank 2018k). Advancing reforms that boost innovation, including through stronger intellectual property rights, would also help alleviate trade frictions while enhancing China’s competitiveness in the medium term. In addition, productivity-enhancing investments in health, education, and research and development would encourage a shift from growth that is dependent on physical capital and help offset the impact of adverse demographic trends.

**EMDE monetary and financial policies**

Policy challenges across many EMDEs have been compounded by recent financial market pressures that have been associated with sizable currency depreciations and capital outflows. Among some key EMDEs, currency and financial market pressures were substantial (e.g. Argentina, Turkey), leading to significant policy tightening and markedly clouding the near-term macroeconomic and financial outlook. More generally, monetary policy became less accommodative in EMDEs that faced above-average currency depreciation, or that used up reserves to stem it (Figure 1.22).

Weaker exchange rates have pushed up inflation across many EMDEs, particularly in some key commodity exporters, highlighting the role of the

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**FIGURE 1.22 EMDE monetary policy**

Monetary and financial policy challenges have been compounded by recent financial market pressures. Policy interest rates and inflation ticked up in EMDEs facing above-average currency depreciation against the U.S. dollar in 2018. The share of EMDEs hiking policy rates during U.S. tightening cycles is markedly higher than the share of EMDEs cutting rates during U.S. easing periods, suggesting that ongoing U.S. normalization may constrain the room of maneuvering of many EMDE central banks. Higher borrowing costs contributed to an increase in sovereign bond spreads, especially in EMDEs with large current account deficits.

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**TABLE 1.21 EMDE monetary policy**

<table>
<thead>
<tr>
<th>A. Policy interest rates, by extent of currency depreciation against the U.S. dollar</th>
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<td>Above average depreciation</td>
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<th>B. Inflation, by extent of currency depreciation against the U.S. dollar</th>
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<td>Percent</td>
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<td>Oct-17</td>
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<th>C. Share of policy interest rate changes following U.S. policy rate hikes or cuts</th>
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<td>Pegged exchange rates</td>
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<th>D. Change in sovereign bond spreads, by extent of current account deficit in 2018</th>
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<tr>
<td>Above average current account deficit</td>
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A.B. The above average and below average currency depreciation groups are defined by countries above or below the sample average of the year-to-date percent change in the bilateral exchange rate against the U.S. dollar. The sample average is 9.3 percent and includes 27 EMDEs, of which 11 are above and 16 are below average. Last observation is October 2018.

A. The aggregate policy interest rates are calculated using constant 2010 U.S. dollar GDP weights.

B. Median consumer price inflation for each group.

C. Pegged exchange rates are defined, based on a de facto classification, as exchange rates fluctuating within a +/-2 percent band or, at most, a one-time devaluation over the preceding 11-month period relative to a country-specific reference currency. Refer to Shambaugh (2004) for details. Unbalanced sample includes 108 non-LIC EMDEs and considers policy rate actions from 1970 onwards. Last observation is October 2018.

D. The above average and below average current account deficit groups are defined by countries above or below the 2018 sample average of the current account balance. The sample average is -1.6 percent of GDP. The sovereign bond spread is measured by J.P. Morgan Emerging Market Bond Index (EMBI). Sample includes 38 EMDEs. Last observation is November 2018.
exposures to foreign currency borrowing and currency mismatches, as appropriate, can help contain the financial system’s vulnerability to dislocating exchange rate movements (Ahnert et al. 2018). For EMDEs that have made progress on macroprudential reforms, enhancing financial deepening and improving governance could further boost resilience to shocks (Sahay et al. 2015).

EMDE policymakers also need to uphold a credible commitment to medium-term price stability, which can be supported by macroeconomic frameworks that set attainable inflation targets where appropriate, as well as maintain strong institutional independence and transparency. This will be especially critical if the ongoing period of low and stable global inflation came to an end, perhaps driven by a slowdown or rollback of the structural factors that have held inflation at bay in recent decades—in particular, trade and financial integration—or an erosion of central bank independence. The reversals of these long-term trends could coincide with cyclical upward pressures on prices in EMDEs, reigniting inflation (Box 1.1).

EMDE fiscal policy

Government finances in many EMDEs are in a fragile position, with deteriorating debt dynamics and limited fiscal space. In some cases, much needed reforms to improve fiscal space have either stalled or not been fully implemented, while funding new or increasing liabilities, such as public wage bills, have put further strain on domestic revenues (e.g., Brazil, South Africa).

Oil exporters continue to face fiscal sustainability challenges, with recent oil price volatility highlighting the need for these countries to continue to reduce their reliance on oil revenues by deepening reforms that bolster the non-resource budget (e.g., Ecuador, Russia; IMF 2018d). In metals and agricultural producers, weaker-than-envisaged commodity prices could put further pressure on already fragile public finances (e.g., South Africa, Zambia). Among commodity importers, for the first time since the oil price collapse that began in 2014, fiscal deficits are projected to be larger as a share of GDP than those in commodity exporters, as waning revenue...
growth continues to be accompanied by strong expenditure growth (Figure 1.23).

Across EMDEs, rising global interest rates will make financing fiscal deficits through sovereign debt issuance more costly, underscoring the need to realign government spending with revenue and to manage the composition of debt, particularly in countries with elevated foreign-denominated debt or persistent current account deficits (Du and Schreger 2016). In a rising global interest-rate environment, employing expansionary fiscal policy with narrow fiscal space can amplify vulnerabilities by increasing market perceptions of sovereign credit risk, which may lead to higher sovereign bond yields and borrowing costs (Corsetti et al. 2013; Bi, Shen, and Yang 2014). LICs are more vulnerable to rising global financial costs than in the past, as LIC debt has increasingly shifted from concessional to market financing (Chapter 4; World Bank 2018i). More generally, EMDE governments with high private-sector debt are exposed to contingent liabilities if banking sector stress materializes in a rising interest rate environment (World Bank 2018g).

Regaining policy buffers should be a key priority to be able to use countercyclical fiscal policy to stabilize growth (World Bank 2015). Efforts to build fiscal space could include implementing credible medium-term expenditure or deficit targets, better managing contingent liabilities to contain fiscal risks, stabilizing debt, and reforming the tax system to improve domestic resource mobilization and the investment climate—e.g., adjusting statutory rates, broadening bases, eliminating loopholes and exemptions, and improving tax administration and compliance. Managing the composition of debt can also help address public-sector balance sheet vulnerabilities—for EMDEs with elevated foreign-currency debt, bolstering domestic-currency bond markets, if feasible, could help stem rollover and currency risks.

To complement these efforts, improving government effectiveness and strengthening institutions would support tax revenue collection (Ajaz and Ahmad 2010; Prichard 2010). If fiscal adjustment remains necessary to ensure long-term fiscal sustainability, policymakers need to evaluate the efficacy of public expenditures, prioritizing spending on quality investment and safeguarding poverty-reducing social transfers, while reining in programs that are unproductive or inefficient (World Bank 2018g; World Bank 2018m). EMDE fiscal policymakers also need to confront the longer-term challenges posed by high informality, as its prevalence in some regions reduces government revenues through tax base erosion (Chapter 3).

FIGURE 1.23 EMDE fiscal policy

For the first time in several years, fiscal deficits are projected to be wider in commodity importers than in commodity exporters. Government debt is rising among EMDEs with high foreign-currency-denominated debt or persistent current account deficits. In low-income countries, the cost of servicing debt has risen as the composition has moved from concessional to market financing. Greater government effectiveness is associated with stronger tax revenue collection.

A. Fiscal deficits

B. Fiscal sustainability gaps, by extent of reliance on foreign-currency-denominated debt

C. Interest rate payments on debt in LICs

D. Tax revenues, by extent of government effectiveness

Sources: Haver Analytics, International Monetary Fund, Kose et al. (2017), World Bank.

A.C.D. Figures show medians across groups.

A. Shaded area indicates forecasts. Sample includes 155 EMDEs.

B. FC debt = foreign-currency-denominated debt. The sustainability gap is measured as the difference between the primary balance and the debt-stabilizing primary balance, assuming historical median (1990-2016) interest rates and growth rates. A negative gap indicates government debt is rising along an accelerated trajectory. The aggregates are calculated using constant 2010 U.S. dollar GDP weights. The sample includes 27 EMDEs. The above average and below average foreign-currency denominated debt groups are defined by countries above or below the sample average of average external debt in foreign currency as a share of total external debt in 2017. The sample average is 86.9 percent of GDP.

C. Interest rate payments include those made on government debt to domestic and foreign residents. Solid line represents median and area between the dashed lines represents the interquartile range. The sample includes 30 low-income countries and excludes Somalia, South Sudan, and Syria due to data restrictions.

D. Government effectiveness measured by the Worldwide Governance Indicators. Higher government effectiveness are EMDEs with 2000-17 averages above 0 (stronger governance); lower are EMDEs with 2000-17 average government effectiveness below 0 (weaker governance). Unbalanced sample includes 150 EMDEs.
EMDE structural policies

EMDEs also face substantial longer-term challenges to ensure sustained improvements in incomes and living standards amid rapid technological and demographic changes. Meeting these challenges will require, among other actions, effective investments in human capital, efforts to accelerate regional and global integration, and measures to free up a large untapped potential for growth and productivity gains among small- and medium-sized enterprises. Progress in these areas would also help bring people and companies out of informality.

Improving human capital

Under-investment in human capital has left large parts of the workforce in EMDEs unprepared for rapid technological changes and future skill requirements (Flabbi and Gatti 2018). This represents a significant bottleneck to growth in many countries. Moreover, continued divergences in the demand for high- and low-skilled labor could exacerbate income inequality over time. How education systems adapt to skills needs will be a key determinant of the productivity and distributional effects of technological change (Barro and Lee 2015).

Improving student learning is particularly important, starting with an effective measurement of the performance of education systems. Measures that capture both the quantity and quality of learning, such as learning-adjusted years of schooling, are better predictors of subsequent growth across EMDEs (Figure 1.24; Filmer et al. 2018). A focus on both schooling participation and learning results can more properly inform policy actions and support effective investments in human capital (World Bank forthcoming).

Beyond a heightened focus on learning outcomes, a comprehensive approach to human capital improvements in EMDEs should also address other dimensions, including malnutrition and health throughout the life cycle. In this context, a human capital index has recently been developed to assess productivity gains that could be achieved by matching education and health outcomes to best practices (Kraay 2018). This benchmarking
exercise helps to identify areas of intervention to improve public spending and governance in education and health systems—and to raise awareness of the costs of inaction (World Bank 2018n).

The urgency to bolster human capital comes in a period of constrained public-sector resources and elevated debt levels, creating a notable policy challenge. Accordingly, more effective spending in education and health will need to be accompanied by renewed efforts to prioritize government spending, improve efficiency of public administrations and revenue mobilization, and encourage private sector participation.

**Boosting regional and international integration**

If faced with growing protectionist measures, policymakers in EMDEs may be tempted to resort to retaliatory action or unilateral increases in barriers to trade. While such measures could help recapture some of their terms-of-trade losses, an increase in trade barriers would likely lead to significant distortionary effects and efficiency losses for EMDEs (Devarajan et al. 2018). Instead, continued commitment to regional and international integration through trade liberalization, properly designed free trade agreements, and participation in global value chains (GVCs) within an open and rules-based multilateral trading system could yield significant, previously untapped benefits for EMDEs. The call of G20 members to consider additional reform of the World Trade Organization could be a chance to maximize development opportunities for EMDEs.

Increased international integration and participation in GVCs does not guarantee positive and sustainable development outcomes for EMDEs. Targeted policies that encourage the upgrading of domestic production are crucial in ensuring that the social and development impacts of GVC activities are optimized (Taglioni and Winkler 2016; Fessehaie and Morris 2018).

**Untapping SMEs growth potential**

Supported with appropriate frameworks, small- and medium-sized enterprises (SMEs) can be key drivers of growth and job creation in EMDEs (Ayyagari, Demirgüç-Kunt, and Maksimovic 2017). They can play a central role in industrial development and restructuring, support larger firms with inputs and services, and allow increased sectoral specialization. However, their growth potential continues to be hindered by many factors, including insufficient access to finance; tax and regulatory burdens; skills mismatch; limited access to infrastructure, particularly electricity; and corruption (Wang 2016). Alleviating those obstacles could lead to significant growth windfalls for EMDEs, given that SMEs have the largest untapped potential for productivity catch-up with advanced economies (Cusolito, Safadi, and Taglioni 2017). Supporting SMEs development could also help reduce high informality in some regions, which is most prevalent among micro-enterprises.
Limited access to finance is most often cited as a key obstacle to SMEs’ growth in EMDEs, forcing these companies to rely on retained earnings to fund investment. This leads to sub-optimal capital spending and an unrealized potential for expansion and job creation. Key obstacles include the lack of reliable credit information, the absence of suitable collateral, or weak legal institutions. Increasing SMEs’ access to finance could help boost their average size and support innovation and job creation (Ayyagari, Demirgüç-Kunt, and Maksimovic 2017; Ayyagari et al. 2016). Improved access to finance for women entrepreneurs could also lead to more investment, while access to savings account for female-headed households could result in additional spending on education (Sahay and Cihak 2018; Demirgüç-Kunt et al. 2018). Bankruptcy protection laws also lag international best practices in many EMDEs. Historical experience suggests that strengthening bankruptcy protection can boost investment activity and facilitate responsible corporate risk-taking, helping to relieve the costs of debt overhang (Gopalan, Mukherjee, and Singh 2016; World Bank 2014).

Beyond basic education, technological know-how, managerial capabilities, and tolerance for risk are also key factors underlying successful entrepreneurship and vibrant firm dynamics (Cusolito and Maloney 2018). Framework conditions that encourage experimentation and do not penalize failure are crucial to support the upgrading firm capabilities and diffusion of technological progress. Tax, registration, and other administrative simplifications can also be successful tools to facilitate SME’s creation and expansion (Bruhn 2011). Finally, restrained access to infrastructure, particularly electricity, is often mentioned as a major barrier to the development of SMEs and start-up companies in many EMDEs, especially in Sub-Saharan Africa. Improvements in both traditional power line supplies and off-grid solutions such as solar energy and micro grids need to be achieved in tandem, supported by proper policy incentives and effective regulations (World Bank 2017).

Growing out of informality

Informality remains widespread in many EMDEs (Chapter 3). It is particularly prevalent in less developed regions, with South Asia and Sub-Saharan Africa accounting for nearly 60 percent of all informal workers in EMDEs. It is also elevated in regions with weak institutions and high levels of taxation and regulation, such as Latin America and the Caribbean and Europe and Central Asia.

While the informal economy provides an important safety net to workers, particularly during downturns, it can dampen growth by weighing on physical and human capital formation (Oviedo et al. 2009; 2011; Docquier et al. 2017). In particular, firms operating in the informal economy tend to limit their size to avoid detection and use less advanced production technologies (Dabla-Norris et al. 2018). Their lack of compliance with regulations and taxes may help them stay in business despite low productivity (Schneider and Enste 2000; La Porta and Shleifer 2014; Box 3.4).

High informality can also limit fiscal revenues and thus can constrain the government’s ability to provide public services, conduct countercyclical policies, and implement effective redistributive measures (Box 3.5; Ordóñez 2014; Besley and Persson 2014). Both government revenues and expenditures are lower in EMDEs where informality is widespread. High informality is often associated with lack of development, limited access to finance, low human capital, poor governance, and heavy regulatory burdens. If properly designed, policies that help improve outcomes in those areas would contribute to bolster growth prospects and encourage workers to participate in the formal economy, thus helping reduce informality and its associated challenges.

Policies that are implemented with other purposes in mind also need to take into consideration the unintended consequences on informality. For example, changes in labor market regulation accompanying the decentralization of minimum wages or the liberalization of trade have resulted in higher informality in some countries (Goldberg and Pavcnik 2003; Attanasio, Goldberg and Pavcnik 2004, Chapter 3, Box 3.4). These experiences are a reminder of the need to design comprehensive reform packages that are calibrated to country circumstances.
## Table 1.2 List of emerging market and developing economies

<table>
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<tr>
<th>Commodity exporters</th>
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<td>Albania*</td>
<td>Afghanistan</td>
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<td>Algeria*</td>
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<tr>
<td>Iran*</td>
<td>Marshall Islands</td>
</tr>
<tr>
<td>Iraq*</td>
<td>Mauritius</td>
</tr>
<tr>
<td>Kazakhstan*</td>
<td>Mexico</td>
</tr>
<tr>
<td>Kosovo</td>
<td>Moldova, Rep.</td>
</tr>
<tr>
<td>Kuwait*</td>
<td>Montenegro</td>
</tr>
<tr>
<td>Kyrgyz Republic</td>
<td>Nepal</td>
</tr>
<tr>
<td>Lao PDR</td>
<td>Pakistan</td>
</tr>
<tr>
<td>Liberia</td>
<td>Palau</td>
</tr>
</tbody>
</table>

* Energy exporters.

1. Emerging market and developing economies (EMDEs) include all those that are not classified as advanced economies. Dependent territories are excluded. Advanced economies include Australia; Austria; Belgium; Canada; Cyprus; the Czech Republic; Denmark; Estonia; Finland; France; Germany; Greece; Hong Kong SAR, China; Iceland; Ireland; Israel; Italy; Japan; the Republic of Korea; Latvia; Lithuania; Luxembourg; Malta; Netherlands; New Zealand; Norway; Portugal; Singapore; the Slovak Republic; Slovenia; Spain; Sweden; Switzerland; the United Kingdom; and the United States.

2. An economy is defined as commodity exporter when, on average in 2012-14, either (i) total commodities exports accounted for 30 percent or more of total goods exports or (ii) exports of any single commodity accounted for 20 percent or more of total goods exports. Economies for which these thresholds were met as a result of re-exports were excluded. When data were not available, judgment was used. This taxonomy results in the classification of some well-diversified economies as importers, even if they are exporters of certain commodities (e.g., Mexico).

3. Commodity importers are all EMDEs that are not classified as commodity exporters.
References

Chapter references


Box 1.1 references


**Box 1.2 references**


Growth in the East Asia and Pacific (EAP) region is estimated to have slowed to 6.3 percent and momentum has weakened in 2018, reflecting diminishing support from exports partly offset by robust domestic demand (Figure 2.1.1; Table 2.1.1). External conditions have deteriorated, reflecting moderating global demand, escalating trade tensions, and a substantial tightening of financing conditions. This less favorable international environment has been accompanied by financial stress in some large emerging market and developing economies (EMDEs).

Several large economies in the region have faced some combination of capital outflows, currency depreciations, equity market corrections, and foreign reserve losses (e.g., China, Indonesia, Malaysia, the Philippines, Thailand). In addition to country specific factors, the countries most affected are those with sizable or widening current account deficits and dependence on volatile portfolio flows, those with relatively high asset valuations, or those with exposure to trade disputes involving major economies (e.g., China, Indonesia, Myanmar, the Philippines). Bond spreads in these countries have generally widened but less than during the last two financial stress episodes and less than the EMDE average, reflecting continued strong investor confidence toward these economies.

China has been implementing measured monetary and fiscal easing policies in anticipation of slowing export growth amid trade tensions, while at the same time making progress at reducing growth in non-bank financing. In contrast, several countries, such as Indonesia and the Philippines, have stemmed capital outflows by tightening monetary policy. Most EAP countries have taken advantage of flexible exchange rates, which has allowed their currencies to act as shock absorbers during times of stress. Indonesia has also implemented measures to curb imports while taking steps to increase coal exports, in an effort to reduce the current account deficit and relieve pressure on the rupiah (World Bank 2018a).

Growth in China is estimated to have slowed to a still robust 6.5 percent in 2018, with resilient domestic demand helping to offset a deceleration of exports (Figure 2.1.2). Consumption has remained strong and private investment is recovering, partly reflecting the simplification of the approval process for investment projects. In general, policies in China have become more supportive of growth, as authorities attempt to offset the effects of new trade restrictions with the United States. Price growth of newly constructed

Note: The author of this section is Ekaterine Vashakmadze. Research assistance was provided by Liu Cui.
FIGURE 2.1.1 Recent developments

Growth in EAP slowed to 6.3 percent in 2018, with robust domestic demand but softening export growth. Inflation has been trending up but is generally below targets. EAP economies have faced some combination of capital outflows, currency depreciations, equity market corrections, and foreign reserve losses during the 2018 financial market stress episode. Regional bond spreads have generally widened but less than during the last two financial stress episodes and less than the EMDE average.

A. Growth

B. Export growth

C. Inflation

D. Balance of payments EAP ex. China

E. Exchange rate and equity prices

F. Emerging Market Bond spreads

Sources: Bloomberg, Haver Analytics, World Bank.


A. Aggregate growth rates are based on constant 2010 U.S. dollar GDP-weights and include Indonesia, Malaysia, Philippines, Thailand, and Vietnam.

B. Data include only goods. 12-month moving average. Aggregate growth rate excludes Cambodia, Fiji, Lao PDR, Mongolia, Myanmar, Solomon Islands, Papua New Guinea, Timor-Leste, Vanuatu, and Vietnam due to data limitations. Last observation is September 2018.

C. Average year-on-year growth. The mid-points of targeted ranges in 2018 in Indonesia (2.5-4.5 percent), Philippines (2-4), Vietnam (4), China (3), and Thailand (1-4). For Malaysia, the mid-point of public investment dampening demand for capital outflows.

D. Current account balance is based on seasonally adjusted data. Net capital flows and change in reserves are estimates. Last observation is Q2 2018.

E. Percent change of exchange rates (US dollar vs. local currency) and equity prices in local currency over 226 days since the start dates of respective stress episodes. EAP aggregate exchange rate includes China, Indonesia, Malaysia, Mongolia, Philippines, Thailand and Vietnam. EAP aggregate equity price includes China, Indonesia, Malaysia, Philippines, Thailand and Vietnam. Orange lines denote minimum-maximum ranges.

F. Emerging market bond spreads as of May 2018. EAP aggregate bond spread includes China, Indonesia, Malaysia, Philippines and Vietnam. Orange lines denote minimum-maximum ranges. Red diamonds denote emerging market and developing economy (EMDE) averages.

Growth in commodity-importing economies excluding China is moderating. In the Philippines, activity has slowed as surging inflation, capacity constraints, and currency pressures have prompted authorities to hike policy rates. Growth in Vietnam remains robust helped by booming exports, but authorities have tightened fiscal policy as part of their commitment to reduce the economic role of the state. In Thailand, a cyclical recovery continues, but its pace is moderating in response to tighter fiscal policies and the effects of softening global demand on export growth.

In commodity-exporting EAP economies, the investment-led cyclical recovery is maturing, and the pace and composition of growth continues to reflect country-specific factors. In Indonesia, growth last year was led by rising investment on the back of accelerated infrastructure spending. In Malaysia, lower public investment is weighing on growth, reflecting the completion of several infrastructure projects and a more prudent economic role of the state. In Thailand, a cyclical recovery continues, but its pace is moderating in response to tighter fiscal policies and the effects of softening global demand on export growth.
Despite the slowdown, EAP remains one of the world’s fastest-growing regions and has been relatively resilient to recent bouts of financial market volatility (Figure 2.1.3). This is the case for several reasons. Most of the EAP countries (with the exception of the Pacific Islands) continue to experience above the EMDE average growth and maintain positive current account balances net of foreign direct investment (e.g., China, Malaysia, Thailand, the Philippines, and Vietnam). Policy frameworks across EAP region have improved over time with the shift to floating exchange rates, economic diversification, and solid buffers.

That said, many countries have pockets of vulnerabilities, including as a result of elevated levels of public and private debt (e.g., China, Lao PDR, Malaysia, Mongolia, Vietnam), external debt (e.g., Malaysia, Mongolia, Lao PDR, Papua New Guinea), foreign participation in local-currency sovereign bond markets (e.g., Indonesia, Malaysia), fiscal deficits (e.g., Cambodia, Indonesia, Lao PDR, Mongolia, Vietnam), and current account deficits and high reliance on volatile capital flows (e.g., Cambodia, Indonesia, Mongolia). In addition, deep regional and global integration makes the region vulnerable to trade shocks (see more detailed discussion on the risk section below).

**Outlook**

Regional growth is expected to moderate from 6.3 percent in 2018 to 6 percent in 2019 and stay at that pace in 2020—broadly unchanged from June forecasts (Tables 2.1.1 and 2.1.2; Figure 2.1.3). The outlook is predicated on stable energy prices in the next two years, a moderation in global demand and trade, and a gradual tightening of global financing conditions.

The structural slowdown in China is expected to continue. Growth is projected to slow from 6.5 percent in 2018 to 6.2 percent on average in 2019-20, and domestic and external rebalancing are expected to continue. Authorities in China have shifted to looser monetary and fiscal policies in response to a more challenging external environment, including escalating trade tensions.

**FIGURE 2.1.2 China**

In China, growth is slowing but remains robust amid resilient consumption. China’s current account surplus has dissipated as import growth outpaced export growth. Equities and the renminbi have been under pressure throughout 2018. Bond spreads, which widened in late-2017-early-2018 on trade concerns, have been stable since mid-2018, reflecting continued strong investor confidence. The authorities have been easing monetary policy, but keeping credit growth in check, by reducing shadow financing. Prices of newly constructed residential buildings, most notably in Tier 1 cities, have rebounded following several years of correction.

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Sources: Bloomberg, Haver Analytics, World Bank.


A. Investment refers to gross capital formation, which includes change in inventories. Data for 2018 are estimates. Last observation is 2018Q3.

B. Current account balance is based on seasonally adjusted data. Net capital flows and change in reserves are estimates. Data for 2018 are estimates. Last observation is 2018Q3.

C. Figure shows the percent changes of exchange rates (US dollar vs. Chinese yuan) and equity prices in Chinese yuan over 226 days since the start dates of respective events. Orange lines denote EAP minimum-maximum ranges. Green diamonds denote the emerging market and developing economy (EMDE) averages.

D. Figure shows the change of bond spread over 226 days since the start dates of respective events. Bond spread measures the average spread of a country’s sovereign debt (as measured by J.P. Morgan’s Emerging Markets Bond Index) over their equivalent maturity U.S. Treasury bond. Orange lines denote the EAP minimum-maximum ranges. Red diamonds denote the emerging market and developing economy (EMDE) averages.

E. Domestic and overseas loans. Last observation is 2018 Q3 for nominal GDP.

F. The National Bureau of Statistics of China surveys house prices in 70 cities and divides them into three tiers. The first tier includes Shanghai, Beijing, Guangzhou, and Shenzhen. The second tier includes 31 provincial capital and sub-provincial capital cities. The third tier includes 35 other cities. Dotted lines indicate February 2011-September 2018 averages. Last observation is October 2018.
EAP growth is projected to gradually decelerate reflecting a structural slowdown in China. Growth in the rest of the region is expected to remain stable in 2019-20. The region is characterized by deep regional and global integration, which makes it vulnerable to external shocks. Domestic and external vulnerabilities would amplify the impact of external shocks, especially where policy buffers are limited.

A. Growth

B. Global exposure by type of foreign inflows, 2013-17

C. Impact of 1 percentage point decline in China’s growth on EAP

D. Change in growth and current account balance net of FDI, 2010-18

E. External debt

F. Fiscal balance and public debt

Sources: Haver Analytics, International Monetary Fund, World Bank.


B. The linkages presented in this chart only present direct channels. Spillovers may propagate via indirect channels such as global and regional value chains. Diamond denotes direct exposure to China. Hyphen denotes share of commodity exports as share of GDP. EA stands for East Asia. PI stands for Pacific Islands. EA1 includes Brunei Darussalam, Cambodia, Malaysia, Thailand and Vietnam; EA2 includes Indonesia, Lao PDR, Malaysia and Philippines. PI1 includes Kiribati, Marshall Islands, Micronesia, Timor-Leste, Tonga and Tuvalu; PI2 includes Palau and Vanuatu; PI3 includes Fiji, Papua New Guinea, Samoa and Solomon Islands.

C. Median of posterior distribution. Estimates based on a Bayesian SVAR, using quarterly data for 1998Q1-2018Q1. The spillovers include the effects through indirect channels, including confidence and global and regional value chains. Cumulative impact on growth after two years. GDP weighted.


E. External debt stock is defined as debt owed to nonresidents repayable in foreign currency, goods or services. It is the sum of public, publicly guaranteed and private nonguaranteed debt. Data are in current U.S. dollars. Short-term debt includes all debt having an original maturity of one year or less and interest in arrears on long-term debt. Interest Diamond denotes short-term external debt as share of GDP in 2018; hyphen—total external debt as share of GDP in 2010.

F. Diamond denotes estimated fiscal balance as share of GDP in 2018; hyphen denotes public debt as share of GDP in 2010. The general government debt data for Mongolia is based on the World Bank staff estimates.

They have cut reserve requirements, reduced taxes and fees, increased export tax rebates, and accelerated issuance of special purpose local government bonds to bolster infrastructure spending. In addition, the authorities have stepped up their structural reform efforts to improve the business environment, including for foreign firms, and have lowered tariffs on imports—with the critical exception of tariffs on U.S. imports in retaliation to U.S. tariffs on Chinese goods. These policy steps are expected to largely offset the direct negative impact of higher tariffs on China’s exports, which would otherwise lower growth by about 0.1-0.3 percentage point in 2019. However, the measures may also run counter to the needed deleveraging and de-risking process if the authorities were to pursue a stronger fiscal and monetary stimulus effort in the future (Chapter 1; World Bank 2018a).

Growth in the rest of the region is projected to remain broadly unchanged at around 5.2 percent on average in 2019-20. Resilient domestic demand is expected to offset the negative impact of slowing exports. Growth among commodity importers is projected to moderate in 2019 as it converges with its potential rate. Among commodity importers excluding China, a slight downgrade to growth projections in 2018 reflects a downward revision to the Philippines due to a moderation in private consumption amid rising inflation.

Growth in commodity exporters is expected to remain broadly unchanged at about 5.1 percent in 2019, in line with potential, with significant cross-country differences. This forecast is slightly below that of June, reflecting a number of downward revisions (e.g., Malaysia, Myanmar). Output gaps in most commodity exporting economies are expected to close over the forecast horizon, as countries complete their adjustment to earlier commodity price declines, investment growth stabilizes, and trade flows decelerate. For both commodity exporters and importers, inflation pressures are expected to intensify over the forecast horizon, in part reflecting exchange rate pass through as well as domestic demand pressures.

Despite the projected robust activity in the region in the near term, underlying potential growth—which has fallen considerably over the past
decade—is likely to decline further over the long term. This reflects increasingly adverse demographic patterns and a projected slowdown in capital accumulation as credit growth is reined in.

**Risks**

Risks to the outlook remain tilted to the downside and have intensified. Growing trade tensions involving large economies continue to create uncertainty about the future of established trading relationships. A potential disruption of trade would disproportionately affect the more open economies in the region. The region is characterized by deep regional and global integration, which makes it vulnerable to external shocks. The region relies significantly on foreign income, mostly from exports but also from returns on foreign assets and direct investment. Total exports and gross capital inflows exceed 50 percent of GDP in more than two-thirds of the regional economies, and 100 percent in about one-third of countries (Figure 2.1.3). In many regional economies, the cost of rising import tariffs may be magnified by participation in complex global value chains (e.g., Indonesia, Malaysia, Thailand, the Philippines; Chapter 1, World Bank 2018a). Furthermore, the impact of trade measures could be amplified regionally if it also weighs on investor confidence and reduces foreign direct investment (World Bank 2018a, IMF 2018a).

China’s baseline projections assume that the measured fiscal and monetary policy stimulus that is being introduced in response to rising U.S. tariffs is successful in offsetting the immediate economic impact of trade-related headwinds. However, if authorities opt for additional and stronger fiscal and monetary stimulus initiatives—particularly in the form of unfunded mandates for local governments to increase public investment—efforts to contain credit growth and limit risks to corporate and bank balance sheets could be undermined. A continued intensification of trade tensions, along with previous measures, would affect close to all goods trade between China and the United States. In the extreme case scenario, further escalation of trade tensions, coupled with possible negative effects on confidence and investment, have been estimated to reduce global exports by up to 3 percent and global income by 1.7 percent over the medium term with the biggest, up to 3.5 percent decline in income recorded by China (Freund et al. 2018).¹

A significant disruption to activity in China would have large regional effects, propagating through bilateral trade, regional supply chains, and financial linkages (Figure 2.1.3). A one-off, unexpected 1 percentage-point drop in China’s GDP growth would lower growth in the rest of the region by 0.5 percentage points after two years (World Bank 2016a, World Bank 2018a). Growth spillovers from China would be particularly large for Mongolia, due to its reliance on commodity exports to China, and for Cambodia and the Pacific Islands which depend on China for tourism and FDI.

Risks of disorderly financial market developments have also intensified (Chapter 1). A further tightening of global financial conditions could be triggered by rising inflation, swelling fiscal deficits, or contagion from financial stress in other EMDEs, and could place further pressure on regional exchange rates and asset prices. High debt levels and external vulnerabilities among some EAP countries could amplify the impact of external shocks such as a sudden stop in capital flows or a rise in borrowing costs. If a combination of downside risks were to materialize, it could trigger an even sharper-than-expected slowdown in regional growth.

¹This scenario assumes a 25 percent tariff surcharge on all products traded between China and the United States, combined with a decline in investor confidence, resulting in a 0.5 percentage point drop in global investment to GDP (Freund et al. 2018).
### TABLE 2.1.1 East Asia and Pacific forecast summary

(Real GDP growth at market prices in percent, unless indicated otherwise)

<table>
<thead>
<tr>
<th>Region</th>
<th>2016</th>
<th>2017</th>
<th>2018e</th>
<th>2019f</th>
<th>2020f</th>
<th>2021f</th>
<th>Percentage point differences from June 2018 projections</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMDE EAP, GDP(^1)</td>
<td>6.3</td>
<td>6.6</td>
<td>6.3</td>
<td>6.0</td>
<td>6.0</td>
<td>5.8</td>
<td>0.0 -0.1 -0.0</td>
</tr>
<tr>
<td>EMDE EAP, GDP(^2)</td>
<td>6.3</td>
<td>6.6</td>
<td>6.3</td>
<td>6.0</td>
<td>6.0</td>
<td>5.8</td>
<td>0.0 -0.1 -0.0</td>
</tr>
<tr>
<td>GDP per capita (U.S. dollars)</td>
<td>5.6</td>
<td>5.9</td>
<td>5.7</td>
<td>5.4</td>
<td>5.4</td>
<td>5.3</td>
<td>0.0 -0.1 -0.1</td>
</tr>
<tr>
<td>PPP GDP</td>
<td>6.3</td>
<td>6.5</td>
<td>6.3</td>
<td>5.9</td>
<td>5.9</td>
<td>5.8</td>
<td>0.1 -0.2 -0.1</td>
</tr>
<tr>
<td>Private consumption</td>
<td>6.8</td>
<td>6.5</td>
<td>7.7</td>
<td>7.4</td>
<td>7.1</td>
<td>7.2</td>
<td>0.7 0.6 0.1</td>
</tr>
<tr>
<td>Public consumption</td>
<td>9.3</td>
<td>8.5</td>
<td>7.6</td>
<td>7.3</td>
<td>7.1</td>
<td>7.1</td>
<td>0.0 0.2 -0.3</td>
</tr>
<tr>
<td>Fixed investment</td>
<td>6.6</td>
<td>4.5</td>
<td>5.6</td>
<td>5.3</td>
<td>5.2</td>
<td>5.2</td>
<td>0.1 0.0 -0.3</td>
</tr>
<tr>
<td>Exports, GNFS(^3)</td>
<td>3.3</td>
<td>9.4</td>
<td>4.8</td>
<td>4.7</td>
<td>4.4</td>
<td>4.3</td>
<td>-0.9 -1.3 -1.4</td>
</tr>
<tr>
<td>Imports, GNFS(^3)</td>
<td>5.4</td>
<td>8.1</td>
<td>6.8</td>
<td>6.5</td>
<td>5.9</td>
<td>5.8</td>
<td>1.0 0.4 -0.5</td>
</tr>
<tr>
<td>Net exports, contribution to growth</td>
<td>-0.6</td>
<td>0.4</td>
<td>-0.6</td>
<td>-0.5</td>
<td>-0.5</td>
<td>-0.5</td>
<td>-0.6 -0.5 -0.3</td>
</tr>
<tr>
<td>Memo items: GDP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>East Asia excluding China</td>
<td>4.9</td>
<td>5.4</td>
<td>5.2</td>
<td>5.2</td>
<td>5.2</td>
<td>5.2</td>
<td>-0.2 -0.1 -0.1</td>
</tr>
<tr>
<td>China</td>
<td>6.7</td>
<td>6.9</td>
<td>6.5</td>
<td>6.2</td>
<td>6.2</td>
<td>6.0</td>
<td>0.0 0.1 0.0</td>
</tr>
<tr>
<td>Indonesia</td>
<td>5.0</td>
<td>5.1</td>
<td>5.2</td>
<td>5.2</td>
<td>5.3</td>
<td>5.3</td>
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</tr>
<tr>
<td>Thailand</td>
<td>3.3</td>
<td>3.9</td>
<td>4.1</td>
<td>3.8</td>
<td>3.9</td>
<td>3.9</td>
<td>0.0 0.0 0.1</td>
</tr>
</tbody>
</table>


Notes: e = estimate; f = forecast. EMDE = emerging market and developing economy. World Bank forecasts are frequently updated based on new information and changing (global) circumstances. Consequently, projections presented here may differ from those contained in other Bank documents, even if basic assessments of countries’ prospects do not significantly differ at any given moment in time.

1. GDP at market prices and expenditure components are measured in constant 2010 U.S. dollars. Excludes Democratic People’s Republic of Korea and dependent territories.

2. Sub-region aggregate excludes Democratic People’s Republic of Korea, dependent territories, Fiji, Kiribati, the Marshall Islands, the Federated States of Micronesia, Myanmar, Nauru, Palau, Papua New Guinea, Samoa, Timor-Leste, Tonga, and Tuvalu, for which data limitations prevent the forecasting of GDP components.

3. Exports and imports of goods and non-factor services (GNFS).

For additional information, please see www.worldbank.org/gep.

### TABLE 2.1.2 East Asia and Pacific country forecasts\(^1\)

(Real GDP growth at market prices in percent, unless indicated otherwise)

<table>
<thead>
<tr>
<th>Country</th>
<th>2016</th>
<th>2017</th>
<th>2018e</th>
<th>2019f</th>
<th>2020f</th>
<th>2021f</th>
<th>Percentage point differences from June 2018 projections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambodia</td>
<td>6.9</td>
<td>7.0</td>
<td>7.1</td>
<td>6.8</td>
<td>6.8</td>
<td>6.7</td>
<td>0.2 0.1 0.2</td>
</tr>
<tr>
<td>China</td>
<td>6.7</td>
<td>6.9</td>
<td>6.5</td>
<td>6.2</td>
<td>6.2</td>
<td>6.0</td>
<td>0.0 0.1 0.0</td>
</tr>
<tr>
<td>Fiji</td>
<td>0.4</td>
<td>3.8</td>
<td>3.5</td>
<td>3.4</td>
<td>3.3</td>
<td>3.3</td>
<td>0.0 0.0 0.0</td>
</tr>
<tr>
<td>Indonesia</td>
<td>5.0</td>
<td>5.1</td>
<td>5.2</td>
<td>5.2</td>
<td>5.3</td>
<td>5.3</td>
<td>0.0 0.1 0.0</td>
</tr>
<tr>
<td>Lao PDR</td>
<td>7.0</td>
<td>6.9</td>
<td>6.7</td>
<td>6.9</td>
<td>6.9</td>
<td>6.7</td>
<td>0.1 0.0 0.0</td>
</tr>
<tr>
<td>Malaysia</td>
<td>4.2</td>
<td>5.9</td>
<td>4.7</td>
<td>4.7</td>
<td>4.6</td>
<td>4.6</td>
<td>-0.7 -0.4 -0.2</td>
</tr>
<tr>
<td>Mongolia</td>
<td>1.4</td>
<td>5.4</td>
<td>5.9</td>
<td>6.6</td>
<td>6.3</td>
<td>6.2</td>
<td>0.6 0.2 -0.2</td>
</tr>
<tr>
<td>Myanmar</td>
<td>5.9</td>
<td>6.8</td>
<td>6.2</td>
<td>6.5</td>
<td>6.6</td>
<td>6.8</td>
<td>-0.5 -0.4 -0.5</td>
</tr>
<tr>
<td>Papua New Guinea</td>
<td>2.6</td>
<td>2.8</td>
<td>0.3</td>
<td>5.1</td>
<td>3.1</td>
<td>3.4</td>
<td>2.0 1.1 0.1</td>
</tr>
<tr>
<td>Philippines</td>
<td>6.9</td>
<td>6.7</td>
<td>6.5</td>
<td>6.7</td>
<td>6.6</td>
<td>6.6</td>
<td>-0.2 0.0 0.0</td>
</tr>
<tr>
<td>Solomon Islands</td>
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<td>3.5</td>
<td>3.4</td>
<td>2.9</td>
<td>2.8</td>
<td>2.7</td>
<td>0.4 0.0 0.0</td>
</tr>
<tr>
<td>Thailand</td>
<td>3.3</td>
<td>3.9</td>
<td>4.1</td>
<td>3.8</td>
<td>3.9</td>
<td>3.9</td>
<td>0.0 0.0 0.1</td>
</tr>
<tr>
<td>Timor-Leste(^2)</td>
<td>5.3</td>
<td>-4.7</td>
<td>0.8</td>
<td>3.3</td>
<td>4.9</td>
<td>5.0</td>
<td>-1.4 -0.9 0.9</td>
</tr>
<tr>
<td>Vietnam</td>
<td>6.2</td>
<td>6.8</td>
<td>6.8</td>
<td>6.6</td>
<td>6.5</td>
<td>6.3</td>
<td>0.0 0.0 0.0</td>
</tr>
</tbody>
</table>


Notes: e = estimate; f = forecast. World Bank forecasts are frequently updated based on new information and changing (global) circumstances. Consequently, projections presented here may differ from those contained in other Bank documents, even if basic assessments of countries’ prospects do not significantly differ at any given moment in time.

1. GDP at market prices and expenditure components are measured in constant 2010 U.S. dollars.

2. Non-oil GDP. Timor-Leste’s total GDP, including the oil economy, is roughly four times its non-oil economy and is highly volatile as a result of sensitivity to changes in global oil prices and local production levels.

For additional information, please see www.worldbank.org/gep.
Informality in East Asia and Pacific

The share of informal output in East Asia and the Pacific (EAP) region is somewhat below the EMDE average while the share of informal employment is somewhat above-average. Within the region, informality is particularly high in lower-income countries, which are also characterized by a lack of diversification, large rural sectors, and weak institutions. Nonetheless, even higher-income economies within the region have urban informality. This diversity within the region argues for tailored policy approaches to address challenges associated with informality. Higher-income countries can prioritize urban planning and providing essential social protection to informal workers. Lower-income countries can focus on policies that increase productivity, lower costs and increase the potential benefits of regulatory compliance.

Introduction

The share of informal output in East Asia and the Pacific (EAP) is below the EMDE average. Nevertheless, despite a downward trend over the past 30 years, informality remains high in the lower-middle-income economies, including Lao PDR, Myanmar, Cambodia. Higher-income countries in the region have made considerable progress in integrating rural migrants into urban labor markets, but face challenges related to urban informality, in particular in providing access to public services and essential social protection.

Against this backdrop, this Box examines the following questions:

- How has informality evolved in East Asia and the Pacific?
- What have been the macroeconomic and social implications of informality?
- What policy options are available to address challenges associated with informality?

Evolution of informality

In the EAP region, informal output accounted for about 30 percent of GDP on average in 2010-2016, slightly below the EMDE median (Figure 2.1.1). However, at 48 percent of total employment, informal employment in EAP was above the EMDE average during the same period. About 75 percent of the labor force in EAP lacked basic pension coverage during 2000-10.

Informality in the EAP region has declined over the past two decades (Chapter 3, Schneider, Buehn, and Montenegro 2010). The share of informal output declined from 35 percent of official GDP to 27 percent between 1990-2000 and 2010-16—the fastest decline among EMDE regions. Survey-based measures of informality also suggest a moderate decline in acceptance and perception of informality.

The decline in informality has been accompanied by sustained growth, rapid industrialization, urbanization, and improvements in institutional quality (World Bank 2015). A large number of informal, mainly agricultural, workers in China have been successfully integrated into the formal labor force mainly by absorbing migrants into the urban labor market (World Bank 2014a). Total employment in China rose by about 250 million during 1990–2014, amid large-scale rural-to-urban migrant flows (Lam, Liu, and Schipke 2015). Between 1990-2000 and 2010-16, the share of informal output declined particularly rapidly in the fastest-growing countries, in part reflecting the effect of comprehensive reforms (Cambodia, Myanmar, and Lao PDR). For example, the informal share of output has fallen by 33 percentage points in Myanmar (to below 30 percent in 2010-16) following broad-based liberalization measures.

The region is characterized by significant cross-country heterogeneity in terms of institutional and socio-economic indicators (Figure 2.1.1). Per capita GDP levels vary widely across EAP, and those economies with higher per capita GDP generally have lower levels of informality (ILO 2018a; Loayza and Rigolini 2006). The share of informal output in higher income countries is about [30] percentage points less than in lower-middle income countries (e.g. Lao PDR and Myanmar). The share of informal employment is also about one-quarter of that in

Note: This Box was prepared by Ekaterine Vashakmadze and Jinxin Wu.

1 Informality is often defined as market-based legal production of goods and services that are hidden from public authorities for monetary, regulatory, and institutional reasons (Schneider, Buehn, and Montenegro 2010). Informal output is measured as a percent of informal output in official GDP. In this box, informality is estimated based on the Dynamic General Equilibrium (DGE) model used in Elgin and Oztrunalı (2012) (for more detailed discussion see Chapter 3 and Annex 3.1).

2 The most frequently used informal employment measure is the share of self-employment in total employment, which represents a lower bound of informal employment (e.g., La Porta and Shleifer 2014). Self-employed workers are those workers who, working on their own account, with one or a few partners, or in a cooperative, hold the type of jobs defined as “self-employment jobs” (for more detailed discussion see Chapter 3 and Annex 3.1).
**BOX 2.1.1 Informality in East Asia and Pacific (continued)**

**FIGURE 2.1.1 Informality in East Asia and the Pacific**

Compared with other EMDE regions, East Asia and the Pacific (EAP)’s share of informal output is moderate whereas its share of informal employment is above-average. Informality is particularly high in lower income countries, which are also characterized by stringent labor regulations and lack of enforcement.

A. DGE and MIMIC based informal activities

B. Labor force without pension and self-employment

C. Perceived informal activities and attitudes towards informality

D. Informality by different measures

E. Cross country difference in informality

F. Institutional Factors


Notes: Blue bars show simple averages of the informal economy of the region. Red makers show the median average of all EMDEs and the vertical lines denote interquartile range of all EMDEs.

A. The Dynamic General Equilibrium (DGE) model is a model to estimate the size of the informal sector, used in Elgin and Oztunali (2012). DGE estimates the informal output in percent of official GDP. The Multiple Indicators Multiple Causes model (MIMIC) is a structural equations model which considers multiple causes of informal activity and captures multiple outcome indicators of informal activity, used in Schneider et al (2010). MIMIC estimates the informal output in percent of official GDP.

B. Labor force without pension is the fraction of the labor force that doesn’t contribute to a retirement pension scheme. Self-employed is the share of self-employment in total employment.

C. WEF is a World Economic Forum survey which ask the question “In your country, how much economic activity do you estimate to be undeclared or unregistered? (1=Most economic activity is undeclared or unregistered; 7 = Most economic activity is declared or registered).” The average responses constitute a series of informality measures, named as WEF. The indices are flipped in the figure so that a higher average at the country level indicates a larger informal economy. The responses range from 1 (never justifiable) to 10 (always justifiable). WVS is World Value Survey which asks whether respondents can justify cheating on taxes. A higher average implies that people find cheating on taxes more justifiable, which is associated with a higher level of informality.

D. Diamonds represent the average level of EAP region; bars denote the range of EAP countries in each measure.

E. The upper bound of bar indicates the share of informal employment in total employment. The lower bound indicates the share of informal output in official GDP based on the Dynamic General Equilibrium (DGE) model. For Malaysia, the level of informal output is higher than the level of informal employment.

F. All measures are taken from the latest year available. The first three institutional measures are taken from World Bank’s World Governance Indicators (2017), with a higher value indicating better institutional quality in year 2016. The “Ease of doing business” (DB 2018) and “Ease of paying taxes” (DB 2017) are taken from World Bank’s Doing Business database and measured as “Distance to Frontier”, with a higher value indicating an easier environment for businesses. An economy’s distance to frontier is reflected on a scale from 0 to 100, where 0 represents the lowest performance and 100 represents the frontier.
lower-middle income economies. In EAP, informal employment is most pervasive in Lao PDR and Myanmar, at around 60-80 percent of total employment. Indonesia, Mongolia, and Vietnam have below average informal output shares, but their informal employment shares are above the EAP average (ADB 2010, Handavani 2016).

Drivers and implications of informality

Informality has been attributed to several drivers. These included large agricultural sectors, rapid urbanization, low human capital, and overly burdensome regulations.

Size of agricultural sectors. People living in rural areas are almost twice as likely to be in informal employment as those in urban areas, and agriculture is the sector with the highest share of informal employment (ILO 2018). The agricultural sector still accounts for about 30 percent of employment in EAP on average, and these shares are particularly high in Lao PDR, Myanmar, and Vietnam (ADB 2010; Figure 2.1.2). Informal workers constitute the vast majority of employment in the agriculture sector in Cambodia and Thailand, in part because high compliance costs discourage formal-sector activity of agricultural small enterprises (ILO 2018).

Urbanization. Rapid urbanization in EAP has supported large-scale rural-to-urban migration, stimulated growth, productivity, and formal and informal job creation (Ghani and Kanbur 2013). The urbanization process has coincided with the rapid structural transformation of China and other fast-growing East Asian economies and the shift of activity from agriculture to manufacturing and services (McMillan, Rodrik, and Sepulveda 2017, Rodrik 2015). In general, a larger non-agricultural sector is associated with a smaller informal sector size and informality in manufacturing is also significantly lower than in services (Aresagoolu, Bayram, and Elgin 2017). Although the growth of urban areas provides opportunities for many, urban expansion, if not well planned, can also contribute to rising urban informality and policy challenges. In China, for example, unequal access to public services between citizens with urban household registrations (hukou) and those without, although diminishing, has led to unregistered urban households that lack essential social protection (Park, Wu, and Du 2012, World Bank 2014a).

Underinvestment in human capital. In EAP, investment in human capital and higher levels of educational attainment have increased labor productivity and have been closely associated with a smaller share of the informal economy (Figure 2.1.2; ILO 2018, Moscoso-Boedo and D’Erasmo 2012). Workers with higher education levels are also more likely to be formally employed. This is also evident in cross-country comparisons. For example, in Indonesia, the results of the 2009 Informal Sector Survey (ISS) in Yogyakarta and Banten suggest that persons who are informally employed tended to have lower levels of education than those with formal jobs (ADB 2010, World Bank 2017). Malaysia is among the countries with the highest educational attainment and the lowest share of informal employment (25 percent). In contrast, Lao PDR, Myanmar and Cambodia are characterized by low educational outcomes and high informality.

Enterprise sector characteristics. In China and Vietnam, informal economies arose amidst economic reforms that began in the 1970s and allowed the emergence of a private economy in the form of unregulated micro-enterprises, family enterprises, and individual entrepreneurs (Park, Wu, and Du 2012). The informal economy comprises more than 90 percent of micro and small enterprises (MSEs) worldwide (ILO 2018). In EAP, informal workers tend to be employed in small, low-productivity firms. For example, in Indonesia, most informal firms are very small (micro) firms with less than five employees. These firms tend to be less productive than larger firms and pay lower wages. Their operations tend to be local, predominantly supplying local markets, with little desire for expansion (Rothenberg et al, 2015).

Taxes and labor regulations. Informality is also a consequence of higher tax burdens, stringent labor regulations, limited enforcement capacity, and poor governance (World Bank 2014b). In EAP, informality is higher in lower-income countries with markedly weaker institutional quality, cumbersome rules and procedures, and pervasive lack of awareness or adequate enforcement (Lao PDR, Myanmar; Figure 2.1.2). Within Malaysia, the Philippines, Thailand, and Vietnam, informality has been associated with more rigid business regulations and ineffective law enforcement (Loayza and Rigolini 2006).

Informality has been associated with a number of adverse economic outcomes. These include urban poverty, household vulnerability and lower productivity.

Urban poverty and income inequality. EAP is the world’s most rapidly urbanizing region, with an average annual urbanization rate of 3 percent (World Bank 2017). The
BOX 2.1.1 Informality in East Asia and Pacific (continued)

FIGURE 2.1.2 Drivers and implications of informality

Better institutions and business environments, industrialization, and rapid urbanization are associated with low informality in higher-income economies. Countries with a high share of informality have higher income inequality and lower levels of educational attainment.

A. Informality and institutions

B. Institutional factors in countries with high and low informality

C. Employment in agriculture

D. Urban population as percent of total population

E. Year of total schooling

F. Human capital index

Sources: World Development Indicators, Organization for Economic Co-operation and Development (OECD), World Bank Doing Business

A. Higher MICs include Malaysia, China and Thailand; Middle MICs includes Philippines, Indonesia and Mongolia; Lower MICs include Myanmar, Laos PDR, Cambodia and Vietnam. The grouping of countries is based on GDP per capita.

B. All measures are taken from the latest year available. The first three institutional measures are taken from World Bank’s World Governance Indicators (2017), with a higher value indicating better institutional quality in year 2016. Error bars reflect all EAP countries.

C. The vertical and horizontal lines denote EMDE averages.

D. Latest data available is 2014.

E. Data are from Barro-Lee. Average years of total schooling, 15+, total is the average years of education completed among people over age 15.

F. The HCI calculates the contributions of health and education to worker productivity. The final index score ranges from zero to one and measures the productivity as a future worker of child born today relative to the benchmark of full health and complete education. The vertical and horizontal lines denote EMDE averages.

rapid growth of cities has created challenges that include the lack of affordable housing, resulting in increasing slums, poor provision of basic services, and widening inequality for urban dwellers. EAP host the world’s largest slum population, many of them informally employed: around 35 percent of urban population (250 million people) live in slums. In Indonesia, 27 percent of the urban population do not have access to improved sanitation facilities (UNICEF-WHO 2015), followed by 21 percent in the Philippines (PSA and ICF 2018). The cities with the highest numbers of urban poor are in China, Indonesia, and the Philippines, while the highest urban poverty rates are in the Pacific Island countries of Papua New Guinea and Vanuatu, and in Indonesia and Lao PDR (World Bank 2017).4

In China, the exceptional scale of rural to urban migration amplifies the challenges from informality. Many of these workers—approximately 120-150 million— are migrant workers who are not registered to work in cities, and therefore lack a number of formal protections (Jutting and Xenogiani 2009, Huang 2009). These urban migrants gain a large wage premium by migrating; yet both rural and

4 Approximately 75 million people in EAP region live below the US$3.10/day poverty line.
urban migrants tend to work in informal jobs and lack adequate social protection (Gagnon, Xenogiani and Xing 2012). In Thailand, informally employed workers systematically present lower earnings at all earnings levels, and the difference increases with level of earnings (ILO 2015).

**Household vulnerability to shocks.** Informality may impose significant economic risk and result in underinvestment in human capital of current and future generations (Oviedo 2009). It is characterized by a lack of adequate social protection coverage, which increases household vulnerability to shocks. For middle and lower income countries in EAP region, pension coverage is extremely low (Figure 2.1.2). In China, compared with formal employees and business owners, casual workers report the lowest monetary and subjective well-being (Liang, Appleton, and Song 2016).

**Low productivity.** Countries characterized by larger informal sectors are associated with lower shares of skilled workers and weaker measured total factor productivity. At the firm level, entering and operating in the formal sector is costly, but provides firms with a better access to technologies, skilled and competitive workers, and access to capital (Figure 2.1.2; D’Erasmo et al. 2014). There exists a sharp productivity difference between firms of the same size in the formal and informal sector when measured in terms of value added per employee, with formal firms being, on average, 30 percent more productive (Monteiro and Assuncao, 2012; Fajnzylber et al., 2011; La Porta and Shleifer 2014). Despite a well-documented gap between the performance of formal and informal firms, less is known about how the allocation of low-productivity firms in the informal sector affects productivity over time. If by operating informally firms are able to cut costs and stay more productive, then a shift from the informal to the formal sector will not necessarily lead to an increase in productivity. Some recent studies indeed find some evidence that a shift into the formal sector does not necessarily lead to an increase in productivity for firms (Demenet et al. 2016; McKenzie and Sakho 2010; De Mel et al. 2013). Overall, while individual motivations to become or stay informal may differ, the aggregate outcome of prevalence of informal sector is low scale and low productivity.

**Policy challenges**

A tailored approach can help address the challenges associated with informality. Higher-income countries can prioritize providing essential social protection to informal workers; lower-income countries could focus on reforms to increase firm and worker productivity.

**Essential social protection.** In higher-income countries, essential social protection coverage can be expanded to shield informal workers from adverse shocks (Olivier, Masabo, and Kalula 2012). This would imply higher public expenditure on social protection to extend at least basic social protection coverage to all (ILO 2017).

**Reforms to improve urban planning.** Urban planning can increase efforts to match physical expansion with access to jobs, affordable housing, commercial services, public transportation, and health and education services to ensure equal opportunity for disadvantaged communities (World Bank 2015). Examples of effective metropolitan governance include Beijing, Jakarta, Kuala Lumpur, Metro Manila Developments Authority (MMDA) and Shanghai (World Bank and DRCSC 2014, World Bank 2015).

**Reforms to increase firm productivity.** Agglomeration benefits can lower the unit costs of public service provision, enabling governments to extend access to basic services to more people (World Bank 2014, World Development Indicators 2016, Ghani and Kanbur 2013). Policies to support small agricultural enterprises, which engage a large share of EAP’s workforce, and other micro, small- or medium-sized enterprises include improving access to services, decreasing red tape and corruption, facilitating access to financial services, and offering better education and training (OECD 2009, World Bank 2018b).

**Remove disincentives to formal employment.** Removing disincentives to formal employment could encourage a shift of informal workers into formal employment. Reform options include lower registration costs; shorter registration procedures; streamlined registration services, for example, through information and communication technologies; lower compliance costs by introducing simplified tax assessment and payment regimes; improved access to financial services; and improved access to training, skills development and business development services (ILO 2016). As small firms have different motivations to stay small and informal, measures to lower cost and increase the potential benefits of regulatory compliance (such as reducing barriers) can be combined with a more effective enforcement regime.
Growth in the region is estimated to have decelerated to 3.1 percent in 2018 and is projected to further slow to 2.3 percent this year, mainly because of weakness in Turkey. Regional growth is expected to pick up modestly in 2020-21, as a gradual recovery in Turkey offsets moderating activity in Central Europe. The main risks to the region are weaker-than-expected investment due to heightened policy uncertainty, and a renewal of financial pressure in Turkey combined with possible contagion to the rest of the region.

Recent developments

Activity in the Europe and Central Asia (ECA) region is estimated to have slowed to 3.1 percent in 2018 from 4 percent in 2017, reflecting the marked weakness in activity in Turkey in the second half of the year. Excluding Turkey, regional growth remained unchanged at an estimated 2.9 percent in 2018, as slowing activity in countries in the western part of the region, such as Hungary and Romania, offset an acceleration in the eastern part of the region that benefitted from higher oil prices (Figure 2.2.1).

In Turkey, the lira declined more than 30 percent in 2018 reflecting capital outflows in response to accelerating inflation, a perceived delay in monetary tightening, and rising private sector debt. The country faces sizable current account deficit and a large foreign-currency denominated debt load, leaving it vulnerable to shifting investor sentiment and currency depreciation. Output shrank [X percent, data released Dec10] percent in 1Q3, as consumer confidence plummeted, and capital outflows and monetary policy tightening led to credit scarcity. Despite this contraction, strong growth in the first half of the year will bring Turkish growth to an estimated 3.6 percent for 2018.

Growth among the Central European economies slowed in 2018. Softening exports and labor shortages restrained growth in Bulgaria, Croatia, Hungary, and Romania. By contrast, despite labor shortages, growth in Poland accelerated slightly because of fiscal support and strong consumption. Robust domestic demand supported activity in the Western Balkans, except for Montenegro. In the Former Yugoslav Republic of Macedonia, growth rebounded in 2018 as the formation of a new government ended a prolonged political crisis and improved investor sentiment (World Bank 2018a).

Russia and other oil exporters in Central Asia maintained steady growth in 2018, supported by a rise in oil prices. Despite a tightening of economic sanctions by the United States, the Russian economy increased oil production, inflation remained low and relatively stable, and domestic activity was robust (World Bank 2018b). Higher-than-expected production in the Kashagan oil field and strong domestic demand supported growth in Kazakhstan. A stabilization in the financial sector and higher oil prices contributed to a slow recovery of growth in Azerbaijan in 2018.

The stance of fiscal policy in the region varies. Turkey has committed to tight fiscal policy to help curb high inflation and currency depreciation. Romania’s fiscal stance is mixed, with income tax reductions and increased public sector benefits offset by an increase in social contribution revenue. Fiscal policy has become more procyclical.

Note: This section was prepared by Yoki Okawa. Research assistance was provided by Zhuo Chen and Mengyi Li.
in Croatia and Poland. In the eastern part of the region, the Russian government has implemented a new fiscal rule and is estimated to have recorded last year its first surplus since 2012. As fiscal stimulus measures phased out, Kazakhstan has started to tighten the fiscal stance, resulting improvement of non-oil fiscal balance, while Azerbaijan continues to rely on fiscal measures to support the economy.

For the majority of ECA countries, monetary policy is either stable or loosening. In the second half of 2018, nine countries lowered policy rates compared to a year ago, while three countries have higher policy rates (Romania, Ukraine, Turkey). Inflation reached 25 percent in Turkey in October, significantly above the 5 percent target amid an overheating economy in the first half of 2018 and currency depreciation in the second. To ward off inflationary and currency pressures, Turkey’s central bank increased the average cost of funding more than 10 percentage points over the course of 2018. In Central Europe, tightening labor markets and increasing energy prices have pushed inflation up toward target, with monetary policy remaining stable in most countries—except Romania, where robust domestic demand pushed inflation above the upper bound of the target band, prompting monetary policy tightening. Gradually accelerating inflation has also led to policy tightening in Ukraine. In the Western Balkans, Albania, FYR Macedonia, and Serbia have lowered policy rates amid stable and below-target inflation. For oil exporters such as Azerbaijan and Kazakhstan, the ongoing recovery from the 2014-16 oil price plunge has resulted in lower inflation and looser monetary policy. In Russia, monetary policy was tightened in late 2018 amid pressures on the currency.

**Outlook**

The lingering effects of financial stress in Turkey are expected to be reflected in a further slowing of regional growth in 2019, to 2.3 percent, before recovering to 2.7 percent in 2020 (Figure 2.2.2). Excluding Turkey, regional growth is expected to average 2.5 percent during the forecast horizon from 2.9 percent in 2018, with a gradual deceleration in Central Europe. This outlook is predicated on an orderly tightening of global financial conditions, the oil price averaging $69 in 2019-2021, a gradual slowdown in the Euro Area, and the absence of heightened geopolitical tensions.

While the outlook for Turkey is subject to considerable uncertainty, the country is expected
to suffer continued weak activity as high inflation, high interest rates, and low confidence dampen consumption and investment. Turkish growth is expected to slow to 1.6 percent in 2019 and begin to recover by 2020 through a gradual improvement in domestic demand and continued strength in net exports. However, this outlook assumes that fiscal and monetary policy successfully avert further sharp falls in the lira and corporate debt restructurings help avert serious damage to the financial system. A comprehensive stabilization package with consistent policy framework, clear milestones, and effective communication would help reduce risks and support recovery.

Spillovers from Turkey to the rest of the region are expected to remain modest, as trade and financial linkages are relatively limited. On the trade side, Azerbaijan has the largest exposure, as 9 percent of its exports are directed to Turkey. Financial linkages are also small—only Georgia receives meaningful amounts of FDI from Turkey, while foreign bank ownership of Turkish assets is limited in scale.

Growth in western ECA, excluding Turkey, is projected to gradually slow toward potential, driven by a slowdown in Central European economies. Domestic demand in this sub-region will be constrained by tight labor markets, while a continued slowdown in Euro Area growth will limit export growth. Poland is expected to slow from 4.7 percent in 2018 to 3.9 percent in 2019, as fiscal policy becomes less supportive.

Growth in eastern ECA is forecast to slow in 2019, as the Russian economy decelerates. The country’s VAT is scheduled to be increased from 18 to 20 percent in 2019, which will temporarily drag on Russian growth. Kazakhstan’s economy is also expected to decelerate as oil production growth levels off and fiscal consolidation efforts continue (World Bank 2018c).

**Risks**

Despite some upside risks—mainly, that stronger-than-expected energy prices support activity in Russia and other oil exporters—the balance of risks is increasingly tilted down. The most important downside risk is the possibility that the recent financial stress in Turkey worsens and triggers widespread bank failures. Turkish corporations carry significant debt, much of which is denominated in or linked to foreign currencies. Although many corporations are hedged against...
forex risks and corporate debt restructuring is under way, falling domestic demand and forex exposure of non-tradable sector pose risks. Currency depreciation and high interest rates could push corporate borrowers into bankruptcy and depleting banks’ capital buffers. Renewed pressure in currency markets and increased uncertainty about the policy framework would increase the probability of deepening crisis, implying a longer and more severe slowdown than currently forecast for Turkey (World Bank 2018d). While direct linkages between Turkey and the rest of the region are small, an intensification of financial stress in Turkey or other EMDEs could also lead investors to reevaluate their exposure in the region, which in turn could lead to capital outflows, currency depreciations, and rising borrowing costs for vulnerable countries.

The potential for financial stress is more elevated for countries with domestic vulnerabilities like Romania and Belarus, which have large and/or widening current account deficits. Public debt, which remains high despite recent declines, and private borrowing in foreign currencies makes Central European countries such as Croatia, Hungary, and Poland vulnerable to financial pressure. Public debt has also been trending up in Central Asia and the Western Balkans.

The region is subject to the risks of heightened policy uncertainty and rising geopolitical tensions. A slowdown or reversal of ongoing structural reforms remains a risk in many countries in the region, especially in Armenia, Azerbaijan, Belarus, Ukraine, and Turkey. A deterioration in confidence stemming from unexpected policy shifts could negatively affect activity in the region—for example, tension concerning Syria or Ukraine could trigger new sanctions, or policy disagreements between the European Union and some Central European countries could deter international investors and reduce fiscal transfers. An escalation of trade restrictions between the United States and the Euro Area could have a negative impact on western ECA countries, as the Euro Area is the largest trading partner for all countries in the sub-region.
### TABLE 2.2.1 Europe and Central Asia forecast summary

(Real GDP growth at market prices in percent, unless indicated otherwise)

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<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>2018e</th>
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<th>2021f</th>
<th>Percentage point differences from June 2018 projections</th>
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<td>2.9</td>
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<td>2.5</td>
<td>2.7</td>
<td>2.5</td>
<td>0.1   -0.3   0.0</td>
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(Average including countries with full national accounts and balance of payments data only)

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<th></th>
<th>2016</th>
<th>2017</th>
<th>2018e</th>
<th>2019f</th>
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<td><strong>GDP per capita (U.S. dollars)</strong></td>
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<td></td>
<td>1.2</td>
<td>3.6</td>
<td>2.7</td>
<td>2.0</td>
<td>2.5</td>
<td>2.7</td>
<td>-0.1  -0.8  -0.2</td>
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<td>3.0</td>
<td>2.3</td>
<td>2.7</td>
<td>2.9</td>
<td>-0.2  -0.8  -0.3</td>
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<td>2.9</td>
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<td>2.1</td>
<td>1.9</td>
<td>2.5</td>
<td>2.2</td>
<td>2.1</td>
<td>0.4   1.1   0.9</td>
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<td>0.2</td>
<td>2.2</td>
<td>4.6</td>
<td>4.8</td>
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<td>5.5</td>
<td>5.3</td>
<td>4.3</td>
<td>4.5</td>
<td>0.7   0.6   -0.4</td>
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<td>10.4</td>
<td>2.8</td>
<td>5.1</td>
<td>5.8</td>
<td>5.8</td>
<td>-2.7  -0.4  0.6</td>
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<td><strong>Net exports, contribution to growth</strong></td>
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<td>-0.7</td>
<td>1.1</td>
<td>0.3</td>
<td>-0.2</td>
<td>-0.2</td>
<td>1.1   0.3   -0.2</td>
</tr>
</tbody>
</table>

**Memo items: GDP**

|                      |       |       |       |       |       |       |                                                        |
| **Commodity exporters** |      |      |       |       |       |       |                                                        |
|                      | 0.3  | 2.0  | 2.1   | 2.0   | 2.3   | 2.3   | -0.1  -0.3  -0.0                                       |
| **Commodity importers** |      |      |       |       |       |       |                                                        |
|                      | 3.1  | 5.9  | 4.0   | 2.6   | 3.2   | 3.6   | -0.3  -1.2  -0.5                                       |
| **Central Europe**   |      |      |       |       |       |       |                                                        |
|                      | 3.3  | 4.8  | 4.4   | 3.6   | 3.3   | 3.0   | -0.2  -0.1  -0.2                                       |
| **Western Balkans**  |      |      |       |       |       |       |                                                        |
|                      | 3.0  | 2.5  | 3.5   | 3.5   | 3.8   | 3.8   | -0.2  -0.1  0.0                                        |
| **Eastern Europe**   |      |      |       |       |       |       |                                                        |
|                      | 0.8  | 2.6  | 3.6   | 2.7   | 3.1   | 3.4   | -0.3  -0.9  -0.4                                       |
| **South Caucasus**   |      |      |       |       |       |       |                                                        |
|                      | -1.6 | 2.0  | 2.5   | 4.0   | 3.8   | 3.4   | -0.1  0.0   0.1                                        |
| **Central Asia**     |      |      |       |       |       |       |                                                        |
|                      | 3.3  | 4.8  | 4.4   | 4.2   | 4.0   | 4.1   | 0.0   0.0   0.0                                        |
| **Russia**           |      |      |       |       |       |       |                                                        |
|                      | -0.2 | 1.5  | 1.6   | 1.5   | 1.8   | 1.8   | -0.1  -0.3  -0.0                                       |
| **Turkey**           |      |      |       |       |       |       |                                                        |
|                      | 3.2  | 7.4  | 3.6   | 1.6   | 3.0   | 4.2   | -0.9  -2.4  -1.0                                       |
| **Poland**           | 3.0  | 4.6  | 4.7   | 3.9   | 3.6   | 3.3   | -0.5  -0.2  0.1                                        |

### Source
World Bank.

**Notes:**
- **e** = estimate;  **f** = forecast. **EMDE** = emerging market and developing economy. World Bank forecasts are frequently updated based on new information and changing (global) circumstances. Consequently, projections presented here may differ from those contained in other Bank documents, even if basic assessments of countries’ prospects do not differ at any given moment in time.

1. GDP at market prices and expenditure components are measured in constant 2010 U.S. dollars.
2. Sub-region aggregate excludes Bosnia and Herzegovina, Kosovo, Montenegro, Serbia, Tajikistan, and Turkmenistan, for which data limitations prevent the forecasting of GDP components.
3. Exports and imports of goods and non-factor services (GNFS).
4. Includes Albania, Armenia, Azerbaijan, Kazakhstan, the Kyrgyz Republic, Kosovo, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.
5. Includes Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Georgia, Hungary, FYR Macedonia, Moldova, Montenegro, Poland, Romania, Serbia, and Turkey.
6. Includes Albania, Bosnia and Herzegovina, Kosovo, FYR Macedonia, Moldova, Montenegro, Poland, Romania, Serbia, and Turkey.
7. Includes Armenia, Azerbaijan, and Georgia.
8. Includes Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan.
9. Includes Armenia, Azerbaijan, and Georgia.
10. Includes Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan.

For additional information, please see www.worldbank.org/gep.
### TABLE 2.2.2 Europe and Central Asia country forecasts

(Real GDP growth at market prices in percent, unless indicated otherwise)

<table>
<thead>
<tr>
<th>Country</th>
<th>2016</th>
<th>2017</th>
<th>2018e</th>
<th>2019f</th>
<th>2020f</th>
<th>2021f</th>
<th>Percentage point differences from June 2018 projections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
<td>3.4</td>
<td>3.8</td>
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<td>3.6</td>
<td>3.5</td>
<td>3.5</td>
<td>0.4</td>
</tr>
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<td>Armenia</td>
<td>0.2</td>
<td>7.5</td>
<td>5.3</td>
<td>4.3</td>
<td>4.6</td>
<td>4.6</td>
<td>1.2</td>
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<tr>
<td>Azerbaijan</td>
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<td>0.1</td>
<td>1.1</td>
<td>3.6</td>
<td>3.3</td>
<td>2.7</td>
<td>-0.7</td>
</tr>
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<td>Belarus</td>
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<td>2.4</td>
<td>3.8</td>
<td>2.0</td>
<td>2.5</td>
<td>2.5</td>
<td>0.9</td>
</tr>
<tr>
<td>Bosnia and Herzegovnia</td>
<td>3.1</td>
<td>3.0</td>
<td>3.2</td>
<td>3.4</td>
<td>3.9</td>
<td>4.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Bulgaria</td>
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<td>3.8</td>
<td>3.3</td>
<td>3.1</td>
<td>3.0</td>
<td>2.8</td>
<td>-0.5</td>
</tr>
<tr>
<td>Croatia</td>
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<td>2.7</td>
<td>2.8</td>
<td>2.8</td>
<td>2.6</td>
<td>0.1</td>
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<tr>
<td>Georgia</td>
<td>2.8</td>
<td>5.0</td>
<td>5.3</td>
<td>5.0</td>
<td>5.0</td>
<td>5.0</td>
<td>0.8</td>
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<tr>
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<td>4.0</td>
<td>4.6</td>
<td>3.2</td>
<td>2.8</td>
<td>2.4</td>
<td>0.5</td>
</tr>
<tr>
<td>Kazakhstan</td>
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<td>3.2</td>
<td>3.2</td>
<td>0.1</td>
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<tr>
<td>Kosovo</td>
<td>4.1</td>
<td>4.2</td>
<td>4.2</td>
<td>4.5</td>
<td>4.5</td>
<td>4.5</td>
<td>-0.6</td>
</tr>
<tr>
<td>Kyrgyz Republic</td>
<td>4.3</td>
<td>4.6</td>
<td>3.1</td>
<td>3.4</td>
<td>3.9</td>
<td>4.0</td>
<td>-1.1</td>
</tr>
<tr>
<td>Macedonia, FYR</td>
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<td>0.0</td>
<td>2.5</td>
<td>2.9</td>
<td>3.2</td>
<td>3.3</td>
<td>0.2</td>
</tr>
<tr>
<td>Moldova</td>
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<td>4.5</td>
<td>4.8</td>
<td>3.8</td>
<td>3.5</td>
<td>3.2</td>
<td>1.0</td>
</tr>
<tr>
<td>Montenegro</td>
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<td>2.8</td>
<td>2.5</td>
<td>2.5</td>
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<tr>
<td>Poland</td>
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<td>4.7</td>
<td>3.9</td>
<td>3.6</td>
<td>3.3</td>
<td>0.5</td>
</tr>
<tr>
<td>Romania</td>
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<td>6.9</td>
<td>4.1</td>
<td>3.5</td>
<td>3.1</td>
<td>2.8</td>
<td>-1.0</td>
</tr>
<tr>
<td>Russia</td>
<td>-0.2</td>
<td>1.5</td>
<td>1.6</td>
<td>1.5</td>
<td>1.8</td>
<td>1.8</td>
<td>0.1</td>
</tr>
<tr>
<td>Serbia</td>
<td>2.8</td>
<td>1.9</td>
<td>3.5</td>
<td>3.5</td>
<td>4.0</td>
<td>4.0</td>
<td>0.5</td>
</tr>
<tr>
<td>Tajikistan</td>
<td>6.9</td>
<td>7.1</td>
<td>6.1</td>
<td>6.0</td>
<td>6.0</td>
<td>6.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Turkey</td>
<td>3.2</td>
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<td>Turkmenistan</td>
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<td>-0.1</td>
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<tr>
<td>Ukraine</td>
<td>2.3</td>
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<td>5.1</td>
<td>5.5</td>
<td>6.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>


Notes: e = estimate; f = forecast. World Bank forecasts are frequently updated based on new information and changing (global) circumstances. Consequently, projections presented here may differ from those contained in other Bank documents, even if basic assessments of countries’ prospects do not significantly differ at any given moment in time.

1. GDP at market prices and expenditure components are measured in constant 2010 U.S. dollars, unless indicated otherwise.
2. GDP growth rate at constant prices is based on production approach.

For additional information, please see www.worldbank.org/gep.
Box 2.2.1 Informality in Europe and Central Asia

The share of informal output in Europe and Central Asia (ECA) is larger than the EMDE average, even after a decline from elevated 1995 levels, but informality in the labor market is below average and there is wide heterogeneity within the region. Informality in ECA has been associated with weak institutions, sizeable agricultural sectors, and large-scale migration as well as low productivity, fiscal revenue losses, and poor job prospects for youth. In some countries in the region, declines in informality have accompanied the simplification of tax systems and labor market regulations, as well as reforms to reduce corruption.

Introduction

Informal output accounts for a larger share of official GDP (36 percent) in Europe and Central Asia (ECA) than in the average EMDE (Figure 2.2.1.1). However, despite a widely shared history of transition from centrally planned to market economies, there is significant variation in informality within the region, ranging from 22 percent to 56 percent.

Against this backdrop, this Box examines the following questions.

• How has informality evolved in Europe and Central Asia?
• What have been the macroeconomic and social correlates of informality?
• What policy options are available to address challenges associated with informality?

Evolution and drivers of informality

Evolution of informality. With the collapse of centrally planned economies in the late 1980s, many firms chose to operate in the informal sector to avoid burdensome regulations, taxation, or corruption. Estimates based on electricity consumption suggest that the average size of the informal economy more than doubled during 1989-95 (Johnson, Kaufmann, and Shleifer 1997). While informality declined in most countries once an economic recovery got underway, there was considerable heterogeneity across countries. In the western part of the region, where institutions were stronger, informality declined steeply. Notwithstanding this decline, one in ten formal employees in Central Europe still received “envelope wages” in 2006, and the informal economy in Central Europe accounted for 10 percentage points of GDP more than in the more advanced EU19 economies in 1999-2007 (Fialová 2011). In the eastern part of the region, the decline in informality has been considerably less pronounced, in part reflecting slower implementation of market liberalizing and other reforms, as well as persistently higher levels of corruption (Kaufmann and Kaliberda 1996).

Drivers of informality. Informality in ECA economies has typically been attributed to three factors:

• Agriculture. Higher labor market informality has been associated with a larger share of workers in the agricultural sector as they tend to be self-employed (Figure 2.2.1.2; Rutkowski 2006; World Bank 2011). A larger agricultural sector has also been correlated with greater informality in non-agricultural sectors (Atesagaoglu, Bayram, and Elgin 2017).
• Remittances. In countries with large diasporas, informal activity has been higher among workers in households that receive sizeable remittances (Chatterjee and Turnovsky 2018; Shapiro and Mandelman 2016). In Kazakhstan, FYR Macedonia, Moldova, Serbia, Tajikistan, and Ukraine, remittances provided the capital to establish small businesses, which tend to be informal, and the income support needed to accept less secure but often more lucrative informal work (Ilevs 2016).
• Institutions. Institutional quality varies widely within the region. The east has considerably weaker indicators than the west, which implemented substantial reforms in the context of the EU accession process (Figure 2.2.1.2; Kaufmann and Kaliberda 1996). In general, a favorable business environment encourages firms to do business in the formal sector (Chapter 3). However, the transition from economies dominated by large-state owned enterprises to more...
The share of informal output in the ECA region is higher than the EMDE median throughout the sample period, and it declined at the roughly same pace as in the other EMDE regions. However, employment informality is low, in part reflecting a low share of agriculture in some countries in the region. Institutional quality is on par with other regions, albeit with considerable heterogeneity within the region.


Notes: Blue bars show simple averages of the informal economy of the region. Red markers show the median average of all EMDEs and the vertical lines denote interquartile range of all EMDEs.

A. Both DGE and MIMIC estimates measure the informal output in percent of official GDP.
B. Labor force without pension is the fraction of the labor force that doesn’t contribute to a retirement pension scheme, which is derived from the original data on pension coverage obtained from WDI. Self-employed is the share of self-employment in total employment.
C. WEF index is the average responses at the country-year level to the following question (surveyed by World Economic Forum): “In your country, how much economic activity do you estimate to be undeclared or unregistered? (1 = Most economic activity is undeclared or unregistered; 7 = Most economic activity is declared or registered).” WEF indices are re-ordered (i.e. 1 = Most economic activity is declared or registered; 7 = Most economic activity is undeclared or unregistered) so that a higher average at the country level indicates a larger informal economy. The index does not use data for year 2004-2005 due to inconsistency in survey methods. The World Value Survey asks whether respondents can justify cheating on taxes, with responses ranging from 1 (never justifiable) to 10 (always justifiable). The average responses at the country-year level are used as a measure for attitudes towards informality (or tax morality, Oveido et al. 2009), labeled as WVS. A higher average at the country level implies that people find cheating on taxes more justifiable.
D. All measures are taken from the latest year available. The first three institutional measures are taken from World Bank’s World Governance Indicators (2017), with a higher value indicating better institutional quality in year 2016. The “Ease of doing business” (DB 2018) and “Ease of paying taxes” (DB 2017) are taken from World Bank’s Doing Business database and measured as “Distance to Frontier”, with a higher value indicating an easier environment for businesses.
private-business friendly economies sometimes created more informal employment and larger informal sector (Earle and Sakova 2000).

**Correlates of informality**

**Firm productivity.** Some country-specific studies suggest that informal firms tend to be less productive than formal firms. In Turkey, for example, after controlling for firm characteristics, informal firms in the manufacturing sector and services sector had 16 percent and 38 percent lower total factor productivity than formal firms, respectively, with the productivity gap attributed to restricted access to public services and formal markets (Taymaz 2009). By these estimates, shifting all informal firms in the Turkish manufacturing and services sectors into the formal sector could raise total output by 5 percent and 25 percent in manufacturing and services, respectively (Taymaz 2009). In Kyrgyz Republic, productivity in the informal sector has declined significantly since 2009, despite robust productivity growth in the formal sector (Sattar, Keller, and Baibagysh Uulu 2015).

**Fiscal revenues.** Large informal sectors erode tax revenues and hamper governments’ ability to provide public goods. However, the magnitude of foregone revenues due to informality remains a matter of debate. One estimate suggests that tax revenue losses from informality could have been as high as 7 percent of GDP in Central Asia and the Caucasus in 2004 (Grigorian and Davoodi 2007). However, estimates based on micro survey data suggest only modest potential revenues gains (0.03-0.07 percentage points of GDP) from turning informal workers into formal workers in a country such as Ukraine in 2009, as newly formalized are mainly low-skilled worker subject to low tax rates (World Bank 2011).

**Labor market prospects.** Informal employment is more common among young, low-skilled, and female workers, and some studies suggest that informal employment can damage prospects to improve long-term careers and entrenches income differentials (World Bank 2007; Taymaz 2009; World Bank 2011). However, informal employment can also be an income source when formal employment opportunities are scarce and can provide an opportunity to develop human capital towards eventual formal employment or self-employment, as has been found for Russia and Turkey (Guariglia and Kim 2006; World Bank 2009). Better-paid informal activity may also encourage skilled professionals to forgo migration opportunities in highly regulated economies with large emigration, such as Tajikistan (Abdulloev, Gang, and Landon-Lane 2011).

**Inequality.** In some countries, the low wages paid to informal workers (the “wage penalty”) compared with formal workers have contributed to inequality. In Serbia, the wage penalty was found to contribute to rising inequality between 2002 and 2007 (Krstic and Sanfey 2010). Similar wage penalties in Turkey were found to lower incomes of less educated workers, for whom informal employment is more common (Taymaz 2009). However, in some cases informal workers have been found to earn a wage premium, e.g., in Russia, Romania, Tajikistan, and Ukraine (Zahariev 2003; Stanova and Arbasheibani 2014; Shehu and Nilsson 2014; Lehmann and Norberto 2018). In those countries, the informal wage premium may compensate for the lack of social security and lower job security (Marcouiller and Woodruff 1997; Lehmann and Norberto 2018).

**Policy challenges**

The impact of policies on informality can depend on country characteristics such as labor market flexibility, efficiency of tax collection or control of corruption. This underscores the importance of ensuring that reform efforts are carefully tailored to country circumstances to avoid unintended increases in informality.

**Labor market policies.** The impact of labor market reforms on informality in ECA has been mixed, and appears to have depended on country characteristics. In a cross-sectional study of ECA countries, more restrictive employment protection legislation has been associated with a higher share of the informal economy (both in terms of GDP and labor force; Fialová 2011; Lehmann and Muravyev 2009). In contrast, there was no robust association of informality with more generous unemployment benefits or higher minimum wages (Fialová 2011; Lehmann and Muravyev 2009).

**Fiscal policy.** Several countries have changed tax rates or tax enforcement, but the impact on informality has been varied. That said, reducing the tax compliance burden and

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5 This is consistent with the finding that informally employed youth have lower job satisfaction relative to their peers with formal jobs (Shehu and Nilsson 2014).

6 Controlling for worker characteristics and selection bias, the absence of male-female wage differentials in the informal economy—in the presence of large differentials in the formal economy—has been interpreted as sign of lesser gender discrimination in the informal economy than in the formal economy in Turkey (Tansel 2000).
Informality as a percentage of GDP in the eastern part of the region is higher than the western part of the region, in part reflecting differences in institutional quality. Employment informality tends to be higher in countries with larger agricultural sectors.

Sources: European Bank of Reconstruction and Development, World Bank, and World Governance Indicators.

Notes:
A. Data are from the latest year available, usually 2016.
B. The western part of the region includes Central Europe (Bulgaria, Croatia, Hungary, Poland and Romania) and the Western Balkans (Albania, Bosnia and Herzegovina, Kosovo, the Former Yugoslav Republic of Macedonia, Montenegro, and Serbia), and Turkey. The eastern part of the region comprises Eastern Europe (Belarus, Moldova, and Ukraine), South Caucasus (Armenia, Azerbaijan and Georgia), Central Asia (Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan) and Russia.
C. Orange diamonds indicate subsample average and blue bars indicate one standard deviation range.
D. DGE estimate of informal output in percent of official GDP.
E. Share of self-employment.
F. Average percentile rank among 214 sample countries. Higher value means better quality.
Informality in Europe and Central Asia (continued)

subsidizing a transition to the formal sectors have typically been accompanied by declines in informality.\(^7\)

- **Flat tax.** One form of tax simplification that has been used in the region is the introduction of a flat labor income tax rate (e.g., Bulgaria, Poland, Russia, and Romania). The flat tax reform in Russia was followed by a decline in informal employment and informal activity, especially in the top income bracket (Slonimczyk 2012). A simulation suggests that the Polish flat tax reform in 2004 could have led to a 48 percent increase in reported business income and 25 percent higher tax revenue, despite a lower average marginal tax rate (Kopczuk 2012). However, flat tax structures can be regressive and need to be balanced with poverty fighting initiatives.

- **Preferential tax schemes.** Another form of tax simplification that has been used has been the introduction of indirect assessments of tax liabilities for the self-employed and small firms. Such measures can encourage entrepreneurship, help revenue collection from hard-to-tax sectors, and ease the transition from informal to formal work. However, these preferential schemes for small firms can also encourage formal workers to avoid taxes by shifting into the preferential status and may encourage firms to remain small (Packard et al. 2014).

- **Shift from labor to other taxation.** Shifting from labor income taxes, which constitute a wedge between informal and formal employment, to less distorting and more easily enforced taxes, such as value-added taxes and progressive real estate taxes, can shrink the informal economy (Packard et al. 2014).

- **Subsidies.** A formal employment subsidy, such as the one introduced in Turkey, can increase the number of registered jobs by encouraging informal workers to transition to formal employment as well as provide better social protection (Betcherman, Daysal, Pages 2010).

**Control of corruption.** Better governance and more effective tax authorities can reduce the size of the informal economy and increase tax revenue. Bureaucratic corruption has been associated with greater informal activity in Poland, Romania, and Slovakia (Johnson et al. 2000). Conversely, better control of corruption has reduced the extent of informal activities in the countries that joined the European Union in the mid-2000s (Fialová 2011).

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\(^7\) On the one hand, higher labor tax rates encourage a move of labor into untaxed informal employment, especially for low-wage earners (Koettl and Weber 2012). On the other hand, higher labor tax rates have in some cases been associated with a lower share of informal employment, because higher revenue allow governments to provide better public goods that can only be accessed in formal employment (Fialova 2011, Freedman, Johnson and Kaufmann 2000).
Growth in Latin America and the Caribbean was disappointingly weak in 2018, at an estimated 0.7 percent, and notably lower than previously expected. This reflected the impact of Argentina’s recent currency crisis, a truckers’ strike and policy uncertainty in Brazil, and worsening conditions in Venezuela. Growth is expected to pick up in 2019, to 1.8 percent, as growth accelerates in Brazil and the recession in Argentina begins to fade. Per capita growth in LAC is projected to pick up moderately, and to outpace that in advanced economies starting in 2020, after six years of stalled convergence. Downside risks continue to dominate. Key external risks include the possibility of an abrupt further tightening of external financial conditions and a further escalation of international trade policy uncertainty. The region also faces intraregional and domestic risks, such as spillovers from larger-than-expected growth contractions in Argentina and Venezuela and the persistent threat of natural disasters and extreme weather.

**Recent developments**

Growth in Latin America and the Caribbean stalled at a subdued 0.7 percent in 2018, substantially weaker than previously projected. The disappointing growth outcome reflected softening global trade growth and tighter external financing conditions. Developments in Brazil, Argentina, and Venezuela hindered regional growth, despite a solid pickup in several mid-size economies (e.g., Chile, Colombia, Peru). Growth moderated in Central America, reflecting a variety of factors, while it strengthened in almost all Caribbean economies as the subregion began to recover from a severe 2017 hurricane season.

In Brazil, growth bounced back in the second half of 2018, following a strike-induced dip around mid-year, but remains subdued. In Argentina, the recent currency crisis and associated sharp tightening of monetary and fiscal policies, together with the effect of a severe drought on the agriculture sector, resulted in a sharp contraction in activity. Venezuela’s economic collapse has deepened, and there is no indication that the latest redenomination of the currency has had a major impact on ongoing hyperinflationary dynamics.

Commodity price developments are also affecting LAC economies. The decline in copper prices in the second half of 2018 contributed to slowing growth momentum in Chile and Peru, after a strong performance in the first half. Rising oil prices underpinned accelerating growth in oil-producing Colombia. In oil-importing Central America, higher oil prices were one factor that inhibited growth in 2018, despite the decline in prices at the end of the year. The sub-region was also affected by weak confidence in Costa Rica and Panama, political uncertainty in Guatemala, and social unrest in Nicaragua.

A long-awaited rebound in regional fixed investment that began in 2017 was significantly weaker in 2018 than previously expected, after losing momentum in the first half of the year (Figure 2.3.1). Export growth in the region was also lower than expected, owing to the drought in Argentina and slowing global trade growth.

Nearly all LAC economies with floating exchange rates have experienced nominal depreciation against the U.S. dollar, particularly Argentina, Brazil, Chile, Colombia, and Uruguay. The adjustment in effective terms has been more

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Note: This section was prepared by Dana Vorisek. Brent Harrison provided research assistance.
modest. In most of these economies, especially Argentina, depreciation is contributing to a rise in inflation. Recent interest-rate hikes (e.g., in Chile) were made partly reaction to exchange rate pass-through to domestic inflation, despite falling pass-through ratios observed over the long term (Ha, Stocker, and Yilmazkuday 2019). Central banks in several countries have intervened in foreign exchange markets using derivative instruments to reduce currency volatility (e.g., Brazil, Uruguay) or to build reserves (e.g., Colombia).

External financing conditions have tightened. Against the backdrop of rising U.S. interest rates, U.S. dollar appreciation, and weaker investor sentiment toward EMDEs, the region has experienced a generalized rise in bond and credit default swap spreads and a fall in equity indexes. Capital inflows, particularly bond flows, steadily diminished through the third quarter of 2018. Current account deficits have widened in most commodity-exporting and commodity-importing economies. Several Caribbean economies that were not significantly damaged by hurricanes in 2017, however, registered narrowing deficits or widening surpluses as a share of GDP in 2018 on strong tourism inflows and rising oil prices (e.g., The Bahamas, Belize, St. Vincent and the Grenadines, and Trinidad and Tobago).

Fiscal conditions across the region remain fragile, and government debt continues to build. Fiscal deficits narrowed slightly in most countries in 2018, however. The improvement mainly reflected higher revenues, in part stemming from rising prices of key commodities. The recently undertaken austerity program in Argentina will be challenging to implement but should improve long-term fiscal sustainability. In Chile, a proposed tax reform would integrate and streamline the tax system. A proposed tax reform in Colombia would boost revenues in order to comply with fiscal targets.

**Outlook**

Regional growth is projected to advance to a still modest 1.8 percent in 2019, lower than previously projected, and build to 2.5 percent in 2021 (Figure 2.3.2). The pickup will be supported mainly by private consumption. Investment growth will accelerate, though at a slower pace this year than previously expected, in view of tight financing conditions and planned public spending.
reductions in a number of countries. Decelerating global trade will limit export growth during the forecast period.

Although the prices of key non-oil commodities such as soybeans and copper are projected to continue rising through the forecast period, copper prices will increase at a much slower pace through 2021 than in 2017 and 2018. Oil prices are projected to be flat, on average, during 2019-20, at $69 per barrel, potentially limiting fiscal and export revenue increases in oil-producing economies.

In Brazil, momentum is expected to steadily build in 2019, from a weak base. The growth forecast of 2.2 percent for this year assumes that fiscal reforms are implemented expeditiously under the incoming administration, and that a recovery of consumption and investment, resulting from improving confidence and investor sentiment, will outweigh the negative growth effect of reduced government spending. In Mexico, policy uncertainty is expected to keep growth at a moderate 2.2 percent in 2019, despite the decrease in trade-related uncertainty following the announcement of the United States-Mexico-Canada Agreement. Argentina’s economy is expected to continue contracting in 2019 as deep fiscal consolidation results in a loss of employment and reduction in consumption and investment, and as high interest rates place corporate balance sheets under stress and dampen private investment.

By 2020, a strengthening recovery in Brazil, modestly accelerating growth in Mexico, and solid performance in Chile, Colombia, and Peru, are expected to push regional growth to 2.4 percent, consistent with potential. Per capita GDP growth in the region is also expected to accelerate moderately, and to outpace per capita growth in advanced economies starting in 2020, after five years of stalled convergence.

Achieving sustained improvements in potential growth in the region over the medium term will require implementing reforms in several areas. There is need to improve infrastructure and education attainment, reduce labor market inflexibility, deepen trade integration, and address the negative economic and social outcomes of informality, among other challenges (World Bank 2018; Chapter 3; Box 2.3).
Risks

Risks to the regional outlook remain tilted to the downside. The experience of Argentina in 2018 is a stark reminder of the risk of sudden and widespread shifts of investor sentiment toward EMDEs. Tightening global financing conditions are a particular concern for countries with large current account deficits or reliance on volatile capital inflows (e.g., Argentina, Bolivia, and several Caribbean countries), with high external debt loads (e.g., Jamaica, Nicaragua, Venezuela), or with sizable foreign-currency-denominated debt as a share of GDP (e.g., Costa Rica, Honduras, Nicaragua).

Trade tensions are another key external risk. Although trade diversion in response to rising trade restrictions in the United States and Canada may benefit some LAC economies in the short term, continued trade tensions may dampen regional growth in the medium term through export, confidence, and commodity market channels.

LAC economies also face intraregional and domestic sources of risk. Thus far, the recession in Argentina has had limited spillovers on the rest of the region. But a larger-than-expected contraction in Argentina could spill over to the rest of the region through trade and financial flows. Paraguay and Bolivia are most reliant on Argentina as a destination for goods exports and a source of remittance inflows. Although Uruguay has diversified its trading partners in recent years, it remains reliant on Argentina for services export revenues through tourism. Cross-border bank lending data for Latin American economies is patchy but suggests that Panama is most exposed, although with bank claims on Argentina still limited at approximately 0.6 percent of domestic GDP.

Continued outward migration from Venezuela stands to have negative spillovers elsewhere in the region. In Colombia, the cost of providing basic public services to migrants and Colombian returnees at levels similar to those delivered to the local population is an estimated 0.2–0.4 percent of GDP per year (World Bank 2018b). However, in the medium and long term, inward migration to Colombia could result in a growth boost as a result of a larger labor supply and higher consumption and investment.

Poor fiscal conditions and slow adjustment of fiscal imbalances are another downside risk, and may have negative repercussions for debt sustainability and market confidence. In Argentina, for instance, adherence to the fiscal consolidation plan is key to a quick emergence from the recent currency crisis. Plans to reduce public spending in other countries (e.g., Ecuador) need to be carried out to retain investor confidence. In Brazil, the new administration needs to urgently make plans to reduce fiscal vulnerabilities arising from an unsustainable pension system.

Election-related risks, which generated considerable uncertainty in countries such as Brazil and Mexico in 2018, are expected to recede, given that the elections scheduled in the next two years are in economies representing a much lower share of regional GDP. However, it will be incumbent on some new governments to implement challenging policy reforms.

Unexpected disruptions related to natural disasters and extreme weather represent a significant ongoing risk. Hurricanes, floods, droughts, and earthquakes have long had detrimental impacts on growth in several economies in the region in recent years. The region remains highly vulnerable to such events, underscoring the need to use risk instruments such as catastrophe bonds and domestic and multi-country catastrophe risk insurance funds (Végh et al. forthcoming).

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1 Calculations of the cost of public services in World Bank (2018) are made using the number of migrants and returnees in Colombia as of September 2018.
### TABLE 2.3.1 Latin America and Caribbean forecast summary

(Real GDP growth at market prices in percent, unless indicated otherwise)

<table>
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<th></th>
<th>2016</th>
<th>2017</th>
<th>2018e</th>
<th>2019f</th>
<th>2020f</th>
<th>2021f</th>
<th>Percentage point differences from June 2018 projections</th>
</tr>
</thead>
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<td>0.7</td>
<td>1.8</td>
<td>2.4</td>
<td>2.5</td>
<td>1.0 - 0.5 - 0.1</td>
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<tr>
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<td></td>
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<td></td>
<td></td>
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<td></td>
<td>(Average including countries with full national accounts and balance of payments data only)²</td>
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#### Memo items: GDP

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Notes: e = estimate; f = forecast. EMDE = emerging market and developing economy. World Bank forecasts are frequently updated based on new information and changing (global) circumstances. Consequently, projections presented here may differ from those contained in other Bank documents, even if basic assessments of countries’ prospects do not differ at any given moment in time.

1. GDP at market prices and expenditure components are measured in constant 2010 U.S. dollars.
2. Aggregate includes all countries in Table 2.3.2 except Dominica, Grenada, Guyana, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, and Trinidad and Tobago, for which data limitations prevent the forecasting of demand-side GDP components.
3. Exports and imports of goods and non-factor services (GNFS).
4. Includes Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, and Venezuela.
5. Includes Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama.
6. Includes Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, and Trinidad and Tobago.

For additional information, please see www.worldbank.org/gep.
### TABLE 2.3.2 Latin America Caribbean country forecasts

(Real GDP growth at market prices in percent, unless indicated otherwise)

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<th>2020f</th>
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**Source:** World Bank.

**Notes:** e = estimate; f = forecast. World Bank forecasts are frequently updated based on new information and changing (global) circumstances. Consequently, projections presented here may differ from those contained in other Bank documents, even if basic assessments of countries’ prospects do not significantly differ at any given moment in time.

1. GDP at market prices and expenditure components are measured in constant 2010 U.S. dollars.
2. GDP is based on fiscal year, which runs from October to September of next year.

For additional information, please see www.worldbank.org/gep.
**Box 2.3.1 Informality in Latin America and the Caribbean**

Informal sector output in Latin America and the Caribbean, equivalent to about one-third of GDP, is slightly higher than in the median EMDE, despite a steady decline during recent decades. Roughly four out of ten of those employed in the region are employed informally. Informality has been associated with lower growth, weaker productivity, and higher levels of inequality. Policies to reduce payroll taxes and increase labor inspections have been found to reduce informality.

**Introduction**

Informality in Latin America and the Caribbean (LAC) during the past decade was slightly higher than in the median emerging and developing economy (EMDE), whether measured in terms of informal output or the share of self-employment (Figure 2.3.1.1, Box 3.2). Yet there is substantial heterogeneity in the incidence informality within the region. Informality tends to be higher in countries with poorer institutional environments.

Against this backdrop, this box addresses the following questions:

- How has informality evolved in Latin America and the Caribbean?
- What have been the macroeconomic and social correlates of informality?
- What policy options are available to address challenges associated with informality?

**Evolution and drivers of informality**

**Moderate informality.** On average, the informal economy in LAC was equivalent to 34 percent of official GDP in 2016, slightly above the median EMDE.¹ Informal employment averaged 62 percent of employment in 2016 (slightly below-median), while 38 percent of those employed were self-employed. Within the region, informality varies considerably.

**Regional heterogeneity.** Output informality ranged from 16 percent of GDP in Chile, in line with rates observed in advanced economies, to 56 percent in Bolivia. Haiti also has very high informality, at 61 percent of GDP.² Survey-based measures of labor informality show a similarly wide range. For Caribbean countries with available data, self-employment as a share of formal employment tends to be very low: 12 percent in Suriname (2014), 14 percent in The Bahamas (2011), and 17 percent in Barbados (2013). Again, Bolivia appears at the top end of the spectrum, with self-employment equivalent to 64 percent of formal employment in 2015. In most countries, labor informality is higher than output informality, although Brazil, Guatemala, and several Caribbean countries are exceptions.

**Trend decline in output informality.** Output informality in the region has steadily declined since the early 2000s (Figure 2.3.1.2). Several of the countries with the highest incidence of output informality (Bolivia, Panama, Peru) have also experienced some of the largest declines during the past two decades, in part due to rapid formal job creation in the context of strong output growth. Yet even where labor informality has fallen, the decline did not necessarily affect all workers equally. In Brazil and Argentina, two of the largest economies in LAC, middle-aged men, the highly skilled, and those working full time were the most likely to shift out of informal into formal employment during the 2000s (Maurizio 2015). Moreover, the decline in output informality has not always been accompanied by a similar decline in labor informality, which has been persistently high in countries such as Bolivia, Colombia, Honduras, Jamaica, Nicaragua, and Peru.

**Correlates of informality**

Informality has been associated with weak institutions and business climates as well as poor macroeconomic, microeconomic, and social outcomes in LAC. These include lower output and productivity growth, weaker financial resilience of households, and greater poverty.

**Weak governance and business climates.** Most of the institutional factors associated with informality are at or slightly above the EMDE average in LAC. However, LAC economies with below-average institutional quality have also tended to be those with high informality. For instance, higher labor informality in Peru than in Chile has been shown to be mostly explained by poor governance (Loayza and Wada 2010). One of the most

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¹ Loayza (1997); Vuletin (2008); Loayza, Servén, and Sugawara (2010); Estevão and de Carvalho (2012); Dougherty and Escobar (2013).
FIGURE 2.3.1.1 Informality in LAC

Output-based informality in LAC has fallen since the 1990s, on average, yet remains above the median in EMDEs. Employment-based informality in the region has risen slightly, to about the EMDE median. The key institutional factors that are often associated with informality, other than the difficulty of paying taxes, are slightly better in LAC than in all EMDEs.

Sources: Elgin et al. (2018); Eurostat; Haver Analytics; Inter-American Development Bank; national statistical bureaus and offices; Organisation for Economic Co-operation and Development; World Bank Doing Business, World Development Indicators (WDI), and World Governance Indicators; World Values Survey.

A. DGE- and MIMIC-based informal activity

B. Labor force without pension and self-employed

C. Perceived informal activity and attitude toward informality

D. Institutional quality

Sources: Elgin et al. (2018); Eurostat; Haver Analytics; Inter-American Development Bank; national statistical bureaus and offices; Organisation for Economic Co-operation and Development; World Bank Doing Business, World Development Indicators (WDI), and World Governance Indicators; World Values Survey.

A. DGE = dynamic general equilibrium model. MIMIC = multiple indicators multiple causes model. DGE sample includes 26 LAC economies and 122 EMDE; MIMIC sample includes 25 LAC economies and 124 EMDEs.

B. Labor force without pension is the share of the labor force that does not contribute to a retirement pension scheme, derived from data on pension coverage obtained from WDI. Self-employed is the share of self-employment in total employment. Labor force without pension sample includes 20 LAC economies and 103 EMDEs; self-employed sample includes 32 LAC economies and 134 EMDEs.

C. WEF = World Economic Forum. WVS = World Values Survey. WEF index is the average response at the country-year level to the question: “In your country, how much economic activity do you estimate to be undeclared or unregistered? (1 = Most economic activity is undeclared or unregistered; 7 = Most economic activity is declared or registered).” WEF index is inverted; a higher average at the country level indicates a larger informal economy. The index does not use data for 2004–05 due to inconsistency in survey methods. The WVS asks whether respondents can justify cheating on taxes (1 = never justifiable; 10 = always justifiable). The average responses at the country-year level are used as a measure of attitude toward informality (or tax morality; Oviedo, Thomas, and Karakurum-Ozdemir 2009). WEF sample includes 25 LAC economies and 114 EMDEs; WVS sample includes 13 LAC economies and 66 EMDEs.

D. All measures are taken from the latest year available. The first three institutional measures are taken from World Bank’s World Governance Indicators (2017), with a higher value indicating better institutional quality in 2016. The “ease of doing business” and “ease of paying taxes” are taken from World Bank’s Doing Business database and measured as distance to frontier, with a higher value indicating a more favorable business environment. Sample includes 32 LAC economies and 149 EMDEs.
common explanations for informality in LAC countries has been restrictive business and labor regulations, which discourage firms from entering the formal sector.³

High tax burdens. High tax rates or burdensome tax regulations have also encouraged informality in the region (Loayza 1997; Vuletin 2008; Ordóñez 2014). Both corporate and personal income tax rates tend to be higher in LAC than in the average EMDE—indeed, LAC is the only EMDE region where the average personal income tax rate has risen since the early 2000s.

Trade liberalization amid inflexible labor markets. Some instances of trade liberalization have also been associated with rising informality in LAC. The reduction of trade barriers in the 1980s and 1990s led to fears that domestic firms in the formal sector would be rendered uncompetitive and shift to the informal sector. In Brazil, the association between trade liberalization and informality was ambiguous in the early literature (Goldberg and Pavcnik 2003; Meneses-Filho and Muendler 2011; Bosch, Gofti-Pacchioni, and Maloney 2012). However, recent research has established that trade liberalization was followed by increased informality in Brazil, though only in...
the long run (Dix-Carneiro and Kovak 2017; Dix-Carneiro et al. 2018). In Colombia, trade liberalization was associated with slightly higher informality, yet only prior to a subsequent reform that increased labor market flexibility (Goldberg and Pavcnik 2003).

**Sectoral and worker characteristics.** Informality has been shown to be higher in the presence of large agricultural sectors. Other structural factors, such as poor education and skills, have also been identified as underlying reasons for labor informality (Fernandez and Villar 2016). In some LAC countries, a considerable share of people working informally entered the informal sector voluntarily. Switching between the formal and informal sectors has been common in the largest economies in the region (Perry et al. 2007; Fiess, Fugazza, and Maloney 2008; Bosch and Maloney 2010). This has been suggested to reflect a high regard for self-employment in LAC relative to other regions, or a response to adverse employment and income shocks in the formal sector.

**Lower output growth.** In studies of a large number of LAC economies, informality has been negatively associated with growth, even after controlling for country characteristics (Loayza 1997; Loayza, Servén, and Sugawara 2010). However, studies at the country level are less conclusive. In Mexico, for instance, informality has been accompanied by slowing growth, yet in Brazil, falling informality has not necessarily been associated with higher GDP (Levy 2008; Ulyssea 2018).

**Lower productivity growth.** The informality literature on LAC has established a link between informality and aggregate productivity (Loayza et al. 2009). Linkages between informality and productivity have also been identified at the firm level. Informal firms in Brazil, for instance, have been less productive than formal firms (de Paula and Scheinkman 2011). In Paraguay, not only are informal firms less productive, but their low productivity has had negative spillovers to formal firms (Vargas 2015).

**Lower savings and access to finance for households and firms.** For workers and firms, there are negative financial implications of informality. Informal workers in Chile, for instance, have not been able to save as much as formal workers, and have had more less access to finance than formal firms (Schlcarek and Caggia 2015). In Brazil, poor access to finance was the key reason for informal firms being small and unproductive: their cost of capital was at least 1.3 times that of formal firms (de Paula and Scheinkman 2011). Similarly, in Ecuador, lower productivity and profitability in informal firms compared to formal firms was due in part to worse access to credit (Medvedev and Oviedo 2013). Across the region, rising informality has been associated with lower pension contributions (Vuletin 2008).

**Higher poverty and inequality.** Informality in LAC has also been associated with inequality and poverty, in part reflecting the wage gap between the informal and formal sectors. In Argentina, past poverty has been associated with current informal employment, and past informality has been associated with current poverty (Devincienti, Groisman, and Poggi 2015). The process of increasing formal-sector employment contributed significantly to the decline in inequality in Argentina and Uruguay during the 2000s (Beccaria, Maurizio, and Vazquez 2015; Aramante, Arim, and Yapor 2016). In Colombia, informal workers received lower wages than formal workers due not only to lower returns to their education, but also to educational mismatches (Herrera-Idárraga, López-Bazo, and Motellón 2015).

**Policy options**

Designing policies to address informality requires an understanding of its causes and characteristics. These vary considerably, even within individual countries in LAC (Perry et al. 2007; Alcarez et al. 2012; Garcia 2014; Fernandez and Villar 2016).

**Tax system.** Making tax policy less restrictive, by lowering tax rates or simplifying tax systems, could incentivize firms to become formal and increase demand for formal workers. Indeed, a large reduction in payroll tax rates in Colombia in 2012 reduced labor informality in the main metropolitan areas by about 7 percentages points (Fernandez and Villar 2016). The results of Brazil’s reduction and simplification of business taxes in Brazil in 1996 have been more ambiguous. Early studies found that the reform was associated with a significant increase in the incidence of formal firms, and that newly formalized firms achieved higher revenue and profits than those operating informally, although the impact of the reform on informality varied across economic sectors (Fajnzylber, Maloney, and Montes-Rojas 2011; Monteiro and Assuncção 2012). Recent studies have found no evidence of increased formalization as a result of the reform (e.g., Piza 2016).

**Labor market regulation.** Tighter labor inspections have been effective in reducing informality in the region,
BOX 2.3.1 Informality in Latin America and the Caribbean (continued)

through a variety of mechanisms. In Brazil, tighter enforcement of labor market regulations raised wages and output by improving the allocation of workers between the formal and informal sectors (Meghir, Narita, and Robin 2015). More frequent labor inspections in Brazil also induced some informal workers to become formal, albeit due to wage rigidity in the formal sector (Almeida and Carneiro 2012). Inspections were also more effective than incentives in convincing firms in Brazil to operate in the formal sector (De Andrade, Bruhn, and McKenzie 2013).

Other regulations. Policy reforms intended to ease barriers to entering the formal sector have had diverse outcomes for informality. A reform that simplified the process of opening a business in Mexico was successful in increasing the number of registered businesses (Bruhn 2011; Kaplan, Piedra, and Seira 2011). However, the reform had no impact on informality: the owners of the new businesses were former employees of formal firms, rather than informal workers. Financial deepening contributed to a reduction in informality in Uruguay, particularly for women and older workers (Gandelman and Rasteletti 2016). Finally, the emerging “gig” economy presents unique policy challenges that may require regulatory changes to smooth economic risks for “gig” workers (World Bank 2014, 2016, and 2018b).
Growth in the Middle East and North Africa (MENA) region is estimated to have improved to 1.7 percent in 2018, rebounding from a sharp deceleration a year earlier driven by oil production cuts in oil exporters and fiscal tightening (Figure 2.4.1). Growth among oil importers in the region has been picking up in the past two years and continues to garner positive momentum.

Although positive spillovers to the region via external demand are softening amid weaker global economic prospects, domestic factors continue to support growth. These include resilient domestic demand and policy reforms that are helping the region’s transition away from dependence on commodity exports and the public sector.

Growth in oil exporters is estimated to have recovered further in 2018. In the Gulf Cooperation Council (GCC), increased oil production and oil prices have eased the pressure for fiscal consolidation, enabled higher public spending, and supported higher current account balances. Non-oil sector activity in the GCC has largely been stable. Among non-GCC oil exporters, the contraction in Iran, where activity has been severely affected by U.S. sanctions, has been a significant drag on oil exporters’ and regional growth. Growth in other non-GCC oil exporters has been supported by public spending and investment.

Among oil importers, growth has been boosted by broad-based improvements in domestic demand; especially in Egypt, the largest country in this group. Egypt’s tourism and natural gas activity have continued to show strength, its unemployment rate has generally fallen, and policy reforms have contributed to an upgrade of its sovereign rating in August 2018. Fiscal adjustments in Egypt have also been steadily progressing. More generally, robust agricultural production and tourism have helped support growth of the oil importers in the region, especially Morocco and Tunisia. However, while international reserves have strengthened in Egypt, they have declined in other oil importers amid higher external vulnerabilities. Policy reforms in oil importers have helped enhance capacity of innovation among firms, but scope for improvement remains large, given fundamental challenges like the quality of electricity supply that
hinder the potential for private sector dynamism (Arezki et al. 2018). These reforms also address challenges in the labor market, including high youth unemployment (Purfield et al. 2018; Schiffbauer et al. 2015).

Headline inflation in Egypt remains near its end-2018 target level of 13 percent, despite edging up recently. Core inflation has been contained and the central bank has conducted two policy rate cuts in 2018, despite tighter external financing conditions. In Iran, inflation rose sharply in the second half of 2018, partly reflecting the depreciation of the rial in the parallel market relative to early 2018. Inflation is generally contained across the rest of the MENA region, averaging less than 3 percent in the GCC, and rising moderately in smaller oil importers.

Bond issuance across the region, particularly in the GCC, was robust at the start of 2018, but slowed around mid-year amid tighter external financing conditions and rising investor risk aversion. Although international financing conditions have become less favorable, investor confidence in the region were supported by efforts by GCC countries to diversify their economies as well as the inclusion of Saudi Arabia and Kuwait in the MSCI emerging market index in 2018. These developments kept the region somewhat insulated from the turmoil affecting many emerging markets and developing economies (EMDEs) in the second half of 2018.

**Outlook**

GDP growth is projected to rise slightly to 1.9 percent in 2019 and pick up to 2.7 percent later in the forecast horizon. Both oil exporters and oil importers will show steady growth improvement over the forecast period. Despite the headwinds from a less favorable international economic environment, which is expected to be marked by slower trade growth and tighter external financing conditions, domestic factors—in particular, policy reforms—continue to bolster growth in the region.

Among oil exporters, growth in 2019 is expected to improve slightly, supported by continued strengthening in the GCC that is partly offset by weakness among the large non-GCC oil exporters. Infrastructure investment and improved regulatory
environment are expected to support higher growth in GCC economies. Over the medium term, growth among the GCC economies will remain steady, underpinned by planned diversification programs, infrastructure projects, and medium-term reform plans (World Bank 2018a). Outside of the GCC, activity in Iran is expected to contract as U.S. sanctions kick in. Algeria’s growth is projected to moderate after its budgeted strong increase in government spending in 2018 tapers.

Among oil importers, growth is forecast to rise further, led by improvements among the larger economies. Investment will be further supported by reforms that strengthen the business climate and a pickup in domestic demand (World Bank 2018b). Tourism is expected to continue support activity in Egypt, Morocco, and Tunisia. Positive spillovers via external demand in the Euro Area are likely to taper somewhat amid the area’s weaker growth prospects. While smaller oil importers’ growth is envisioned to pick up slightly, these economies continue to grapple with elevated public debt, and in some cases, the challenges associated with the ongoing refugee crisis.

Medium-term growth forecasts for the MENA region are predicated on the assumption that there will not be a significant escalation of geopolitical conflicts and that there will be limited regional spillovers from conflict-ridden economies. Continued IMF and World Bank programs in many economies (e.g., Egypt, Morocco) are expected to provide a basis for needed structural adjustments (e.g., stronger fiscal management frameworks, higher public infrastructure quality), as well as steps to address the vulnerabilities associated with the informal sector (Chapter 3, Box 2.4.1). Financial reforms—such as newly approved bankruptcy laws in Saudi Arabia, Egypt, and the United Arab Emirates—should help relieve financial constraints in the corporate sector and support investor confidence (World Bank 2014a). Multilateral efforts to promote rural transportation, electricity access, and private sector financing (e.g., Gaza Solar Fund, Compact with Africa) are likely to enhance the business climate. Collectively, policy reforms across the region are expected to improve growth potential in the medium term (World Bank 2018c).

Risks

Risks are tilted to the downside. A diverse range of geopolitical risks have been associated with volatile sovereign default spreads and may amplify fragile economies’ significant income losses. Trade disputes involving major economies may weigh on external demand of both oil exporters and importers, while a more abrupt-than-expected increase of global interest rates may raise external debt vulnerabilities, especially if accompanied by sharp dollar appreciation.
derailed by a resumption of conflict. A substantial further escalation of U.S.-Iran tensions could have adverse spillovers to the rest of the region. Geopolitical factors, combined with uncertainty in oil production in response to these factors, also could trigger volatility in oil prices, all of which could further complicate or stall fiscal and current account adjustments in both oil exporters and importers.

Escalating global trade tensions may negatively impact the MENA region. Although direct trade with the United States is low, the region is tightly interconnected to the European Union and, to a lesser degree, China. A further rise of trade tensions could weigh heavily on the demand for exports from the MENA region (World Bank 2016). This risk may be slightly mitigated by deeper trade integration across regional neighbors (e.g., Djibouti-Ethiopia).

Rising interest rates in advanced economies may affect both oil exporters and importers. Interest rates in GCC economies have moved broadly in tandem with advanced economies’ policy rates, especially that of the U.S., and their net external assets positions are strong. Combined with the gradual nature of advanced economy monetary policy normalization, the dampening effect on borrowing costs and non-oil activity associated with higher interest rates have so far been modest. However, a more abrupt tightening of advanced economy monetary policy could weigh on capital flows to the region and dampen foreign investor confidence in large GCC economies, which had recently relaxed foreign investment restrictions (World Bank 2018c). High external debt denominated in foreign currency in some oil importers implies that they are also vulnerable to unexpected sharp appreciation of the U.S. dollar.

Post-election political uncertainty in some economies has led to delays in the formation of new governments, which may in turn delay policy reforms. Several oil importers depend critically on IMF/WB multi-year fiscal adjustments programs, which hinge on progress in the pace of reforms. Higher-than-expected oil prices may further challenge oil importers’ subsidies reforms and other fiscal adjustment programs. Among GCC economies, these risks may be reflected in fiscal reform slippages due to high oil prices or inefficient management of contingent liabilities and large investment projects.

On the upside, rising reconstruction spending in conflict affected economies (e.g., Iraq) may have positive spillovers to neighboring economies, supporting higher investment in physical infrastructure as well as soft infrastructure (e.g., broadband internet, mobile telephony) (Arezki et al. 2018).

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1 The current sanctions feature waivers from eight economies that import oil from Iran, as well as proposed Special Purpose Vehicles designed by the EU to facilitate transactions with Iran.
## TABLE 2.4.1 Middle East and North Africa forecast

(Real GDP growth at market prices in percent, unless indicated otherwise)

<table>
<thead>
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<td><strong>EMDE MENA, GDP</strong>1</td>
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<td>1.2</td>
<td>1.7</td>
<td>1.9</td>
<td>2.7</td>
<td>2.7</td>
<td>-1.3</td>
<td>-1.4</td>
<td>-0.5</td>
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<tr>
<td>(Average including countries with full national accounts and balance of payments data only)2</td>
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<tr>
<td><strong>EMDE MENA, GDP</strong>2</td>
<td>4.8</td>
<td>1.4</td>
<td>1.7</td>
<td>1.6</td>
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<td>2.7</td>
<td>-1.3</td>
<td>-1.7</td>
<td>-0.6</td>
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<td>GDP per capita (U.S. dollars)</td>
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<td>0.1</td>
<td>1.3</td>
<td>1.4</td>
<td>-1.3</td>
<td>-1.7</td>
<td>-0.6</td>
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<tr>
<td>PPP GDP</td>
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<td>1.8</td>
<td>1.6</td>
<td>2.8</td>
<td>2.8</td>
<td>-1.4</td>
<td>-1.8</td>
<td>-0.7</td>
</tr>
<tr>
<td>Private consumption</td>
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<td>2.2</td>
<td>2.2</td>
<td>1.5</td>
<td>2.3</td>
<td>2.3</td>
<td>-1.9</td>
<td>-1.9</td>
<td>-1.2</td>
</tr>
<tr>
<td>Public consumption</td>
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<td>2.3</td>
<td>3.4</td>
<td>4.1</td>
<td>1.9</td>
<td>2.1</td>
<td>-0.3</td>
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<td>Fixed investment</td>
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<td>-1.0</td>
<td>2.8</td>
<td>3.6</td>
<td>4.7</td>
<td>4.8</td>
<td>-2.3</td>
<td>0.0</td>
<td>-0.1</td>
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<tr>
<td>Exports, GNFS3</td>
<td>8.5</td>
<td>2.9</td>
<td>1.9</td>
<td>1.8</td>
<td>3.4</td>
<td>3.4</td>
<td>-1.8</td>
<td>-2.3</td>
<td>-0.6</td>
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<tr>
<td>Imports, GNFS3</td>
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<td>5.1</td>
<td>1.3</td>
<td>1.9</td>
<td>3.1</td>
<td>3.1</td>
<td>-2.4</td>
<td>-1.2</td>
<td>-0.3</td>
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<tr>
<td>Net exports, contribution to growth</td>
<td>4.2</td>
<td>-0.4</td>
<td>0.5</td>
<td>0.2</td>
<td>0.5</td>
<td>0.5</td>
<td>0.0</td>
<td>-0.7</td>
<td>-0.3</td>
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</table>

**Memo items: GDP**

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<tbody>
<tr>
<td>Oil exporters4</td>
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<td>-1.7</td>
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<td>GCC countries5</td>
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<td>2.2</td>
<td>0.2</td>
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<td>Iran</td>
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<td>-3.6</td>
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<td>1.1</td>
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<td>-7.7</td>
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<td>Oil importers6</td>
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<td>3.9</td>
<td>4.1</td>
<td>4.2</td>
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<td>4.7</td>
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<td>-0.2</td>
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<td>Egypt</td>
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<td>4.7</td>
<td>5.5</td>
<td>5.7</td>
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<tr>
<td><strong>Fiscal year basis7</strong></td>
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<td>5.3</td>
<td>5.6</td>
<td>5.8</td>
<td>6.0</td>
<td>0.3</td>
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</tbody>
</table>

Notes: e = estimate; f = forecast. EMDE = emerging market and developing economy. World Bank forecasts are frequently updated based on new information and changing (global) circumstances. Consequently, projections presented here may differ from those contained in other Bank documents, even if basic assessments of countries’ prospects do not differ at any given moment in time.

1. GDP at market prices and expenditure components are measured in constant 2010 U.S. dollars. Excludes Libya, Syria, and Yemen due to data limitations.
2. Aggregate includes all countries in notes 4 and 6 except Djibouti, Iraq, Qatar, and West Bank and Gaza, for which data limitations prevent the forecasting of GDP components.
3. Exports and imports of goods and non-factor services (GNFS).
4. Oil exporters include Algeria, Bahrain, Iran, Iraq, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.
5. The Gulf Cooperation Council (GCC) includes Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.
6. Oil importers include Djibouti, Egypt, Jordan, Lebanon, Morocco, Tunisia, and West Bank and Gaza.
7. The fiscal year runs from July 1 to June 30 in Egypt; the column labeled 2017 reflects the fiscal year ended June 30, 2017.
For additional information, please see www.worldbank.org/gep.
### TABLE 2.4.2 Middle East and North Africa economy forecasts

(Real GDP growth at market prices in percent, unless indicated otherwise)

<table>
<thead>
<tr>
<th>Country</th>
<th>2016</th>
<th>2017</th>
<th>2018e</th>
<th>2019f</th>
<th>2020f</th>
<th>2021f</th>
<th>Percentage point differences from June 2018 projections</th>
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<td>Algeria</td>
<td>3.2</td>
<td>1.4</td>
<td>2.5</td>
<td>2.3</td>
<td>1.8</td>
<td>1.8</td>
<td>-1.0</td>
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<td>Bahrain</td>
<td>3.2</td>
<td>3.9</td>
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<td>2.8</td>
<td>1.5</td>
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<td>Djibouti</td>
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<td>Egypt</td>
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<td>4.7</td>
<td>5.5</td>
<td>5.7</td>
<td>5.9</td>
<td>6.0</td>
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<td><strong>Fiscal year basis</strong></td>
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<tr>
<td>Iran</td>
<td>13.4</td>
<td>3.8</td>
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<td>-3.6</td>
<td>1.1</td>
<td>1.1</td>
<td>-5.6</td>
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<tr>
<td>Iraq</td>
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<td>1.9</td>
<td>6.2</td>
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<td>Kuwait</td>
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<td>1.0</td>
<td>1.3</td>
<td>1.5</td>
<td>1.5</td>
<td>-1.0</td>
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<td>3.0</td>
<td>-0.5</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>1.7</td>
<td>-0.9</td>
<td>2.0</td>
<td>2.1</td>
<td>2.2</td>
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<td>3.2</td>
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<td>1.7</td>
<td>1.9</td>
<td>1.9</td>
<td>1.9</td>
<td>-0.8</td>
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Notes: e = estimate; f = forecast. World Bank forecasts are frequently updated based on new information and changing (global) circumstances. Consequently, projections presented here may differ from those contained in other Bank documents, even if basic assessments of economies’ prospects do not significantly differ at any given moment in time.

1. GDP at market prices and expenditure components are measured in constant 2010 U.S. dollars. Excludes Libya, Syria, and Yemen due to data limitations.

2. The fiscal year runs from July 1 to June 30 in Egypt; the column labeled 2017 reflects the fiscal year ended June 30, 2017.

For additional information, please see www.worldbank.org/gep.
**BOX 2.4.1 Informality in the Middle East and North Africa**

Middle East and North Africa’s (MENA’s) informal sector output, on average, amounts to nearly one quarter of official GDP. However, there is wide heterogeneity across the region. Informality is high among non-GCC economies, the young population, as well as the agricultural workforce. Levels of informality in the region are closely linked to its low private sector vibrancy, limited economic diversification, and sizeable agricultural sectors. Policy options that reduce regulatory barriers, streamline public sector efficiency, and enhance workforce skills can help improve access to the formal sector and unlock the potential from a relatively young informal workforce.

**Introduction**

The extent of informal output in the Middle East and North Africa region amounts to nearly one quarter of official GDP during 2008-16, lower than in other EMDE regions. However, there is considerable heterogeneity within the region, with higher informality among non-Gulf Cooperation Council (GCC) economies. Moreover, although the share of informal activity in MENA has been steady over the past two decades, perceptions of informality in the MENA region have risen. Employment informality is concentrated among agricultural workers and the young, which poses important challenges for MENA’s ongoing transition to a more diversified economic structure and jobs-oriented growth.

Against this backdrop, this Box examines the following questions:

- How has informality evolved in the Middle East and North Africa?
- What are the macroeconomic and social correlates of informality?
- What policy options are available to address challenges associated with informality?

**Evolution of informality**

On average during 2008-2016, informal sector output in MENA amounted to about one quarter of official GDP, lower than other EMDE regions (Figure 2.4.1.1, Chapter 3). During the same period, about 24 percent of the labor force are reported to be self-employed.

**Broadly stable over time.** The extent of informality in MENA appears to have remained roughly unchanged over the past two decades, although survey-based measures of informality suggest that perceived informality may have increased. The persistence of informality is linked to the long-standing economic structure of MENA economies, including dependence on commodities production in oil exporters, limited private sector, low labor mobility, and lack of economic diversification.

**Regional heterogeneity.** The moderate average level of informality masks disparate trends within the region. The share of informal output in GCC economies is about 8 percentage points less than in non-GCC economies (18 percent and 26 percent, respectively), and the share of self-employment to total employment in non-GCC economies is about 10 times that of the GCC.

**Correlates of informality**

Informality in MENA has reflected a number of economic and development challenges. These ranged from limited private sector activity to conflict situations. Large informal sectors have been associated with lower productivity, low wages, and less inclusive growth. Although informality can provide helpful employment opportunities where the formal sector features distortions and governance is poor, the structural, policy and institutional features that foster informality in MENA poses challenges for the region’s efforts to diversify and reduce its reliance on commodities production and the public sector.

**Economic structure.** Low informality in the GCC reflects high reliance on expatriate workers and high public employment for nationals (World Bank 2018a). In the non-GCC economies, informal workers constitute the vast majority of the employed in the agriculture and mining sectors. Across countries, a higher share of agricultural employment had been associated with higher informality (ADB 2016, World Bank 2004 and 2014b, Elshamy 2015, UN 2013). Urban workers were also 5-12 percent less likely to be informally employed than rural workers (Angel-Urdinola and Tanabe 2012), altogether consistent with the negative correlation between stage of development and informality.

**Governance and business climates.** Informality in MENA is closely linked to governance quality, which has been negatively correlated with informality (Elbadawi and Loayza 2008). In non-GCC economies, where informality is higher, institutional quality indicators also tend to be markedly lower than in the GCC. This issue is further compounded by poor public services and burdensome...
FIGURE 2.4.1.1 Informality in MENA

MENA’s informal sector output comprises nearly one quarter of official GDP, lower than other EMDE regions. However, perceptions of informality in MENA has risen somewhat while they have declined in the median EMDE region. Institutional quality is generally lower in non-GCC MENA economies, where informality is higher.

A. DGE and MIMIC based informal activities

B. Self-employment

C. Perceived informal activities and attitudes towards informality

D. Institutional quality: MENA

Sources: World Development Indicators, Organization for Economic Co-operation and Development (OECD), country’s national statistical bureaus and offices, Inter-American Development Bank, Eurostat, Haver, World Economic Forum, World Bank Doing Business and World Governance Indicators.

Notes: Blue bars show simple averages of the informal economy of the region. Red markers show the median average of all EMDEs and the vertical lines denote interquartile range of all EMDEs. GCC denotes Gulf Cooperation Council.

A. Both DGE and MIMIC estimates measure the informal output in percent of official GDP. Includes 6 GCC economies and 9 non-GCC economies.

B. Self-employed is the share of self-employment in total employment. Includes 6 GCC economies and 11 non-GCC economies.

C. WEF index is the average responses at the country-year level to the following question (surveyed by World Economic Forum): “In your country, how much economic activity do you estimate to be undeclared or unregistered? (1=Most economic activity is undeclared or unregistered; 7= Most economic activity is declared or registered).” WEF indices are re-ordered (i.e. 1= Most economic activity is undeclared or unregistered; 7= Most economic activity is declared or registered) so that a higher average at the country level indicates a larger informal economy. The index does not use data for year 2004-2005 due to inconsistency in survey methods. Includes 6 GCC economies and 8 non-GCC economies.

D. All measures are unweighted averages and are taken from the latest year available. The first three institutional measures are taken from World Bank’s World Governance Indicators (2017), with a higher value indicating better institutional quality in year 2016. The “Ease of doing business” (DB 2018) and “Ease of paying taxes” (DB 2017) are taken from World Bank’s Doing Business database and measured as “Distance to Frontier”, with a higher value indicating an easier environment for businesses.
regulatory environment, which raise the costs of operating in the formal sector (World Bank 2016).

**Conflict.** In a number of countries (e.g. Syrian Arab Republic), wars and violent conflicts have severely limited the number of public sector jobs, which also caused workers to shift into the informal sector for lack of alternatives (Devraj and Mottaghi 2017, Ianchovichina and Ivanic 2014). In neighboring countries of fragile and war-torn economies (e.g., Jordan, Lebanon), the massive
Within small and medium-sized enterprises in MENA, a 1 percentage point increase in the share of informal workers was associated with a 3 percentage point lower wage relative to average wages (Elbadawi and Loayza 2008).

Informal business operations may also imply lower contributions to government revenues, while possibly adding to resource utilization on public services, such as infrastructure (Galal 2005).

Influx of refugees—many of whom are unregistered—has boosted the informal sector, where jobs tend to be labor intensive and low skilled.

Lower productivity. High informality has been associated with lower labor productivity and more limited export potential, partly reflected in its relatively low informal share of output compared to that of employment (Box 3.2., Gatti et al. 2014, Elbadawi and Loayza 2008). Hindrances in the formal sector, including regulatory barriers to entry and burdensome taxation, divert otherwise productive firms and workers to enter and remain in the informal sector where productivity is lower.1 Moreover, based on enterprise survey data, a sizable portion of firms in oil importers (e.g., Tunisia, Morocco) consider competitors’ practices in the informal sector as hindering their own business operations (Figure 2.4.1.2, World Bank 2004).2

Restrictive market access. Informal workers in the region tend to be concentrated in small and medium-sized firms, which constitute more than 90 percent of MENA’s enterprises (Purfield et al. 2018). Although these firms can include young start-ups with high entrepreneurial potential, they have tended to be local market-oriented, with limited regional or global market access (World Bank 2004, 2016). Among these enterprises, a 1 percentage point increase in the share of informal workers was associated with a 6-percentage-point lower output share for non-local markets (Elbadawi and Loayza 2008).

Wage differentials. Informality presents a source of employment but also income vulnerability among women and the youth, challenging efforts at poverty reduction. The wage gap between informal and formal workers (i.e., formality premium) has been higher for women than men. For example, in Egypt, the formal wage premium was about 30 percent for males but more than 50 percent for females (Gatti et al. 2014). Informality has been higher among the youth, in part reflecting the entrance of workers into public sector jobs at a later age (Elbadawi and Loayza 2008, Angel-Urdinola and Tanabe 2012). In Morocco, the formal wage premium among the youth was more than 50 percent (Gatti et al. 2014). Further, returns to education have been lower in the informal sector than...
the formal sector, which has discouraged skills acquisition (Angel-Urdinola and Tanabe 2012).³

Less inclusive growth. High informality in the region is associated with lower levels of educational attainment and enrollment, as a majority of informal workers are school dropouts and have not received a secondary education (Elshamy 2015). High informality is associated with limited access to health care and legal services, especially in fragile areas (Loayza and Wada 2010; Cho 2011). Workers in the informal sector have also reported harsher job conditions and poorer work safety, and among young informal workers, lower levels of job satisfaction (Gatti et al. 2014). These social disparities have the potential to slow reform momentum in the region by constraining consensus-building.

Policy challenges

Informality in non-GCC MENA countries, where informality is widespread, reflects deep-rooted economic structures. These economies have the highest youth unemployment rate and lowest female labor force participation rates among all EMDE regions. Public sector employment constitutes more than 15 percent of total employment, about twice the EMDE average (IMF 2018). Multi-pronged policies can aim to create a more vibrant private sector and strengthen human capital of workers, part of building a new social contract in the region (Devarajan and Mottaghi 2015). Policies targeting specific vulnerable groups can lessen the negative externalities associated with informality.

Fiscal reforms. Burdensome taxation has been one of the most important constraints to formal sector firms in MENA (Gatti et al. 2014). In non-GCC MENA economies where informality is more pervasive, reforms to align tax systems with international best practices and strengthen enforcement could further attract informal firms to productive formal activity while also raising revenue collection. Such reforms may include reducing excessive corporate tax rate burden and enhancing revenue collection through harmonized electronic filing systems (e.g., Morocco) or the introduction of a value-added tax (e.g., Egypt).⁴

Access to finance. Access to finance is a larger obstacle to doing business in MENA than in most other EMDE regions (Figure 2.4.1.3; Farazi 2014). Boosting access to finance, including through a stronger legal framework and improved credit protection regimes, can help promote private sector activity by increasing transparency of firms to investors and facilitating investment (Straub 2005). A number of economies in MENA have recently adopted policies in this area, such as new insolvency resolution laws in Egypt, Saudi Arabia, and the United Arab Emirates. The adoption of financial technologies (Fintech), such as innovations that automate financial transactions, can also facilitate access to finance.

Regulatory effectiveness. Beyond its large size, public sector effectiveness and regulatory quality in non-GCC MENA countries have deteriorated in the last decade. Corruption is cited among the biggest hindrances to MENA firm operations and increases incentives for firms and workers to operate informally (World Bank 2016). Together with low regulatory efficiency, it reduces the effectiveness of labor market regulations and enforcement, and allows firms to stay informal (Gatti et al 2014). Policies that reduce regulatory costs help increase mobility of MENA firms between the informal and formal sector, while those that strengthen property rights may assist the rural or agricultural-sector populations to access financing (e.g., enabling collateralized loans). Policies to promote entrepreneurial activities, such as easing of business licensing requirements, can also facilitate entry of informal workers into more productive jobs in the formal sector.

Education. Policies that encourage higher education and expand job training can be especially relevant for younger workers, more than half of whom are informally employed, to facilitate their entry into more productive formal jobs (Angel-Urdinola and Tanabe 2011). Training programs may be particularly effective if coupled with mechanisms to increase women’s mobility, which is constrained in the region, and offer a combination of soft and hard skills. Training is also more effective if extended to areas (e.g., rural) where educational levels are lower, as MENA region’s training programs tended to serve higher income and more educated individuals (Angel-Urdinola, Semlali, and Brodmann 2010). A holistic approach that combines job training with job creation efforts, such as through public-private sector programs, can also be effective; given higher unemployment rates for university graduates than low-skilled workers in the region (World Bank 2018e). These programs may also help boost earnings of informal workers (Steel and Snodgrass 2008).

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³ Evidence from Egypt, for example, suggests that a worker in the formal sector who has completed 5 years of education earns comparable wages to those of an informal worker with 12-14 years of education (Angel-Urdinola and Tanabe 2012).

⁴ Evidence from Egypt suggests that lowering the corporate tax burden can be associated with higher revenues through a higher tax base (Gatti et al. 2014).
Recent developments

Growth in South Asia accelerated to an estimated 6.9 percent in 2018 from 6.2 percent the previous year, with domestic demand strengthening in India as temporary disruptions fade and the benefits from ongoing structural reforms start to materialize (Figure 1A). The recovery was in line with expectations, and recent high frequency data – including purchasing managers’ indices and industrial production – have broadly remained solid (Figure 1B and 1C).

Throughout the region, private consumption remained robust in 2018 while investment picked up. The recovery in investment was supported by the fading of a number of temporary disruptions, a revival of credit growth, and ongoing infrastructure projects. Strong domestic demand boosted imports, while exports remained subdued amid weak global trade sentiment, causing current account deficits to widen. (World Bank 2018c).

India’s growth accelerated to an estimated 7.3 percent in FY2018/19 (April to March) as economic activity continued to recover with strong domestic demand. While investment continued to strengthen amid GST harmonization and a rebound of credit growth, consumption remained the major contributor to growth (Ahmad et al. 2018).

Excluding India, regional growth moderated slightly in 2018. Pakistan’s GDP (factor cost) is estimated to have grown 5.8 percent in FY2017/18 (July 16 to July 15), with solid contributions from consumption and investment. Activity was supported by strengthening in the agricultural and industrial sectors, and a sustained acceleration in services.

In Bangladesh, growth was broad-based, remaining strong at an estimated 7.9 percent in FY2017/18 (July 1 to June 30). Private consumption was the main driver of growth, supported by strong remittance inflows. Net exports turned negative because of rising food and capital machinery imports and weak exports (World Bank 2018a).

In Sri Lanka, activity accelerated to an estimated 3.9 percent in 2018 on the back of a recovery in the agriculture and services sectors. In Nepal, economic activity remained solid with a 6.3 percent growth in FY2017/18 (April to March). Less favorable monsoons led to weakness in agricultural activity, but this was offset by recovered remittances and robust industrial sector

Note: This section was prepared by Temel Taskin. Research assistance was provided by Ishita Dugar and Brent Harrison.
growth, particularly for manufacturing activities (Figure 1D, World Bank 2018b).

Investment and services remained the major contributor to economic activity in Bhutan and the Maldives. In Bhutan, hydropower and other infrastructure projects supported investment, and GDP expanded by an estimated 4.6 percent in FY2017/18 (July 16 to July 15). Maldives’ GDP accelerated to an estimated 8.0 percent in 2018, reflecting strength in tourism and construction. Growth in Afghanistan is estimated to have edged down to 2.4 percent. Although activity was supported by agriculture and services, subdued business confidence and security challenges continued to weigh on growth.

There were some signs of rising inflation pressure across the region, and both India and Pakistan raised rates in 2018 to counter the effects of currency depreciation, rising energy prices, and domestic capacity constraints (Figure 1E).

Sovereign bond yields surged in the region last year (Figure 1F). Fiscal consolidation stalled owing to elections in several countries, contributing further to the region’s high levels of government debt. In India, the government deficit was higher than planned, reflecting lower-than-expected revenues from telecom spectrum auctions and low dividends from public sector enterprises (World Bank 2018d). The central government is budgeting a reduction in the fiscal deficit in next fiscal year. Pakistan’s fiscal deficit rose to 6.6 percent of GDP last year, well above the government’s target of 4.1 percent, as tax collection fell short of expectations.

External vulnerabilities are also rising in the region. In Sri Lanka and to some extent in Pakistan, external debt is sizable and current account deficits have deteriorated considerably. Recent currency pressures have eroded Pakistan’s foreign exchange reserves significantly—they currently amount to only around two months of imports.

**Outlook**

The outlook for South Asia is robust, despite the financial stress that has affected a number of EMDEs and continued trade disputes. Regional growth is expected to accelerate in 2019, to 7.1 percent (Figure 2A). Economic activity will be underpinned by strengthening investment and
robust consumption. While exports and imports will be held back owing to slowing global trade, the region’s relatively low exposure to international trade will mitigate the impact of this slowdown on the regional outlook. India’s GDP is forecast to grow by 7.3 percent in FY2018/19 and 7.5 percent thereafter, in line with June forecasts. Private consumption is projected to remain robust and investment growth is expected to continue as the benefits of recent policy reforms begin to materialize and credit rebounds. Strong domestic demand is envisioned to widen the current account deficit to 2.6 percent of GDP next year. Inflation is projected to rise somewhat above the midpoint of the Reserve Bank of India’s target range of 2 to 6 percent, mainly owing to energy and food prices.

In the rest of the region, economic activity will average 5.6 percent over the forecast horizon. In Pakistan, macroeconomic imbalances weigh on growth outlook. Pakistan is expected to face financing needs due to the large current account and fiscal deficits combined with low international reserves (Figure 2E). GDP growth is projected to decelerate to 3.7 percent in FY2018/19, with financial conditions tightening to help counter rising inflation and external vulnerabilities. Activity is projected to rebound and average 4.4 percent over the medium term with support from stabilizing macroeconomic conditions (World Bank 2018c).

In Bangladesh, robust economic activity is expected to be sustained. GDP growth is forecast at 7.0 percent in FY2018/19 and is expected to decelerate only slightly over the forecast horizon. Activity will be supported by strong private consumption and investment on the back of infrastructure projects. Net exports are projected to contribute negatively to GDP growth as imports outpace exports in response to strong domestic demand.

In Sri Lanka, last year’s recovery from adverse weather conditions is expected to continue in 2019, with 4.0 percent GDP growth. Activity will be supported by robust domestic demand as consumption rebounds following natural disasters, and investment is boosted by infrastructure projects. Nepal’s strong post-earthquake momentum is expected to moderate—GDP growth is forecast to decelerate to 5.9 percent in FY2018/19. Activity will be underpinned by strong infrastructure investment and consumption.

**FIGURE 2.2.2 SAR: Outlook and risks**

Economic activity is projected to remain strong. Possible fiscal slippages could further worsen already-high public debt positions. Non-performing assets remain high despite recent efforts to improve balance sheet quality of financial sector. External imbalances pose a risk on the outlook. Major economies in the region have tightened their monetary stance to stabilize inflation and mitigate external risks.
In Bhutan and the Maldives, activity will remain reliant on construction and tourism. Bhutan’s growth is projected to accelerate to 7.6 percent 2018/19, supported by ongoing infrastructure projects and rising tourism. In the Maldives, growth is expected to moderate to 6.3 percent in 2019 as construction activity returns to long-term averages, and capital investment projects gradually slowdown. Afghanistan’s economy is expected to remain subdued, expanding 2.7 percent in 2019, as a result of security challenges ahead of elections, declining business confidence, and worsening drought conditions.

In South Asia, a large proportion of activity is informal, which may constrain productivity, wages, and access to social protection systems (Kanbur 2014). Investing in education and skills, improving the business environment by enhancing regulatory frameworks and boosting the quality of government services provided to formal firms are among the policy measures which can encourage formal activity (Box 2).

**Risks**

The risks to the outlook are tilted downside. Domestic vulnerabilities are being exacerbated by fiscal slippages and rising inflation, escalation in political uncertainty, and the possibility of delays in needed structural reforms to address weaknesses in balance sheets of banks and non-financial corporates. Key external risks include a further deterioration in current accounts and a faster-than-expected tightening of global financing conditions.

South Asian economies have high levels of public debt in general. Fiscal slippages could further worsen already-precarious public debt positions and result in a costly rise in already-elevated interest payments (Figure 2B).

The upcoming election cycle next year elevates political uncertainty in the region. The challenging political environment could adversely affect the ongoing reform agenda and economic activity in some countries (e.g. Afghanistan, Sri Lanka).

In South Asia, non-performing assets (NPAs) are still high despite recent measures taken to improve the recognition of these assets (Figure 2C). Especially, public sector banks in India, which represent roughly 70 percent of the banking sector assets, still report low profitability and high NPAs. Credit expansion could be limited in some major South Asia economies unless further steps are taken to deal with financial and corporate balance sheets.

On the external front, the region has relatively low exposure to international trade, which limits the benefits from trade over the long term. However, the low exposure also suggests that it could be more insulated from the effects rising trade protectionism than other regions. Moreover, the region may even benefit from trade diversion amid the recent dispute between some major economies (World Bank 2017b).

Persistent current account deficits and high levels of external debt make the region more vulnerable to a faster-than-expected tightening of global financial conditions (Figure 2F). The realization of these domestic or external risks could weaken investor confidence and result in capital outflows, currency depreciation leading to rising external debt, a tightening of domestic financing conditions, and a slowdown in regional growth (Kose et al. 2017; Eichengreen and Gupta 2015).

South Asia is one of the most vulnerable regions to natural disasters (World Bank 2017a). In recent years, the number of affected people and geographical areas from natural disasters such as drought, floods, and earthquakes have risen in the region. Increasingly common natural disasters could disrupt infrastructure, agricultural output, and economic activity in general.
TABLE 2.5.1 South Asia forecast summary

(Real GDP growth at market prices in percent, unless indicated otherwise)

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<tr>
<th></th>
<th>2016</th>
<th>2017</th>
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<th>2019f</th>
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<td>7.1</td>
<td>7.1</td>
<td>7.1</td>
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<td>(Average including countries with full national accounts and balance of payments data only)3</td>
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<tr>
<td>EMDE South Asia, GDP3</td>
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<td>6.9</td>
<td>7.1</td>
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<td>5.9</td>
<td>6.0</td>
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<td>6.9</td>
<td>7.1</td>
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<td>5.6</td>
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Notes: 1. Historical data is reported on a market price basis. National income and product account data refer to fiscal years (FY) for the South Asian countries, while aggregates are presented in calendar year (CY) terms. The fiscal year runs from July 1 through June 30 in Bangladesh, Bhutan, and Pakistan, from July 16 through July 15 in Nepal, and April 1 through March 31 in India.
2. National income and product account data refer to fiscal years (FY) for the South Asian countries with the exception of Afghanistan, Maldives, and Sri Lanka, which report in calendar year (CY). The fiscal year runs from July 1 through June 30 in Bangladesh, Bhutan, and Pakistan, from July 16 through July 15 in Nepal, and April 1 through March 31 in India.
3. Sub-region aggregate excludes Afghanistan, Bhutan, and Maldives, for which data limitations prevent the forecasting of GDP components.
4. Exports and imports of goods and non-factor services (GNFS).

Percentage point differences from June 2018 projections

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<th>2019f</th>
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Memo Items: GDP

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Notes: 1. Historical data is reported on a market price basis. National income and product account data refer to fiscal years (FY) for the South Asian countries, while aggregates are presented in calendar year (CY) terms. The fiscal year runs from July 1 through June 30 in Bangladesh, Bhutan, and Pakistan, from July 16 through July 15 in Nepal, and April 1 through March 31 in India.
2. National income and product account data refer to fiscal years (FY) for the South Asian countries, while aggregates are presented in calendar year (CY) terms. The fiscal year runs from July 1 through June 30 in Bangladesh, Bhutan, and Pakistan, from July 16 through July 15 in Nepal, and April 1 through March 31 in India.
3. Sub-region aggregate excludes Afghanistan, Bhutan, and Maldives, for which data limitations prevent the forecasting of GDP components.
4. Exports and imports of goods and non-factor services (GNFS).

For additional information, please see www.worldbank.org/gep.

TABLE 2.5.2 South Asia country forecasts

(Real GDP growth at market prices in percent, unless indicated otherwise)

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<th>2019f</th>
<th>2020f</th>
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Notes: 1. Historical data is reported on a market price basis. National income and product account data refer to fiscal years (FY) for the South Asian countries, while aggregates are presented in calendar year (CY) terms. The fiscal year runs from July 1 through June 30 in Bangladesh, Bhutan, and Pakistan, from July 16 through July 15 in Nepal, and April 1 through March 31 in India.

Percentage point differences from June 2018 projections

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Fiscal year basis1

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<td>5.9</td>
<td>6.0</td>
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<td>Pakistan (factor cost)</td>
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<td>4.2</td>
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Notes: 1. Historical data is reported on a market price basis. National income and product account data refer to fiscal years (FY) for the South Asian countries, while aggregates are presented in calendar year (CY) terms. The fiscal year runs from July 1 through June 30 in Bangladesh, Bhutan, and Pakistan, from July 16 through July 15 in Nepal, and April 1 through March 31 in India.

For additional information, please see www.worldbank.org/gep.
BOX 2.5.1 Informality in South Asia

South Asia’s share of informal employment is the largest among EMDE regions, despite a below-average share of informal output. Heavy tax burdens, above-average corruption, and low government effectiveness have contributed to high employment informality. Informal employment is concentrated among low-skilled, young, female and rural workers. The sizable informal sector is associated with lower productivity, lower government revenues, and higher poverty in the region. Policy options to address these challenges include investing in human capital in the form of training programs and improving access to finance.

Introduction

South Asia (SAR) is the EMDE region with the highest average share of informal employment among EMDE regions, despite a below-median and declining share of informal output. Nonetheless, there is significant heterogeneity in the share of employment as well as output informality among South Asian countries.

Against this backdrop, this Box examines the following questions:

- How has informality evolved in South Asia?
- What have been the macroeconomic and social correlates of informality?
- What policy options are available to address challenges associated with informality?

Evolution of informality

Informality in SAR. In aggregate, output informality in the SAR region is below the average of other EMDE regions—the size of informal sector relative to official GDP was on average 30 percent in South Asia compared with 35 percent in average EMDE during 2008-2016 (Figure 2.5.1). During the same period, 96 percent of workers lacked pension coverage and 63 percent were self-employed.

Evolution of informality in SAR. Output informality declined from 37 percent in 1990s to 32 percent in the 2010s, broadly in line with the decline in informality in other EMDEs. However, labor informality over the same period persisted or rose depending on the measure of informality. For example, the share of the labor force without pension coverage rose from 88 percent to 96 and self-employment remained around 63 percent.

Regional heterogeneity. The extent of informality varies substantially across countries in South Asia. Sri Lanka had the highest degree of informality (output in the informal sector is about 40 percent of total output) in 2016 and India had the lowest share (below 20 percent). However, this ranking is reversed using labor market indicators of informality: Sri Lanka has the lowest share of self-employment (42 percent) and India the highest (76 percent) as of 2016. These differences are reflected in lower labor productivity in the informal sector (relative to the formal sector) in India than in Sri Lanka.

Correlates of informality

Business climates. Costs to doing business—such as tax burdens, labor regulation, and cost of starting business—are among the main drivers of informality identified in the empirical literature (Goldar and Aggarwal 2012; FICCI 2017). Over the past decade, SAR has suffered from greater corruption and weaker government effectiveness than other EMDE regions (Figure 2.5.2). Tax burdens and indicators of ease of doing business have also been less favorable than in the average EMDE (World Bank 2017c). Among costs to doing business, heavy tax burdens were particularly strongly associated in India and Pakistan with a larger fraction of firms operating unregistered (Ghani, Kerr, O’Connell 2013; Waseem 2013).

Worker characteristics. South Asia’s informal labor force consists predominantly of low-skilled, female, rural, and young workers (Williams, Shahid, and Martinez 2015; Bahadur and Parajuli 2014; Gunatikala 2008; Goldar and Agarwal 2012). The intensity of informal employment in South Asia reflects a lack of formal jobs and skills, as well as a preference towards self-employment (Williams, Shahid, and Martinez 2015; Gulzar, Junaid, and Haider 2010; Arby, Malik, and Hanif 2010). This means that informal firms are usually small, agricultural, and consist mostly of self-employed workers (Heintz 2012; FICCI 2017).

Lower productivity and incomes. In South Asia, informal workers had lower earnings, fewer skills, and less access to social protection systems; this has been reflected in lower productivity and higher poverty (Likhi 2013; Kanbur 2017; Chen 2005). Informal employment among underrepresented groups in labor markets, such as women and the young, has grown over the past decade and constrained these groups’ income security. Low earnings and limited options available to informal workers constrain their benefit from economic growth, which means that growth has been less inclusive than otherwise (Heintz 2012; ADB 2016). Conversely, in India, an easing of labor market restrictions and measures to foster gender
FIGURE 2.5.1.1 Informality in South Asia

South Asia’s share of informal employment is the largest among EMDE regions, despite a below-average share of informal output.

A. Output informality

B. Labor informality

C. Survey-based perceived informality

D. Informality in SAR

A. DGE = dynamic general equilibrium model. MIMIC = multiple indicators multiple causes model. Both DGE and MIMIC estimates measure the informal output in percent of official GDP.
B. Labor force without pension is the fraction of the labor force that doesn’t contribute to a retirement pension scheme, which is derived from the original data on pension coverage obtained from WDI. Self-employed is the share of self-employment in total employment.
C. WEF = World Economic Forum. WVS = World Values Survey. WEF index is the average responses at the country-year level to the following question (surveyed by World Economic Forum): “In your country, how much economic activity do you estimate to be undeclared or unregistered? (1=Most economic activity is undeclared or unregistered; 7 = Most economic activity is declared or registered).” WEF indices are re-ordered (i.e. 1= Most economic activity is declared or registered, 7= Most economic activity is undeclared or unregistered) so that a higher average at the country level indicates a larger informal economy. The index does not use data for year 2004-2005 due to inconsistency in survey methods. The World Value Survey asks whether respondents can justify cheating on taxes, with responses ranging from 1 (never justifiable) to 10 (always justifiable). The average responses at the country-year level are used as a measure for attitudes towards informality (or tax morality, Oviedo et al. 2009), labeled as WVS. A higher average at the country level implies that people find cheating on taxes more justifiable.
D. SEMPS stands for self employment share. Both DGE and MIMIC estimates measure the informal output in percent of official GDP. Last observation is 2016.
Policy challenges

In South Asia, informal employment is concentrated among young, low-skilled, female, and rural workers. Policies targeting training and education of these groups, especially in rural areas, could help their transition to formal employment (Khera 2016).

There is significant room to improve the ease of doing business in South Asia. This could reduce informality by reducing the cost of entry and cost of operating in formal sector. Measures to reduce the time, cost, and complexity of registration would also improve the business climate and foster growth (FICCI 2017).

High quality public services can also provide an incentive for informal firms to become formal in order to access equality—such as increasing female education and strengthening law enforcement against gender discrimination—have been associated with stronger growth as well as larger formal employment (Khera 2016; Goldar and Aggarwal 2012).

Lower government revenues. Large informal sectors—in addition to other factors such as inefficient tax administration and narrow tax base—weigh on tax revenues in South Asian economies (Cevik 2016; Ilzetzki and Lagakos 2017). On average, tax revenues as a percent in GDP have historically been below the EMDE average. The lack of tax revenues ultimately affects the ability of governments to fund its infrastructure investment, social programs, etc., and therefore limiting their ability to tackle poverty and inequality (Chapter 3).
BOX 2.5.1 Informality in South Asia (continued)

these services. Enhanced monitoring and enforcement, including of tax regulations, could help discourage informality (Ilzetzki and Lagakos 2017). Also, in India the recent introduction of a Goods and Services Tax and steps toward demonetization are expected to encourage a shift from the informal to the formal sector.

South Asia’s self-employed, which account for about [80] percent of informally employed, have limited access to financial resources that could finance growth- or productivity-enhancing investment (Ghani, Kerr, O’Connell 2013). Greater access to credit for the self-employed and household enterprises could help them grow into formality (Beck and Hoseini 2014). Microfinance can be an effective instrument for providing financial access to informal firms, as many of them are self-employed enterprises (ILO 2013; Likhi 2013).
The recovery in Sub-Saharan Africa has stalled. Growth in the region is estimated at 2.7 percent in 2018, significantly slower than expected, partly due to weaknesses in Nigeria, South Africa, and Angola. Growth is foreseen to rise to 3.4 percent in 2019 and 3.7 percent in 2020-21, as reduced policy uncertainty help support a cyclical rebound in these large economies. However, per capita income growth will remain modest, and progress in poverty reduction limited. Risks to the outlook are tilted to the downside. Key external risks include an unexpectedly sharp decline in commodity prices, an abrupt tightening of global financial conditions, and escalating trade tensions involving major economies. Domestic risks pertain to fiscal slippage, domestic conflicts, and adverse weather conditions.

Recent developments

The recovery in Sub-Saharan Africa (SSA) continued in 2018, but activity lost momentum in several countries. Growth in the region is estimated to have risen marginally from 2.6 percent in 2017 to 2.7 percent in 2018, slower than expected and still below potential. This reflected a sluggish expansion in the region’s three largest economies—Nigeria, South Africa, and Angola (Figure 2.6.1). The region faced a more difficult external environment last year as global trade growth moderated, financing conditions tightened, and the U.S. dollar strengthened. Commodity prices diverged, with metals and agriculture prices dampened by weakening global demand, while oil prices were higher in most of 2018, mainly due to supply factors.

In Nigeria, oil production fell, partly owing to pipeline closures in mid-2018, while non-oil activity was dampened by lackluster consumer demand, as well as conflicts over land between farmers and herders that disrupted crop production. In Angola—the region’s second largest oil exporter—stagnant non-oil activity was aggravated by a contraction in oil production, which fell sharply due to underinvestment and to key oil fields reaching maturity. South Africa’s economy slipped into recession in the first half of 2018, with agriculture, mining, and construction acting as major drags on economic growth, amid falling business confidence. Against this backdrop, the South African government announced measures to support the economy through reprioritized spending and structural reforms to improve the business environment.

Growth in the rest of the region was broadly steady, although performance varied between country groups. While growth among metals exporters was subdued in 2018, activity in several oil exporters rebounded. In the Central African Economic and Monetary Community (CEMAC), growth benefitted from an increase in oil production, and higher oil prices. Economic activity in non-resource-intensive countries remained robust, supported by agricultural production and services on the production side, and household consumption and public investment on the demand side. Several countries in the West African Economic and Monetary Union (WAEMU) grew at 6 percent or more, including Benin, Burkina Faso, Côte d’Ivoire, and Senegal. A strong rebound in agriculture in Kenya, Rwanda, and Uganda, following prior droughts, underpinned the pickup in activity in East Africa.

Note: This section was prepared by Gerard Kambou and Rudi Steinbach. Research assistance was provided by Mengyi Li.
The median current account deficit is estimated to have widened from 5.8 percent of GDP in 2017 to 6.1 percent in 2018, but sizable differences persist across countries. For large oil exporters (e.g., Angola, Nigeria), external balances improved, driven by higher oil prices and soft import demand. The current account deficit also narrowed significantly in CEMAC, underpinned by strong fiscal adjustments. By contrast, external balances in metals exporters deteriorated, amid weaker exports in some countries, and higher imports in others. In non-resource-intensive countries, current account deficits remained elevated due to high fuel imports and capital goods imports related to public infrastructure projects. Across the region, balance of payments financing became more difficult against the backdrop of rising external borrowing costs and weakening capital inflows. Eurobond issuance slowed markedly in the second half of the year, while FDI inflows remained subdued (UNCTAD 2018).

Currencies in the region depreciated in effective terms amid a broad-based strengthening of the U.S. dollar and weaker investor sentiment toward emerging markets. Investors’ renewed focus on country-specific vulnerabilities contributed to a rapid sell-off of the South African rand and the Zambian kwacha since mid-2018. Elsewhere in the region, the pace of currency depreciation has been more modest.

Inflationary pressures persist in the region. In Nigeria and Angola, inflation remained in double digits, due to elevated food price inflation (Nigeria) and continued exchange rate depreciation (Angola). In South Africa, inflation stayed within the 3 to 6 percent target range. Among non-resource-intensive countries, inflation rose sharply in Ethiopia and Sudan, due to a rapid expansion in credit and currency depreciation (Ethiopia) and the monetization of a large fiscal deficit (Sudan).

The median fiscal deficit for the region is estimated to have narrowed from 4.0 of GDP in 2017 to 3.7 percent in 2018. The fiscal balance improved sharply among many oil exporters. The narrower deficit in Angola partly stemmed from higher oil prices. CEMAC countries substantially reduced their fiscal deficits through revenue mobilization efforts and cuts in capital expenditures. By contrast, the fiscal deficit remained elevated in Nigeria, due to low tax revenue collection.

In metals exporters, the median fiscal deficit is estimated to have deteriorated sharply, as spending...
levels remain elevated in some countries, while revenues are suppressed. In non-resource-intensive countries, the median fiscal deficit is estimated to have widened modestly, reflecting continued public investment supported by enhanced revenue mobilization efforts.

In all, vulnerabilities remain: government debt-to-GDP ratios are estimated to have risen in more than half of the countries in 2018 and was above 60 percent in one-third (World Bank 2018a). Exchange rate depreciations (e.g., Zambia), negative growth (e.g., Chad, Republic of Congo, Equatorial Guinea), and the reporting of previously undisclosed debt (e.g., Republic of Congo, Mozambique) contributed to the deterioration in the debt-to-GDP ratios.

In addition to the rise in debt ratios, changes in the composition of debt have made many countries more vulnerable to sharp movements in financing conditions (Chapter 4). As countries have gained access to international capital markets, and non-resident participation in domestic debt markets expanded, non-concessional debt has increased. Non-concessional financing accounted for more than half of total public debt in six countries (Cote d’Ivoire, Ghana, Republic of Congo, Sudan, Zambia, Zimbabwe).

**Outlook**

Growth in Sub-Saharan Africa is expected to pick up to 3.4 percent in 2019, rising to an average of 3.7 percent in 2020-21 (Figure 2.6.2). This is predicated on diminished policy uncertainty and improved investment in large economies together with continued robust growth in non-resource-intensive countries. However, external headwinds have intensified, as growth among main trading partners moderates, global financial conditions tighten, and trade policy uncertainty persists (Chapter 1). Per capita income growth is predicted to remain well below its long-term average in many countries, yielding little progress in poverty reduction, and highlighting the need for policy measures to raise potential output while raising the productive capacity of the poor (World Bank 2018b).

Growth in Nigeria is projected to rebound to 2.2 percent in 2019 and average 2.4 percent in 2020-21. These forecasts are unchanged from June and assume that oil production will recover, but peak below government targets, while a slow improvement in private demand will constrain growth in the non-oil industrial sector. In Angola, the growth forecast has been upgraded to 2.9 percent in 2019, moderating to 2.7 percent in 2020-21. A recovery in the oil sector, as new oil fields come on stream, is expected to boost growth, along with a pickup in activity in the non-oil sector as reforms bolster the business environment.

Growth in South Africa is projected to recover more slowly than expected, to 1.3 percent in 2019, before rising to 1.7 percent in 2020-21. High unemployment and slow growth in credit...
extension to households are expected to constrain domestic demand in 2019, while fiscal consolidation limits government spending. Higher growth in 2020 reflects the expectation that the government’s structural reform agenda will gradually gather speed, helping to boost investment growth, as policy uncertainty recedes and investor sentiment improves.

Excluding, Nigeria, South Africa, and Angola, growth in the rest of Sub-Saharan Africa is expected to continue to be relatively solid, but with significant variation between country groups. Economic activity in CEMAC should benefit from higher oil production and an increase in domestic demand as fiscal tightening eases.

Growth is expected to rise moderately among metals exporters, supported in part by stronger mining activity. However, non-mining activity remains subdued owing to weak business confidence, accelerating inflation in some countries, and sluggish credit growth.

Among non-resource intensive countries, economic activity is expected to remain robust in fast-growing countries, such as Cote d’Ivoire, Kenya, and Tanzania, boosted by public investment and strong agricultural production, and in smaller economies, such as Madagascar, on the back of solid export performance. Growth is projected to moderate in Ethiopia, as the government implements fiscal consolidation measures to stabilize public debt.

Inflation is expected to pick up across the region in 2019, reflecting the pass-through of currency depreciations during 2018 and domestic price pressures among metals exporters and non-resource-intensive countries. While inflation is envisioned to continue to recede in Nigeria and Angola, price pressures are likely to intensify in Kenya, Tanzania, and Uganda.

Fiscal balances are expected to improve further, reflecting fiscal consolidation efforts among the large oil exporters and continued adjustment in CEMAC. Policy tightening is likely to yield smaller fiscal deficits in metals exporters, while fiscal deficits in non-resource-intensive countries should also continue to narrow as public investment spending slows to stabilize public debt.

**Risks**

Risks to the regional outlook are tilted to the downside. On the external front, slower-than-projected growth in the Euro Area and China, which have strong trade and investment links with Sub-Saharan Africa, would adversely affect the region through lower export demand and investment. Moreover, Sub-Saharan African metals producers would likely be hit the hardest by escalating trade tensions between the United States and China, as metals prices would fall faster than other commodity prices as a result of weakening demand from China (World Bank 2018c). Furthermore, a faster-than-expected normalization of advanced-economy monetary policy could result in sharp reductions in capital inflows (IMF 2018), higher financing costs, and dislocating exchange rate depreciations, especially in countries with weaker fundamentals or higher political risks (Arteta et al. 2015). Sharp currency declines would make the servicing of foreign currency denominated debt, already a rising concern in the region, more challenging.

The increased reliance on foreign currency borrowing has heightened refinancing and interest rate risk in debtor countries (Chapter 4). Furthermore, the rise in non-resident participation in domestic debt markets has exposed some countries to the risk of sudden capital outflows. In some countries, sizable loans to state-owned enterprises, backed by commodity exports, have increased the risk that a negative commodity price shock could trigger financial crises.

Domestic risks remain significant. Political uncertainty and a concurrent weakening of economic reforms could continue to weigh on the economic outlook in many countries. In countries holding elections in 2019, domestic political considerations could undermine the commitments needed to rein in fiscal deficits or implement structural reforms, especially where public debt levels are high and rising. Insurgencies and armed conflicts, with their adverse effects on economic activity, remain an important risk in several countries. Adverse weather shocks and rising financial sector stress are additional risks.
### TABLE 2.6.1 Sub-Saharan Africa forecast summary

(Real GDP growth at market prices in percent, unless indicated otherwise)

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<td>5.6</td>
<td>6.9</td>
<td>7.0</td>
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<td>-0.3</td>
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**Source:** World Bank.

**Notes:** e = estimate; f = forecast. EMDE = emerging market and developing economy. World Bank forecasts are frequently updated based on new information and changing (global) circumstances. Consequently, projections presented here may differ from those contained in other Bank documents, even if basic assessments of countries’ prospects do not differ at any given moment in time.

1. GDP at market prices and expenditure components are measured in constant 2010 U.S. dollars. Excludes Central African Republic, São Tomé and Príncipe, Somalia, and South Sudan.
2. Sub-region aggregate excludes Central African Republic, São Tomé and Príncipe, Somalia, and South Sudan, for which data limitations prevent the forecasting of GDP components.
3. Exports and imports of goods and non-factor services (GNFS).
4. Includes Angola, Cameroon, Chad, Republic of Congo, Gabon, Ghana, Nigeria, and Sudan.

For additional information, please see www.worldbank.org/gep.
### TABLE 2.6.2 Sub-Saharan Africa country forecasts
(Real GDP growth at market prices in percent, unless indicated otherwise)

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Notes: e = estimate; f = forecast. World Bank forecasts are frequently updated based on new information and changing (global) circumstances. Consequently, projections presented here may differ from those contained in other Bank documents, even if basic assessments of countries’ prospects do not significantly differ at any given moment in time.

1. GDP at market prices and expenditure components are measured in constant 2010 U.S. dollars. Excludes Central African Republic, São Tomé and Príncipe, Somalia, and South Sudan.

2. Fiscal-year based numbers.

For additional information, please see www.worldbank.org/gep.
**BOX 2.6.1 Informality in Sub-Saharan Africa**

Sub-Saharan Africa has high levels of informality, especially in West and East Africa, low-income countries, fragile states, and commodity exporters. Policies to increase human capital, improve access to resources, reduce regulatory burdens, and strengthen governance have been associated with a decline in informality, which in turn has been associated with better macroeconomic and social outcomes. However, for these policies to be effective, they need to be tailored to the specific nature of informality and types of informal firms.

**Introduction**

Despite a decline over the past three decades, employment informality in Sub-Saharan Africa (SSA) remains among the highest in emerging market and developing economies (EMDEs), with nine out of ten workers informally employed (of which six are self-employed). Output informality (around 40 percent of official GDP) and perceptions of informality are also high compared to other EMDE regions. Yet, there is considerable heterogeneity within the region—informality is higher in West and East Africa, low-income countries, fragile states, and commodity exporters. Pervasive informality contributes to lower government tax revenues, which limits the fiscal resources available for much-needed public investment and social programs.

Against this backdrop, this Box examines the following questions:

- How has informality evolved?
- What are the macroeconomic and social correlates of informality?
- What are the policy options to address challenges associated with informality?

**Evolution of informality**

High informal output. On average in 2010-16, the informal economy in SSA countries amounted to 36-40 percent of official GDP, informal employment made up 90 percent of employment and, more narrowly, self-employment accounted for 58 percent of total employment (ILO 2018, Figure 2.6.1.1). Alternative measures of informality, such as the share of the labor force without pension coverage and perceptions of informal activity, were also high compared with other EMDE regions.

Heterogeneity. There is wide cross-country heterogeneity. West and East Africa had much higher average shares of self-employed workers in total employment during 2010-16, at 80 percent and 68 percent, respectively. In contrast, the shares of self-employed workers in Central and Southern Africa were 48 and 43 percent respectively, only slightly above the EMDE average. Self-employment made up more than 85 percent of employment in Benin, Burundi, Madagascar, and Uganda whereas it was less than 20 percent in South Africa and Mauritius.

Evolution of informality in SSA. Informality in SSA has declined gradually over the past three decades, broadly in line with the EMDE trend. Some countries, however, have made significant progress in lowering the shares of informal output and employment, such as Angola, Botswana, Ethiopia, Ghana, Malawi, Rwanda, and Tanzania.

**Correlates of informality**

High informality in SSA has reflected wide-ranging economic and development challenges in the region. It has also reflected economic structures and a dearth of skilled labor.

Weak growth and conflict. SSA hosts all but seven of the world’s 34 low-income countries and nearly half of the world’s 36 fragile states (World Bank 2018d, 2018e). In general, informality is higher in low-income SSA countries and, especially, fragile states. Economic disruptions during conflict and violence have forced people to earn their livelihoods in the informal economy (Heintz and Valodia 2008). Employment losses during recessions or shocks to crop production have also been associated with increases in informal labor supply (Daniels 2003; Calvés and Schoumaker 2004; Otsuka and Yamano 2006).

Economic structure. In commodity-exporting countries, the capital-intensive mining sector creates few formal employment opportunities, and economies in most countries in SSA have large agricultural sectors that have high rates of informal self-employment. In the non-agricultural sector, there is also considerable self-employment in labor-intensive services such as street vendors, craftsmen, and home-based activities (Fox and Sohnesen 2012). Rural-urban migration and increased labor force participation, especially among women, was mostly absorbed by the informal sector (Kessides 2005). In some societies, informal businesses are hereditary in

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Note: This box was prepared by Wee Chian Koh with research assistance from Jinxin Wu.
nature, where businesses are passed down to the next generation (Chen 2012). In others, social norms restrict the mobility of women, compelling them to be informally employed (ILO 2009).

**Low human capital.** The average years of schooling in SSA are well below those in any other EMDE regions (Figure 2.6.1.2). Informal workers in SSA tend to be lower skilled and less educated than formal workers (Adams et al. 2013). This limits opportunities for wage employment in the formal economy. Self-employed workers with low human capital, and hence low productivity, have an incentive to operate in the informal economy to avoid...
purchasing goods and services is limited and that informal firms often end up paying taxes and incurring other administrative costs (Oviedo et al. 2009). Informal firms, with lower managerial ability, also tend to produce low-quality inexpensive products with little demand from the formal sector (La Porta and Shleifer 2016). The HIV/AIDS pandemic has also taken a large toll on human capital and forced workers into less secure informal employment where discrimination is sometimes less pronounced (ILO 2009).

**Limited access to resources and markets.** Informality is associated with restricted access to electricity, finance, and land (Ingram et al. 2007). Limited availability of resources curtails informal firms’ growth and productivity improvements (Steel and Snodgrass 2008). There are also obstacles to market access, such as lack of telecommunications or transport infrastructure, which is particularly important for firms that need to frequently interact with suppliers and customers. Access to public space and urban amenities are also important (Heintz and Valodia 2008).

**High regulatory burden.** Compared with other EMDEs, SSA has considerably higher regulatory burdens. Burdensome regulations such as lengthy processes in registering a business, complicated procedures in filing taxes, high costs of export and import documentary compliance, strict labor regulations, and high tax burden can make it prohibitively expensive to operate in the formal economy (Mbaye and Benjamin 2015).

**Weak governance.** Compared with other EMDEs, SSA has considerably weaker governance and institutions. Poor governance and institutions may result in failures in enforcing regulations and containing corruption. This creates an environment for informal enterprises to easily conceal their activities and evade taxes (Mbaye and Benjamin 2015).

**Low productivity.** Productivity differentials between the formal and informal sectors are large: value added per worker of informal firms is only 14 percent that of formal firms in the median SSA country, lower than the median in other EMDEs (La Porta and Shleifer 2014). Competition from informal firms, which do not shoulder the cost of compliances with taxes and regulations, also weigh on the profitability and investment of formal firms (Oosthuizen et al. 2016; Box 3.3). Although practices of competitors in the informal sector is only the third biggest reported obstacle in SSA, after electricity and access to finance, it is more problematic in SSA compared to other EMDEs (Dinh et al. 2010; La Porta and Shleifer 2016). In addition, since informal firms do not pay taxes, governments’ ability to provide quality public services is constrained.

**Poverty and social outcomes.** While the informal economy can provide important opportunities for employment, the majority of those engaged in informal activities lack income security, employment benefits, and social protection. Moreover, higher informality in SSA is associated with lower life expectancy and worse poverty outcomes (Figure 2.6.1.3). Gender inequality is also prevalent in the informal economy in SSA: women are often placed in the most hazardous jobs with no access to occupational health and safety measures (ILO 2009).

**Policy challenges**

Unlocking the potential of the informal economy. While informality is more pervasive in SSA than in other EMDE regions, the move from informality to formality is more dynamic: more SSA formal firms started out as informal and the duration of informality is shorter than in other EMDEs (Figure 2.6.1.4). SSA also possesses a more positive attitude than other EMDE regions, despite a higher proportion of people who became entrepreneurs out of necessity. Two-thirds (65 percent) of survey respondents believe they have the required skills and knowledge to start a business, 59 percent indicate they see good opportunities to start a firm, and 42 percent intend to start a business within three years. This intrinsic entrepreneurial spirit, despite high regulatory burdens and weak institutions, could render the informal sector a reservoir of untapped economic potential (De Soto 1989; Grimm et al. 2012).

To unlock this potential, both broad-based policy tools—such as better governance—and policy tools targeted at specific parts of the informal sector are available. In Kenya, improved managerial skills and new marketing channels induced by competition helped metalwork enterprises in the Kariobangi Light Industries grow and transition to the formal economy (Sonobe et al. 2011). The local government provided little support other than designating an area for these artisans to operate, but that proved to be sufficient.1

**Tailored policies.** Small informal firms, lacking in human capital, would not sharply increase their productivity by

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1 Also in Kenya, the M-Pesa mobile money transfer system, combined with affordable ICT services, increased microenterprises’ profitability (Mbogo 2012). Improving the survival chances of these microenterprises is one pathway towards growing the formal economy. David et al. (2012) provide other examples of successes at the local government level.
BOX 2.6.1 Informality in Sub-Saharan Africa (continued)

FIGURE 2.6.1.2 Economic and institutional indicators in Sub-Saharan Africa

Low human capital, limited access to resources, heavy regulatory burden, weak governance, and entrepreneurial conditions are important drivers of informality.

<table>
<thead>
<tr>
<th>A. Economic and social characteristics</th>
<th>B. Doing business indicators</th>
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<tbody>
<tr>
<td>Value 10</td>
<td>Value 50</td>
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<tr>
<td>GDP per capita</td>
<td>Index 90</td>
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<tr>
<td>Life expectancy at birth</td>
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<td>Poverty</td>
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<tr>
<th>C. Governance indicators</th>
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<tbody>
<tr>
<td>Score 0.4</td>
<td>Score 4</td>
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<tr>
<td>Advance of women's rights</td>
<td>Basic entrepreneurial education</td>
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<tr>
<td>Social distance</td>
<td>Intellectual property rights</td>
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<tr>
<td>Regulatory quality</td>
<td>Human capital</td>
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<tr>
<td>Rule of law</td>
<td>Customer and investor protection rights</td>
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<tr>
<td>Other corruption</td>
<td>Infrastructure</td>
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</tbody>
</table>

**Sources:** World Development Indicators, Doing Business, Worldwide Governance Indicators, Global Entrepreneurship Monitor, Barro and Lee (2013).

**Notes:**
A. GDP per capita is based on 2011 PPP in thousand dollars, expressed in logarithm. Life expectancy at birth is in years. Poverty is the headcount at $1.90 a day (2011 PPP) in percent of population.
B. The index represents the distance to the frontier (100) in Doing Business. A higher index represents better performance. Data for the period 2004-16.
C. The score is based on Worldwide Governance Indicators. It ranges from -2.5 to 2.5. A higher score represents better performance. Data for the period 1996-2016.
D. The score is based on National Expert Survey of the Global Entrepreneurship Monitor. It ranges from 1 to 9. A higher score represents better perceived condition.

merely registering (La Porta and Shleifer 2016). In contrast, large informal firms resemble formal firms much more than their small informal counterparts: productivity differentials of large informal firms relative to formal firms are minor (Benjamin and Mbaye 2012). In West Africa, the largest and fastest growing sectors are, in fact, dominated by large informal firms. This argues for policies to encourage small firms to grow into more productive formal firms, through skills upgrading and better access to resources such as business development services, transport and communications connectivity, financial services, health services, land and property rights, infrastructure, and technology (Oosthuizen et al. 2016). As these firms become more productive and produce higher quality
products, they could then perhaps be able to participate in supply chains in the formal sector (La Porta and Shleifer 2016). For large firms or those that voluntarily remain informal to evade taxes or avoid labor codes, incentives to encourage formal registration can be combined with tighter enforcement (Mbaye and Benjamin 2015).

**Building institutions.** Regulatory and institutional reforms to build public trust can strengthen incentives for firms to
Despite a relatively higher proportion of necessity-driven informal entrepreneurs, SSA benefits from more dynamic entrepreneurial attitudes. More formal firms in Sub-Saharan Africa than in other EMDE regions started out as informal firms.

A. Entrepreneurship attitude

B. Informality indicators

Sources: Global Entrepreneurship Monitor, World Bank Enterprise Surveys.
Notes: Blue bars are +/- one standard deviation of SSA mean. Other EMDE refers to all EMDEs except SSA countries.
A. Data from the Adult Population Survey of the Global Entrepreneurship Monitor for the period 2001-16. Motivation index is the percentage of those who have recently started a business that are improvement-driven opportunity motivated divided by the percentage that is necessity-motivated. A lower ratio indicates a higher proportion that is necessity-driven.
B. Data from the World Bank Enterprise Surveys for the period 2006-16.
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**Latin America and the Caribbean**


Bank.


**Middle East and North Africa**


**South Asia**


**Sub-Saharan Africa**


Washington, DC.


CHAPTER 3

GROWING IN THE SHADOW:
Challenges of Informality
The informal sector accounts for about a third of GDP and 70 percent of employment (of which self-employment is more than a half) in emerging market and developing economies. Informality is more widespread in lower-income countries with a large agricultural sector and a high share of unskilled workers. While offering the advantage of flexibility and employment in some economies, a larger informal sector is associated with lower productivity, reduced tax revenues, and greater poverty and inequality. Overcoming the challenges of informality requires a balanced mix of policies that carefully take into account country-specific drivers. A well-designed policy framework should include measures aimed at reducing regulatory and tax burdens, expanding access to finance, improving education and other public services, and strengthening public revenue frameworks.

Introduction

The livelihoods of the poor in emerging market and developing economies (EMDEs) often depend on informal activity. In these economies, informal sector output on average accounts for about one-third of GDP and informal employment constitutes about 70 percent of employment (of which self-employment accounts for more than a half; Figure 3.1). In some countries in Sub-Saharan Africa, informal employment accounts for more than 90 percent of employment and informal output is as much as 62 percent of official GDP (ILO 2018a).

Informality is a multidimensional concept, differing in nature across workers and countries (Perry et al. 2007). Some workers and firms are “excluded” from the modern economy or critical state benefits by tax and regulatory burdens (de Soto 1989; Loayza, Oviedo, and Serven 2006). This type of informality is frequently associated with low productivity and poorly paid low-skilled employment (La Porta and Shleifer 2014; Loayza 2018). Other informal workers voluntarily “exit” the formal sector and choose informal activity for its flexibility and independence (Maloney 2004; Günther and Launov 2012).1 In lower-income countries, the informal sector is a major source of income to many low-skilled individuals whose income would otherwise fall below subsistence (Docquier, Muller, and Naval 2017). These reasons for participating in the informal economy mean informal workers range from agricultural day laborers to self-employed lawyers with a few employees.2

Regardless of the reason why individual workers or firms choose between formal and informal activity, a large informal sector has been associated with unfavorable macroeconomic and development outcomes. On average, economies with larger informal sectors tend to have lower productivity, slower physical and human capital accumulation, higher poverty and inequality, and smaller fiscal resources.3 The informal sector itself has, on average, lower productivity than the formal sector because it tends to employ less-skilled workers, have restricted access to funding, services and markets, and lack economies of scale.4 Employment in the informal sector can provide a

Note: This chapter was prepared by a team led by M. Ayhan Kose, Franziska Ohnsorge and Shu Yu, and including Mohammad Amin, Sinem Kilic Celik, Gene Joseph Kindberg Hanlon, Ergys Islamaj, Sergiy Kasyanenko, Cedric Okou, Naotaka Sugawara, Temel Taskin, and Collette Wheeler.

1 Several studies find that some informal workers in EMDEs operate voluntarily in the informal sector. For instance, Falco et al. (2015) use survey data from Ghana and find little evidence for the overall inferiority of working in the informal sector compared with the formal sector. Falco and Haywood (2016) report that returns to productive characteristics in self-employment have increased significantly in Ghana between 2004 and 2011 whilst self-employment has attracted increasingly skilled workers. Blanchflower, Oswald and Stutzer (2001) note that many workers in advanced economies, such as the United States and Portugal, report preferring to be self-employed.

2 Research suggests the coexistence of both “excluded” and “existing” types of informality (e.g. Perry et al. 2007; Hazans 2011; Bosh and Maloney 2008 and 2010; Lehmann and Pignatti 2007; Fiess, Fugazza and Maloney 2010; Nordman et al. 2016).

3 La Porta and Shleifer (2014) provide evidence that informality is associated with lower productivity, less access to financing, and less-educated managers. Some studies show that informality is associated with higher income inequality and poverty (Rosser, Rosser and Ahmed 2000; Perry et al. 2007; Chong and Gradstein 2007; and Loayza, Serven and Sugawara 2010). Lower physical investment in the informal sector could reflect an unwillingness of informal firms to adopt technologies or scale up that would make them visible to tax and other authorities (Dubla-Norris and Inchauste 2008; Gandelman and Rasteletti 2017). Docquier, Muller, and Naval (2017) develop a model that predicts that the informal sector would lead to slower human capital formation. Less educated managers partially explain lower labor productivity observed in informal firms (Cireza and Maloney 2017). Benjamin et al. (2014) show that informality is associated with weaker international competitiveness.

4 For details, see Jovanovic (1982); Amaral and Quintin (2006); Galiani and Weinschelbaum (2012); Loayza (2018).
safety net by keeping or creating employment during periods when the formal sector is shedding jobs (Loayza and Rigolini 2011). However, workers in the informal economy are largely excluded from the social security system and less protected against negative shocks than workers in the formal sector (Box 3.1).

Against this backdrop, this chapter examines the main features of informal economies and possible policies to address the challenges associated with informality. Specifically, it addresses the following questions:

- What are the main features of the informal economy?
- What are the empirical linkages between informality and development outcomes?
- Which policies can mitigate the adverse effects of informality?

The chapter makes the following contributions to the literature on informality:

- **Broad database on informality.** The chapter compiles a new database from a wide range of informality measures. It employs these measures to provide a rich set of stylized facts on informality that are robust to the choice of measure.

- **Informality, poverty and income (wage) inequality.** The chapter documents that higher informality is associated with greater poverty. This may, in part, reflect lower wages for informal workers than formal workers. While many survey-based studies have documented the existence of such wage differentials (especially at the country-level), this chapter distills broader lessons from a large number of studies.

- **Informal competition and formal firm productivity.** The chapter presents the first cross-country study that quantifies the lower productivity of formal firms that face competition from informal firms. This adds to the rich literature that documents the sizable productivity differential between formal and informal firms.

- **Policy implications.** The chapter analyzes the implications of country-specific policy changes for the informal sector and synthesizes the lessons from these changes to offer a menu of policy options that takes into account the importance of complementarities.

The chapter reports the following main findings:

- **Main features of the informal economy.** In EMDEs, the informal economy in 2016 on average accounts for 32 percent of GDP and, 70 percent of employment, with self-employment accounting for 43 percent of employment (Figure 3.1). Informality tends to be higher in lower-income economies that are less open to international trade, have larger agricultural sectors, and have larger pools of young and unskilled workers. Both informal output and employment have declined since 1990. Informality declined faster in countries with higher output growth, rapid physical capital accumulation, and stronger improvements in governance and business climates.

- **Prevalence of informality.** One-half of the world’s informal output and 95 percent of its informal employment is in EMDEs. Three EMDE regions (East Asia and Pacific (EAP), Latin America and the Caribbean (LAC), and Europe and Central Asia (ECA)) accounted for more than one-third of the world’s informal output, but only one-quarter of its formal output. Meanwhile, South Asia (SAR) hosts almost half of the world’s informal workers, although the region accounts for less than one-tenth of the world’s formal employment and less than one-twentieth of the world’s formal output. Another 14 percent of the world’s informally employed are in Sub-Saharan Africa (SSA), two to five times
the region’s share of the world’s formal output or formal employment.

- Informality and development outcomes. Higher informality is associated with lower output growth, lower productivity, and higher poverty and income inequality. Potential reasons for greater poverty in economies with higher informality may include a lack of fiscal resources to fund public services or wage differentials between informal and formal workers. Workers in the formal economy earn, on average, about 19 percent more than workers in the informal economy. These wage differentials largely reflect the characteristics of informal workers, who tend to be lower-skilled than formal workers.

- Informality and firm productivity. The average informal firm in EMDEs is only one-quarter as productive as the average firm operating in the formal sector. Moreover, firms in the formal sector that face informal competition are, on average, only three-quarters as productive as those that do not. Better business climates can mitigate some of these productivity differentials.

- Informality and fiscal indicators. In EMDEs with the most pervasive informality, government revenues are lower by 5-10 percentage points of GDP (and expenditures lower by 4-10 percentage points of GDP) than in those with the lowest levels of informality. In developing economies, pervasive informality further limits governments’ limited ability to implement redistributive measures, invest in public infrastructure, or carry out other growth-enhancing policies.

- Policy implications. A review of studies of policy measures that have had repercussions for informality highlights the need for a comprehensive policy package that takes into account country-specific features that lead to informality and determine its consequences. First, strategies to reduce informality outright may hurt vulnerable groups and disrupt formal activity that relies on informal-economy inputs. These effects can be

**FIGURE 3.1 Informality: Magnitude and correlates**

The informal sector accounts for about a third of GDP and 70 percent of employment (of which self-employment is more than a half) in emerging market and developing economies. A large informal sector is associated with slower GDP growth and weaker governance as well as greater poverty and income inequality. Widespread informality is also seen in economies with lower government expenditures and revenues, and a skew towards trade-based taxation.

**A. Share of informal output and employment**

![Graph showing the share of informal output and employment over time](image)

**B. Informality: Output, employment, and perception**

![Bar chart showing the output, employment, and perception](image)

**C. Informal output and institutional quality, 2016**

![Graph showing the informal output and institutional quality](image)

**D. Brazil: Share of informal workers preferring informal over formal employment**

![Bar chart showing the share of informal workers](image)

**E. Informality, poverty, and income inequality**

![Graph showing the informal output, poverty, and income inequality](image)

**F. Differences in fiscal indicators between the lowest and highest output informality in EMDEs**

![Graph showing the differences in fiscal indicators](image)


A. Unweighted averages. Informal employment uses self-employment shares in the closest (latest) available year around 1990 and 2016 (with informal employment shares in shaded red). World averages between 1990-2016 are in orange.

B. Unweighted average for each informality measure for latest available year (with the corresponding +/−1 standard deviation shown in vertical bars). See Annex 3.1 for details.

C. Group averages of DGE-based informal output in percent of official GDP in year 2016 are shown in diamonds, with bars showing 95 percent confidence interval. Dashed line shows the world average. “High” (“Low”) indicates countries with above- (below-) median values in the following two measures: Doing Business distance-to-frontier and governance effectiveness (WGI).

D. The share of informal workers preferring informal over formal employment (Maloney 2004).

E. Data are for 1990-2016. Group means (diamonds) and 95 percent confidence intervals (bars) are shown for poverty headcount ratio at $1.90 a day (2011 PPP, percent of population) and Gini coefficients. “High informality” (“Low informality”) indicates countries with above- (below-) median informal output (DGE-based).

F. Difference (between the 2000-16 average fiscal indicators among the third of EMDEs with the highest and lowest informal output) is shown in bars. Vertical bars indicate 10 percent confidence intervals of the difference. Sample includes 70 non-energy exporting EMDEs with populations above 3 million people.
BOX 3.1 Linkages between formal and informal sectors

Empirical evidence on the degree of cyclicality of the informal economy with the formal business cycle is mixed. The cyclicality and sensitivity of informal employment to formal business cycles depends on the source of shocks that cause business cycle fluctuations, the presence of rigidities in the formal sector, the initial extent of informality, and the availability of informal jobs.

While there is broad consensus that the informal economy is sizable in emerging market and developing countries (EMDEs), evidence for its behavior over the business cycles remains inconclusive. An informal economy that expands while the formal economy contracts may support household incomes during economic downturns and serve as a safety net (Loayza and Rigolini 2011). An informal economy that behaves procyclically could function as a “growth engine” by providing more services and intermediate inputs to the formal economy during economic expansions but, conversely, could also amplify the adverse effect of recessions (Dell’Anno 2008; Chen 2005; Meagher 2013). Earlier work suggests that the degree of cyclicality of the informal economy depends on the measure of informality used and country characteristics.

Against this backdrop, this box reviews the literature and presents results from a set of empirical exercises to address the following questions:

- What conclusions does the literature offer about the cyclical behavior of the informal economy?
- How synchronized have been movements in informal and formal economies?
- What are the policy implications of cyclicality?

Literature review

The evidence on the cyclical behavior of the informal economy offers mixed conclusions. Studies focusing on the share of the informal economy in total output or employment tend to find countercyclical behavior whereas studies focusing on output or employment levels tend to find procyclical behavior. This section summarizes this literature.

Informal economy as a countercyclical safety net

Informal economies can serve as buffers and safety nets for the poor if they absorb labor during recessions. This can facilitate an economic recovery provided that re-entry into the formal sector is open when the formal economy returns to expansion (Colombo, Onnis, and Tirelli 2016; IMF 2017; Loayza and Rigolini 2011).

Macroeconomic evidence. Macroeconomic studies suggest that the informal economy can behave “countercyclically” in the sense that the share of informal employment indeed rises during business cycle downturns. Using data from 54 countries for 1984-2008, Loayza and Rigolini (2011) show that, on average, a one standard deviation slowdown in GDP per capita growth (i.e., 3 percentage points) is linked with a short-run increase in the share of self-employment in the total labor force by 1.2 percentage points. However, they also find considerable heterogeneity across countries—the counter-cyclicality of informal employment is much weaker in economies with more pervasive informality.

Using quarterly data for Mexico, Fernandez and Meza (2015) find that the correlation between informal employment and official GDP is modest (about -0.3), whereas the correlation between formal employment and formal output is strongly positive. The authors argue that this lowers cyclicity of total employment. Colombo, Onnis, and Tirelli (2016) use electricity consumption as a proxy for total economic activity to study cyclical

Note: This box was prepared by Sergiy Kasyanenko and Shu Yu.

1 See Meagher (2013) for a literature review on studies concerning the linkage between formal and informal economy.

2 Several recent studies also argue that pervasive informality may influence the measured cyclicality of the formal economy. For example, Restrepo-Echavarria (2014) and Horvath (2018) show that models with a large and poorly measured informal sector can generate excess volatility of formal consumption relative to formal output – a common feature of business cycles in many EMDEs.

4 Due to its flexibility, the informal sector is able to adjust in wages rather than employment during recessions, which explains the informal employment’s lack of responses to economic downturns (Maloney 2004, Guriev, Speciale and Tuccio 2016).

5 Remittances, as a buffer against shocks to formal economy, may also influence the cyclicality of the informal sector. Remittances appear to be largely absorbed by the informal sector as Ivlevs (2016) finds that high level of remittances tends to be associated with more informality. Shapiro and Mandelman (2016) and Santanu and Turnovsky (2018) show that countercyclical remittances are associated with higher informal employment during recessions as formal employment declines.

5 The countercyclicality drops as the share of informal employment in total employment increases and disappears when informal employment accounts for more than 42-43 percent of total employment. Theoretically, Shapiro (2014) suggest that while the share of self-employment tends to decline during economic upturns, the ease of entry into self-employment explains the differences in cyclical behavior across countries.
Box 3.1 Linkages between formal and informal sectors (continued)

Properties of informality in 48 countries over the period 1984-2005 and illustrate that the informal economy expands following a banking crisis. Finally, Kaufmann and Kaliberda (1996), Busato and Chiarini (2004), and Elgin (2012) present empirical evidence that the informal economy acts as a buffer, increasing its share of official GDP during economic downturns. More procyclical fiscal policy in less developed economies with weaker institutions may contribute to the countercyclical of informal activity. Fiscal policy tends to be more procyclical in countries with higher informality (Çiçek and Elgin 2011). In particular, procyclical fiscal consolidation during recessions, including through higher taxes, may encourage more informal employment and strengthen the counter-cyclical of informal activity.

Microeconomic evidence. In work flow data for Brazilian metropolitan labor markets between 1983 and 2002, Bosch, Goni and Maloney (2007) find that the informal sector is able to absorb more labor during economic downturns as jobs became scarce in the formal sectors. Bosch and Esteban-Pretel (2012) use the same data and find that the share of formal employment falls as formal-economy output contracts, in part because the rate at which workers find formal jobs plummets while that at which they find informal jobs remains broadly stable.

Informal economy as an engine of growth

Since informal firms provide services, as well as final and intermediate goods to the formal sector, one would expect a positive correlation between formal and informal sector activity (Lubell 1991; Arvin-Rad et al. 2010; Moreno-Monroy et al. 2014). In addition, informal-economy income can support formal-economy demand. Macroeconomic evidence. Using informal output levels (as opposed to the share of the informal economy), Bajada (2003), Giles (1997), Giles and Tedds (2000), and Dell’Anno (2008) find that informal-economy output movements correlate positively (i.e. move pro-cyclically) with formal-economy output movements in Australia, New Zealand, Canada, and a group of 19 Latin American countries. In a group of developing countries, Fiess, Fugazza, and Maloney (2010) identify episodes where relative demand or productivity shocks to the non-tradables sector (as opposed to the tradables sector) are associated with higher informal employment (hence, procyclicality). In Brazil and Mexico, higher separation rates from informal jobs and a large drop of the formal job finding rate may induce labor outflows from the informal sector during recessions (Bosch and Maloney 2008). Arvin-Rad et al. (2010) develop a theoretical model that establishes procyclical informal-formal sector linkages, particularly when formal firms sub-contract labor-intensive stages of production to the informal sector.

Microeconomic evidence. Schneider (1998) reports that in Germany and Austria at least two-thirds of the income earned in the informal economy is immediately spent in the official economy resulting in considerable (positive) stimulating effects on the official economy. In firm-level data for India, Moreno-Monroy, Pieters, and Erumban (2014) find that formal and informal sector employment are positively correlated, in part because subcontracting by formal-sector firms to informal firms contributes to job creation in the informal sector. Data from Indian manufacturing firms show that the gross value added for several predominantly informal industries is positively correlated with that in the formal sector and FDI. This may be indicative of technological spillovers contributing to both formal and informal sectors (Beladi, Dutta, Kar 2016).

Factors determining the degree of procyclicality of the informal economy

Cross-country heterogeneity. There is considerable cross-country heterogeneity in the degree of pro-cyclicality of informal employment. It tends to be higher when informality is greater (Loayza and Rigolini 2011), when informal employment is more common (Shapiro 2014), when there are stronger informal-formal sector linkages such as through subcontracting (e.g., Moreno-Monroy, Pieters, and Erumban 2014; Mbaye, Benjamin, and Gueye 2017).
BOX 3.1 Linkages between formal and informal sectors (continued)

Source of shocks causing business cycles. The informal economy can move procyclically or countercyclically, depending on the sectoral origin of the shocks that generate business cycles in the presence of wage rigidities, especially in the formal sector (Fiess, Fugazza, and Maloney 2010). Positive relative demand or productivity shocks to the non-tradable (largely informal) sector could increase informal employment, i.e. generate procyclicality in informal employment, especially when combined with wage rigidities in the formal sector. For instance, in Colombia, capital account liberalization in the context of broader reforms during 1991-1996 raised permanent income and constituted a positive demand shock to the non-tradeable sector. This upturn resulted in an expanding non-tradeable informal sector. Conversely, in the presence of wage rigidities, a negative shock to the tradables sector would expand informal (nontradables) employment and thus appear as countercyclicality.

Synchronization in formal and informal-economy movements

As in other studies that examine levels of employment and output, the dataset used in this chapter suggests that, at the macroeconomic level, formal employment levels and informal output levels comove with formal output levels but informal employment levels do not. Several methodologies point to this finding, including examinations of volatility, business cycle turning points, correlations and factor models.

- **Macroeconomic volatility.** Since formal and informal employment move marginally (but statistically significantly) in opposite directions, the volatility of total (formal and informal) employment is somewhat lower than the volatility of each type of employment in isolation (Figure 3.1.1, Elgin et al. forthcoming a; Loayza and Rigolini 2011; Fernandez and Meza 2015). Self-employment (as a proxy for informal employment) is somewhat more volatile than formal employment where labor market regulations may slow the response to movements in aggregate demand (Djankov and Ramalho 2009). In contrast, informal output is somewhat less volatile than formal output, possibly reflecting flexible adjustments in hours worked in the informal economy (Meghir et al. 2015; Guriev, Speciale, and Tuccio 2016).

- **Business cycle turning points.** About three fourths of business cycle troughs in formal output coincide with a trough in the informal output; seven out of ten formal output peaks coincide with informal output peaks (Elgin et al. forthcoming b). In contrast, turning points in self-employment, as a proxy for informal employment, rarely coincide with turning points in formal employment or formal output.

- **Correlations.** Lead, lag, and contemporaneous correlations of formal-economy output with informal-economy output are highly and statistically significant whereas those between formal output and informal employment are statistically insignificant (Figure 3.1.1; Elgin et al. forthcoming b). This is consistent with studies that find countercyclicality in the share of the informal economy and those show that informal firms are flexible enough to adjust in wages rather than employment during economic downturns (Maloney 2004, Loayza and Rigolini 2011, Guriev, Speciale and Tuccio 2016).10

- **Common factors.** A dynamic factor model applied to formal and informal output and employment finds that a single common factor accounts for 38 and 40 percent of the output variance of the informal and formal economies, respectively (Kose, Prasad, and Terrones 2003; Elgin et al. forthcoming b). This common factor explains only a negligible share of the variance in informal employment.

Policy implications

A large degree of comovement of informal employment and formal output in and of itself may not warrant policy action for two reasons. First, the direction of comovement can change over time if business cycle fluctuations are caused by changing sources of sectoral shocks. Second, the appropriate policy response would depend on the source of the shock that generates comovement. If a procyclical expansion in informal employment is largely the reflection of shocks in the nontradable sector, such as in a construction boom, no policy response specifically related to informality may be needed. In contrast, if a countercyclical expansion in informal employment reflects a downturn in the tradable sector, such as in...

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10 This lack of comovement between formal output and informal employment is particularly pronounced in EMDEs, possibly reflecting data challenges in EMDEs, genuinely lesser synchronicity between formal economic output and formal employment in advanced economies, or higher labor market rigidities in EMDEs (Neumeyer and Perri 2005; Botero et al. 2004; Campos and Nugent 2012).
manufacturing, in the presence of labor market rigidities, measures to ease labor market rigidities may be the appropriate response (Fiess, Fugazza and Maloney 2010).

In addition to measures taken explicitly to address informality, many measures undertaken for other reasons, such as tax measures, may have implications for informality. The discussion in this box highlights that these implications warrant a carefully calibrated policy mix.

The resilience of informal employment to business cycle swings, juxtaposed with the weaker development outcomes associated with informality (discussed in the main text), suggests a tradeoff. In the short-run, informal activity can provide a safety net during business cycle swings and labor
dislocations caused by major structural changes such as trade liberalizations; in the long-term, however, informality can create poverty traps and stymie development (Docquier, Muller, and Naval 2017; Dix-Carniero, Goldberg and Meghir 2018). Policy measures that—deliberately or inadvertently—reduce informality can therefore protect vulnerable population groups better if they are accompanied by strengthened social safety nets that can fulfill some of the roles of the informal sector.

Similarly, if comovement between formal and informal output reflects synergies, such as through subcontracting, policy measures aimed at curtailing informal activity can disrupt formal activity. These effects could be mitigated if measures that reduce informality were accompanied by greater labor and product market flexibility in the formal sector that facilitates a reallocation of workers and firms.

Box 3.1 Linkages between formal and informal sectors (continued)

BOX 3.1 Linkages between formal and informal sectors (continued)

mitigated by stronger safety nets, greater labor and product market flexibility, and better access to resources for informal firms. Second, policies to spur development, as a collateral benefit, can help reduce informality. Specific measures discussed in this chapter include simplification of tax codes and enhanced enforcement of revenue collection, which can reduce the incentive to operate informally depending on country-specific circumstances; easing of labor market regulations to lower the relative cost of employing formal workers and create a level playing field for formal and informal firms and workers; as well as greater access to finance and public services to help increase productivity in the informal sector and encourage a shift of activity to the formal sector.

Informality: Conceptual considerations and measurement

Definition of informality. Informality is often defined as market-based legal production of goods and services that are hidden from public authorities for monetary, regulatory, and institutional reasons (Schneider, Buehn, and Montenegro 2010). This general definition encompasses many types of informal activity among workers and firms. Some studies distinguish different types of informality by the motives of participating in the informal economy. For example, some classify informal workers and firms into those that are “excluded” and those that “voluntarily exit” from the formal sector (Perry et al. 2007). Others focus on “subsistence informality”, which is pervasive in lower-income countries and characterized by low-skill technology. In the absence of such an informal economy, the income of low-skilled workers would fall below subsistence levels (Docquier, Muller, and Naval 2017).

Some others classify informal workers and firms into evaders, avoiders, and outsiders depending on their compliance with regulations and regulations’ applicability (Kanbur and Keen 2015; Kanbur 2009). Evaders are firms that are covered by the regulation but do not comply; avoiders are firms that adjust to be outside the remit of the regulation; outsiders are firms that are simply not covered by the regulation. More recent studies distinguish different types of informality by the entities engaged in informal activity, separate from their motivation: within firms, formal and informal workers or activities (“interfirm margin”)

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5 Monetary reasons include avoiding taxes and social security contributions; regulatory reasons include avoiding government bureaucracy or regulatory burdens, while institutional reasons include corruption, the quality of political institutions and weak rule of law. For the purposes of this chapter, the informal economy reflects activities that, if recorded, would contribute to GDP, and does not cover illegal activities or household production (Schneider, Buehn, and Montenegro 2010; Medina and Schneider 2018). The differences between informal production and household production is that the latter does not encounter monetary transactions.

6 The definition and classification of informality is deeply context specific. Similarly, the choice of informality measures largely depends on the research question (see Elgin et al. (forthcoming a) for details).
and, within sectors, informal and formal firms or workers ("intersectoral margin", Maloney 2006; Ulyssea 2018). Individual country practices vary widely but typically adhere to these broad principles.

- **Informal workers.** Informal employment covers all workers of the informal sector and informal workers outside the informal sector (ILO 2018a). The former comprises all persons who were employed in at least one informal firm. The latter group includes both self-employed and workers that are not employed in formal contractual arrangements or not subject to social protection or employment benefits. Some have defined informal employment more specifically as that of workers without pension coverage, which is a part of social protection (Loayza et al. 2010).

- **Informal firms.** An informal firm satisfies the following criteria (ILO 2018a). First, it is not an incorporated enterprise that is a legal entity separate from its owners, has its own complete set of accounts, but is not owned nor controlled by one or a few household members. Second, it is a market enterprise that sells its goods or services. Third, it falls into one of the following categories: it keeps the number of workers employed on a continuous basis and below a threshold determined by the country; it is not registered; or its workers are not registered.

**Measurement of informality.** Reflecting the difficulty of measuring informality, the literature has developed a wide range of estimation methods to capture its extent. In this chapter, a database of all commonly used measures of informality is compiled (summarized in Annex Table 3.1.1), ranging from model-based estimates of the share of informality in official GDP (MIMIC and DGE estimates), to survey-based measures of the share of informality in total employment (share of self-employed and share of workers covered by pension schemes), and public perceptions of the extent of informality (World Economic Forum index, World Value Survey index, and Enterprise Surveys). The database includes up to 187 economies (36 advanced and 151 emerging market and developing economies) over the 1990-2016 period. Both cross-country rankings and time trends are consistent for most countries. That said, the chapter relies mainly on the two model-based (DGE and MIMIC) estimates of the share of informal output and the share of self-employed (from ILO, World Development Indicators, and national statistical offices’ databases), which stand out in their time and country coverage.

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7 See Perry et al. (2007, p.27) for a more detailed description of informal employment and different types of informal employment.

8 The most frequently used informal employment measure is the share of self-employment in total employment, which is a lower bound of informal employment (e.g. La Porta and Shleifer 2014). As defined by the 1993 International Classification of Status in Employment (ICSE-93), self-employed workers are those workers who, working on their own account or with one or a few partners or in a cooperative, hold the type of jobs defined as “self-employment jobs.” The other measure, informal employment, comprises all workers of the informal sector and informal workers outside the informal sector. The former covers all persons who, during a given reference period, were employed in at least one informal sector enterprise, irrespective of their status in employment and whether it was their main or a secondary job. The latter covers self-employed and employees holding informal jobs. See Annex 3.1 for details. For the remainder of the chapter, informal employment will be proxied by self-employment since data on informal employment is not available for advanced economies. The numbers here refer to the latest available years.

9 Benjamin and Mbaye (2012) and Mbaye, Benjamin, and Gaeye (2017) provide an alternative definition of informal firms as a continuum depending on size, registration, honest accounting, tax payments, mobility of work-place and access to bank credit.

10 For the compiled dataset, see Elgin et al. (forthcoming a). In the dataset, the Multiple Indicators Multiple Causes (MIMIC) model is a model of structural equations that use observable causes and indicators to capture the latent level of informal output. Elgin et al. (2018 a) follow Schneider, Buehn, and Montenegro (2010) closely when estimating the MIMIC model for 160 countries over the period 1993-2015. The dynamic general equilibrium (DGE) model of Elgin and Oztunali (2014) provides an alternative estimate of the size of the informal sector for 158 countries (36 AEs and 122 EMDEs) over the period 1950-2016. To make the measures comparable with those in the literature, both measures are reported in percent of official GDP. In the following sections, “in percent of GDP or output” is used as the equivalent of “in percent of official GDP” in the context of the share of informal output (both DGE-based and MIMIC-based estimates), while “in percent of employment” is used as the equivalent of “in percent of total employment.”

11 For presentational simplicity, throughout this chapter, the output share of informality refers to the share of informal output based on DGE model estimates, unless otherwise noted. The main results for features of informality, correlates of informality, and developmental implications are robust to the use of MIMIC-based estimates.
Main features of the informal economy

Informality: Lower in advanced economies than in EMDEs. On average, the size of the informal economy is about 32 percent of official GDP and, in EMDEs, 71 percent of total employment in 2016, of which self-employment accounts for 43 percent of total employment (based on latest available data for each country). A higher level of development, e.g., as measured by per capita income, is associated with lower informality, regardless of the measure of informality or the year chosen (La Porta and Shleifer 2014, Figure 3.2). As a result, informality tends to be considerably more pervasive in EMDEs than in advanced economies: in advanced economies, informal output accounts for about 17 percent of output and self-employment accounts for 14 percent of employment. Perceptions from business owners and managers about the pervasiveness of informality also suggest greater informal activity in EMDEs than in advanced economies.

Cross-country heterogeneity: Pronounced in EMDEs. The size of the informal economy varies widely across countries (Figure 3.2). In EMDEs, the informal economy ranged from around 10 (in China) to 69 (in Equatorial Guinea) percent of GDP—depending on the measure used—and self-employment ranged from near-zero (Qatar) to 94 (Burundi) percent of employment. Among advanced economies, the share of informal output in GDP has varied from less than 12 percent, in Switzerland and Singapore, to about 32 percent in Estonia. During 2006-16, Greece registered the highest share of informal employment (37 percent) among advanced economies.

Regional informality: Common in all EMDE regions. Informality is common in all EMDE regions but takes different forms (World Bank 2012). On average, the informal economy’s share of output is highest in Sub-Saharan Africa (SSA), Europe and Central Asia (ECA), and Latin America and the Caribbean (LAC). The share of self-employment, however, is highest in Sub-Saharan Africa (SSA), South Asia (SAR), and East Asia and the Pacific (EAP, Figure 3.3).
Two country examples illustrate differences across regions. In Brazil, the informal sector employs one-third of total employment and produces one-third of GDP. In Pakistan, the informal sector provides two-thirds of total employment but produces only about one-third of GDP. This difference points to considerably lower informal labor productivity relative to total labor productivity in Pakistan than in Brazil, in part reflecting lower educational attainment of informal workers (La Porta and Shleifer 2014; Loayza 2018).

Three EMDE regions (EAP, LAC and ECA), alone accounted for more than one-third of the world’s informal output in 2016, but only one-quarter of the world’s formal output. Almost half (42 percent) of the world’s informal workers can be found in South Asia (SAR), although the region only accounts for 9 percent of the world’s formal employment and 3 percent of the world’s formal output (Box 3.2). Another 14 percent of the world’s informally employed are in Sub-Saharan Africa (SSA), well above SSA’s share of the world’s formal output (2 percent) or formal employment (5 percent).

**Informality over time: Downward trend.** The shares of both informal output and self-employment have declined since 1990, especially in EMDEs (Figure 3.2 and 3.4). Between 1990-16, on average, the share of informal output fell by about 7 percentage points of GDP in EMDEs (to 32 percent of GDP) and by about 4 percentage points (to 17 percent of GDP) in advanced economies. Over the same period, the average share of self-employment declined by about 4 percentage points (to 14 percent of total employment) in advanced economies and by about 4.5 percentage points (to 43 percent of total employment) in EMDEs. These declines were broad-based: the share of informal output declined by 5 percentage points of output or more between 1990 and 2016 in all advanced economies and 86 percent of EMDEs.\(^\text{12}\)

\(^{12}\)The DGE-based measure of informal output shows that between 1990 and 2016, the share of informal output over official GDP fell in 140 (36 AEs and 104 EMDEs) out of 157 countries where data are available. Similar results are found in MIMIC-based measure on informal output. During the same period, 84 (18 AEs and 66 EMDEs) out of 127 countries experienced a drop in the share of self-employment.

In EMDEs, the largest declines in the shares of informal output and employment occurred from the mid-2000s onwards in a reversal of a decade of rising informal employment and barely shrinking
BOX 3.2 Regional dimensions of informality: An overview

Informality, especially employment informality, is most prevalent in lower-income EMDE regions. Together, South Asia and Sub-Saharan Africa account for nearly 60 percent of all informal workers in EMDEs. However, even in some wealthier EMDE regions, such as Latin America and the Caribbean and Europe and Central Asia, informality remains significant in part due to weak institutions and high levels of taxation and regulation. Both the drivers and implications of informality vary across and within regions, suggesting the need for tailored policy responses.

The informal economy accounts for a significant proportion of both employment and output across EMDEs. Around three-quarters of EMDE employment is estimated to be in the informal sector. Self-employment, which is relatively easy to measure and provides a lower bound estimate of informality, is 43% of total employment in the average EMDE, although this proportion ranges from 22 percent in the Middle East and North Africa (MENA), to 62 percent in Sub-Saharan Africa (SSA).

Informality has both costs and benefits. It can provide an important source of income in EMDEs, often to those with few available alternatives. That said, informal employment is often associated with lower and more uncertain incomes for workers and lower revenues available for governments to fund their development objectives.1

The regional disparities in the scale of informality depend on a wide range of factors. To summarize these regional distinctions, this box addresses the following questions:

- Where is global informality concentrated?
- What have been the correlates of informality across EMDE regions?
- What policy options are available?

Where is global informality concentrated?

Regional composition of EMDE informal sectors. One-half of the world’s informal output and 95 percent of informal employment is located in EMDEs. Three EMDE regions alone accounted for one-third of the world’s informal output in 2016: East Asia and Pacific (EAP), Latin America and the Caribbean (LAC), and Europe and Central Asia (ECA). They are also the largest EMDE regions by formal GDP, accounting for one-quarter of the world’s formal output.

In terms of employment, almost half (42 percent) of the world’s informal workers can be found in South Asia (SAR), although the region accounts for just 9 percent of the world’s formal employment and 3 percent of the world’s formal output (Figure 3.2.1). Sub-Saharan Africa (SSA) is also over-represented in its share of informal employment, accounting for 14 percent of the world’s total, well above its share of the world’s formal output (2 percent) or formal employment (5 percent).

Informal-sector productivity in EMDE regions. In all EMDE regions, the proportion of informal employment exceeded the share of informal output, reflecting a tendency for the informal sector to be less productive than the formal sector (La Porta and Shleifer 2014; Fajnzylber et al. 2011). This difference is particularly pronounced for SAR and SSA, where the informal employment share is approximately double the informal output share.

Trend decline in informality. In all EMDE regions, the informal sector has steadily declined in relative importance since the 1990s. On average, informality has fallen by 5 percentage points of GDP since the 1990s, partially driven by economic development and improvement in governance. The decline in relative importance was largest in EAP and SAR with informality falling by 8 percentage points in both regions. Faster-than-average formalization of the economy in these two regions is likely to in part reflect faster-than-average per capital GDP growth since the 1990s. Conversely, informality in the Middle East and North Africa (MENA) decreased only modestly amid persistently weak growth and entrenched weak governance.

Within-region heterogeneity. The regions with the widest per capita income heterogeneity were also those with the widest range of informality as a share of output or employment. Informality is significantly more prevalent in lower-income economies within EAP despite the relatively low share of informal output for the region as a whole. In MENA, the non-Gulf Cooperation Council (GCC) economies have elevated levels of informality while the share for MENA as a whole is the lowest of all EMDE regions (Box 2.4). In contrast, in SSA, where the variation of per capita incomes is one-fifth that of MENA (the EMDE region with the largest per capita income heterogeneity), informality amounted to over 30 percent

Note: This box was prepared by Gene Kindberg-Hanlon with research assistance from Jinxin Wu and Zhuo Chen. It summarizes six boxes on the regional dimensions of informality featured in Chapter 2.

1 For the purposes of this box, informal employment is proxied by self-employment because of good data coverage, and the regional disparities identified in this box are robust to other measures.
of output and 39 percent of employment in three-quarters of countries.

What have been the correlates of informality across regions?

Informality is concentrated in countries which are less developed and suffer from a range of institutional weaknesses. Poverty and low human capital are strongly associated with those regions with the highest incidence of informality. In contrast, in wealthier regions such as LAC and ECA, institutional weaknesses and tax policy have contributed to elevated levels of informality.

**Economic development.** Informality is most prevalent in EMDE regions with low income per capita, reflecting the role of informality as both a driver and consequence of poverty (La Porta and Shleifer 2014). None of the regional shares of informal output or employment deviates statistically significantly from what might have been expected based on average per capita incomes alone (Figure 3.2.1).

**Low human capital.** Informality is also more prevalent where educational attainment is weak. In SSA, where educational attainment is the lowest on average among

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2 Docquier, Muller and Naval (2017) demonstrates that a sizeable informal sector that competes with the formal sector for low-skilled workers reduces the incentives to invest in human capital in the long run. In addition, weak educational attainment is a feature of lack of development, which contributes to informality (Loayza 2016).
EMDEs, informal sector workers are much less likely to have completed primary education than those in the formal sector (Figure 3.2.2; Adams, Johansson de Silva and Razmara, 2013). Education levels have also been found to be an important driver of informality in SAR, where attainment is also below the EMDE average.\(^3\)

**High regulatory and tax burdens.** In LAC, several studies have found a strong relationship between the region’s above-average tax rates and ease of tax avoidance, and the level of informality (Figure 3.2.2; Loayza 1996; Vuletin 2008; Ordoñez 2014). For ECA, labor market regulations that are more restrictive than elsewhere have been identified as drivers of informal employment (Fialová 2011).

**Weak institutions.** Some economies in ECA have below-
average institution quality, which may explain the region’s slightly above-average degree of output informality despite ECA’s relatively high per capita income. In non-GCC MENA economies, corruption has been cited among the biggest hindrances to firms which may increase incentives to operate informally (World Bank 2016).

**Region-specific factors.** A number of region-specific factors have contributed to informality.

- In ECA, a high share of informal output is partly a legacy of the collapse of the Soviet Union in the late 1980s and early 1990s as well large remittance inflows that have financed informal sector activity (Box 2.2).

- In some LAC economies, the trade liberalizations of the 1990s have been identified as contributors to growing informality, as formal firms that were unable to compete in a liberalized formal economy retreated into informality (Box 2.3).

- In MENA, although informality is particularly pronounced in non-GCC economies, in the GCC informality is low partly because of its heavy reliance on documented foreign workers and government employment (Box 2.4 and World Bank 2018).

- In SSA, large agricultural sectors help explain widespread informal employment as does the conflict and violence that have afflicted the region and forced people to earn their livelihoods in the informal economy (Box 2.6).

**What policy options are available?**

To mitigate the damaging effects associated with informality, policy responses can be tailored to the circumstances and drivers of informality in that economy. Policy options can be broadly split into several categories:

**Improving human capital.** By investing in education and social services to improve human capital, policy makers can improve the productive capacity of workers that are currently uncompetitive in the formal sector. Training has been found to boost worker income and firm revenue in studies in the informal sectors of SSA and SAR (Verner and Verner 2005; Burki and Abbas 1991).

**Improving access to public services and finance.** Efforts to facilitate informal sector business can benefit informal sector workers and make them more competitive (Box 2.6; Sonobe et al. 2011). For example, in SSA, providing informal traders public goods, such as a market to trade in or access to water and sanitation, has helped increase informal firm profitability and product quality. In SAR, a lack of access to financial resources is common for the self-employed (Ghani, Kerr, O. Connell 2013, Box 2.5). Enabling access to microfinance has been found to increase investment and productivity in the informal sector (Likhi 2013; Donou-Adonsou and Sylwester 2017; Imai and Azam 2012).

**Easing tax and regulatory burdens.** Several studies in LAC have found that policies to reduce tax rates and simplify tax systems have incentivized firms to transition to the formal sector. Payroll or business tax cuts in Colombia, Brazil and Uruguay have been associated with higher formal employment and firm registration. However, in regions where tax rates or tax compliance costs are not elevated, cutting taxes can be counterproductive in reducing informality. In ECA, where corporate tax rates are lower than the EMDE average, higher taxation was associated with increased formalization in some studies because of the lack of public goods provided in regions with insufficient tax revenue (Fialová 2011; Freedman, Johnson and Kaufmann 2000). Separately, less restrictive employment protection has been associated with a smaller informal economy (both in employment and output) in ECA countries (Fialová 2011, Lehmann and Muravyev 2009).

**Tightening enforcement.** Enforcement that is economically and socially sensible can help reduce the presence of the informal sector (Loayza 2018). In LAC, policies such as labor inspections have been found to induce informal workers and firms to formalize (De Andrade, Bruhn, and McKenzie 2013; and Almeida and Carneiro 2012). Studies in ECA, SAR and EAP have also found that lower levels of enforcement are associated with higher rates of informality (Box 3.4). Regulatory and tax compliance rates increase more if increased labor or tax inspections are accompanied by other measures such as awareness campaigns (Rani et al. 2013).

**Reducing corruption.** In ECA, where informality rose considerably following the disruptions associated with the collapse of the Soviet Union, higher corruption has been linked with higher informality (Friedman et al 2000). Economies in ECA that were slower to implement structural reforms and control corruption in the 1990s saw a smaller-than-average decline in informality (Kauffman and Kaliberda 1996). Corruption is also a key disincentive to enter the formal sector in MENA according to firm surveys.

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3 Fernandez and Villar (2016); Fajnzylber, Maloney, and Montes-Rojas (2011); and Monteiro and Assunção (2012).
Informality declined in EMDEs during the period 1990-2016, with the share of output dropping especially in East Asia and the Pacific, Latin America and Caribbean, and South Asia.

Causes and implications of informality

Causes of informality. Theoretical models present two major reasons for the emergence of informal activity: lack of development (Harris and Todaro 1970; Loayza 2016), and poor governance including burdensome regulations, corruption, or poor public services (de Soto 1989).

- Lack of development. Informality has often been attributed to under-development. This reflects an inability of an urban modern formal sector to absorb rural migrants during the urbanization process (Harris and Todaro 1970; Fields 1975; Loayza 2016). Development can further shrink the informal sector because households tend to shift away from agricultural and informal sector goods as their incomes grow (Saracoglu 2008). Finally, limited access to credit, often associated with less development, constrains informal firms’ ability to overcome barriers to entry into the formal sector.

- Heavy-handed regulation. Higher taxation and heavy-handed regulation increases firms’ incentives to reduce taxation or the cost of regulatory compliance by remaining informal (Ihrig and Moe 2004; Amaral and Quintin 2006; D’Erasmo and Boedo, 2012; Auriol and Walters, 2005; Prado 2011; Kanbur 2017; Dabla et al. 2018; Ulyssea 2018). Excessive labor regulations encourage informal
employment by increasing the cost of formal employment (Rauch 1991; Loayza 2016).

- **Poor governance.** Corruption and rent-seeking bureaucracies increase firms’ incentives to avoid interaction with the state by remaining informal (Sarte 2000; Choi and Thum 2005; Freidman et al. 2000). Conversely, access to productivity-enhancing public goods, such as to electricity or the court system, can lead to an increase in the share of formal production (Mendicino and Prado 2014).

**Implications of informality.** A sizeable informal sector could impede growth, encourage poor governance, and limit a government’s ability to reduce income inequality.

- **Slower growth.** A sizeable informal sector that competes with the formal sector for low-skilled workers reduces the incentives to invest in human and physical capital and new technologies and slows growth in the long run (Docquier, Muller and Naval 2017; Loayza 1996; Sarte 2000).

- **Poor governance.** Several theoretical models attribute corruption and excessive regulations to the presence of an informal economy. Government officials are incentivized to impose excessive regulations and permits to have the power to collect bribes in return for providing permits (Shleifer and Vishny 1993). Others have argued that the government strategically designs a system of poor governance to promote informality for the poor, which acts as an alternative redistributive strategy (Marjit, Mukherjee and Kolmar 2006).

**Correlates of informality**

The causes and implications of informality predicted by theoretical models are also confirmed by empirical studies as many correlates of informality are symptoms of under-development. A large informal economy is associated with weaker economic outcomes, such as a under-development, less access to credit, limited trade openness, less skilled labor force, as well as weaker output, investment and productivity growth (Box 3.3). Informality is also associated with less effective institutions, such as weak governance and excessive tax and regulatory burdens (Loayza, Oviedo, and Serven 2006; Enste and Schneider 1998).

**Under-development.** A lower level of development, as measured by per capita income, is associated with higher informality (Figure 3.6). In the case of both output and employment informality, GDP per capita in countries with below-median ("low") informality is about 2-3 times of those in countries with above-median ("high") informality (Figure 3.6). The lower productivity and resource misallocation associated with higher informality may also be reflected in slower output growth.

**Slower accumulation of physical and human capital.** A larger informal economy is associated with
BOX 3.3 Casting a shadow: Productivity in formal and informal firms

The average informal firm in emerging markets and developing economies (EMDEs) is only one-quarter as productive as the average firm operating in the formal sector. Moreover, firms in the formal sector that face informal competition are, on average, only three-quarters as productive as those that do not. This suggests that competition from the informal sector can erode formal firms’ market share and resources available to boost productivity where formal firms shoulder the additional cost of regulatory compliance. More effective governance and stronger control of corruption can help mitigate these effects.

The productivity differential between formal and informal firms is well established in the literature (Loayza and Rigolini 2006; Oviedo 2009). However, there is mixed evidence on the impact of a large informal sector on formal firms’ productivity. Some studies suggest that the informal and formal sectors operate independently so that there are no productivity spillovers (La Porta and Shleifer 2014). Others report that competition from the informal sector may erode the profitability of firms that operate in the formal sector, which leads to limited resources to enhance firm productivity. The aggregate effect depends on country characteristics.

Against this backdrop, this box documents the productivity gap between formal and informal firms and their interactions. Specifically, it addresses the following questions:

• How large is the productivity differential between formal and informal firms?

• To what extent are formal firms exposed to informal competition?

• How does informal competition affect the productivity of formal firms?

Productivity differential between formal and informal firms

Literature review. The literature documents that informal firms in EMDEs are less productive than formal firms, with a productivity gap ranging between 30 to 216 percent (Perry et al. 2007, La Porta and Shleifer 2008). This productivity gap between informal and formal firms is attributed to modest technological improvements, reliance on unskilled labor, limited economies of scale, and restricted access to services, markets, and funding. Moreover, labor productivity varies within the informal sector along different dimensions such as firm size and type of activity (Amin and Huang 2014, Amin and Islam 2015).

Methodology. In this box, the productivity gap between formal and informal firms is estimated using World Bank’s Enterprise Survey data collected over a period spanning 2007 to 2014 for a cross-section of 4,036 informal firms and 7,558 formal firms in 18 EMDEs (Annex Table 3.1). Formal firms are those that comply with tax, customs, labor, and licensing regulations and register with the relevant authorities; unregistered firms belong to the informal sector. To estimate the productivity gap, a measure of labor productivity—log annual sales in 2009 U.S. dollars per worker—is regressed on a dummy variable that takes the value 1 for informal firms and 0 otherwise and a set of control variables capturing additional firm characteristics (employment size, time in business, location, sector, country).

Lower productivity in informal than formal firms. Virtually across the board, firm-level labor productivity is much lower in the informal sector than in the formal sector (Annex Table 3.1). The productivity differentials vary widely in this sample, from 48 (Cote-d’Ivoire) to 93 percent (Argentina). On average across the whole sample, the productivity of informal firms is only one-quarter of the productivity of formal firms (Figure 3.3.1).

Drivers of productivity gap between informal and formal firms. Firm size, age, location in the capital city and manager experience are associated with significantly larger productivity gaps between informal and formal sectors (Figure 3.3.1, Annex Table 3.2). Formal firms appear to be better equipped to reap the productivity benefits from size, age, and location than informal firms.

• Firm age. As firms grow older, they are either sufficiently productive to survive or they disappear.

Note: This box was prepared by Mohammad Amin and Cedric Okou.

1 Gonzalez and Lamanna (2007); Heredia et al. (2017); Mendi and Costamagna (2017).

2 Jovanovic (1982); Amaral and Quintin (2006); Galiani and Weinschelbaum (2012).

3 Exceptions are Democratic Republic of Congo and Cabo Verde possibly due to a low productivity of formal firms.

4 The results are robust to comparing the coefficient estimates for the informal-firm dummy between a baseline regression including all controls and an alternative regression dropping each dummy one at a time (Annex Table 3.2).
BOX 3.3 Casting a shadow: Productivity in formal and informal firms (continued)

FIGURE 3.3.1 Characteristics of informal firms

Among informal firms, those with managers with higher education and those without any employees other than the owner are significantly more productive. The average informal firm in emerging markets and developing economies has only one-quarter of the productivity of the average firm operating in the formal sector. This productivity differential between formal and informal firms is particularly pronounced among larger and older firms that operate in the capital city and are led by experienced managers.

A. Average productivity in formal and informal firms

- U.S. dollars per worker; thousands

B. Productivity differential between different types of informal firms

- Percent

C. Productivity differential between formal and informal firms, by type of informal firm

- Log productivity differential

Notes: World Bank’s Enterprise Survey data for 135 countries (2008-18). Labor productivity is proxied by the annual sales in 2009 U.S. dollars per worker.
A. Labor productivity in the average formal and average informal firm, controlling for firm characteristics (firm size and age, manufacturing sector activity, location in the capital city and country fixed effects) as shown in column (1) in Annex Table 3.2.
B. Cross-country average of percent difference between labor productivity in the median informal firm with a manager with higher education or without any employees other than the owner, and the median informal firm with a manager without higher education or with more employees than the owner. Estimates from Annex Table 3.1.
C. Difference in log of labor productivity between the average formal and average informal firm in each group, as estimated in coefficient estimates of Annex Table 3.2. “Other” stands for “not located in capital city”; “Cap.” stands for “located in capital city.”

(“selection effect”; Brandt et al. 2012). In addition, learning from experience may have taught older firms productivity gains (“learning effect”; Luttmer 2007). These effects appear to be much more pronounced among formal firms than among informal firms. As a result, the productivity differential between formal and informal firms widens as the age of firms increases. Among one-year-old firms, informal firms have about half the productivity of formal firms. Among ten-year-old firms, informal firms have less than one-quarter the productivity of formal firms.

- **Firm size.** Larger firms can reap economies of scale that raises their productivity compared to smaller firms. Again, in this sample, this effect appears to be stronger among formal firms than among informal firms. Among firms with one employee, informal firms have just under one-third the productivity of formal firms; among firms with ten employees, informal firms have less than one-quarter the productivity of formal firms.

- **Firm location.** Capital cities are typically among countries’ largest economic centers and so can offer agglomeration benefits: larger markets, better infrastructure to access markets and operate, a larger pool of workers, greater technology spillovers (Rosenthal and Strange 2004; Duranton and Puga 2004). Again, formal firms appear to be better able to benefit from these locational advantages, but the effect is economically modest (although statistically significant). Among firms operating inside the capital city, informal firms’ productivity is 31 percent that of similar formal firms; outside the capital city, informal firms’ productivity is 30 percent that of similar formal firms.

- **Manager experience.** Managerial ability has been associated with higher productivity, through a variety of channels including hiring decisions and input choices (Fernandes 2008). Again, managerial experience appears to benefit formal firms’ productivity more than informal firms’ productivity. Among firms managed by managers with one year of experience, informal firms’ productivity is just over one-third that of formal firms; among firms with managers with ten years of experience, informal firms’ productivity is less than one-quarter that of formal firms.
BOX 3.3 Casting a shadow: Productivity in formal and informal firms (continued)

Productivity differentials across informal firms. Labor productivity also differs across different types of informal firms, although the characteristics that are associated with higher labor productivity of informal firms differ across countries. In two-fifths of countries, informal firms managed by a manager with higher education or without any employees other than the owner are significantly more productive than other informal firms (column (1) in Annex Table 3.2). Other informal firm characteristics, such as operating in the services sector or being a startup, are accompanied by higher productivity in some countries but lower productivity in other countries.

Impact of informal competition on formal firms: Theory. The extent of competition between formal and informal firms depends on the underlying reasons for the existence of informal firms.

Informality as a survival strategy of unproductive firms. Low-productivity firms may be forced into informal operations or, even if they operate formally, employing informal workers because this may reduce their costs (Ulyssea 2018; Boly 2018). Operating in the informal sector and employing informal labor may, therefore, be a survival strategy for less-productive firms that belong to fundamentally different markets (La Porta and Shleifer 2014). “Surviving” informal firms are likely to operate in very different markets and sell different products than formal firms (La Porta and Shleifer 2014). In such circumstances, competition between informal and formal firms and its impact on formal firms may be limited.

Informality as an evasion strategy of productive firms. Some informal firms may be sufficiently productive to survive in the formal sector yet choose to remain informal to benefit from the cost advantage of noncompliance with (possibly excessive) taxes and regulations (Maloney 2004; de Mel, McKenzie, and Woodruff 2011). Such informal firms could constitute an untapped potential for a productivity boost (De Soto 1989). On the other hand, they can create aggressive competition with formal firms that do shoulder semi-formally: they sell their output into formal product markets but employ, in part, informal labor.


FIGURE 3.3.2 Formal firms facing informal competition

On average, more than half (55 percent) of formal firms reported facing informal competition. Nearly 60 percent of formal firms in EMDEs were exposed to informal competition whereas 47 percent of formal firms in advanced economies reported facing informal competition. The degree of informal competition reported by formal firms was higher for smaller than larger firms but comparable across sectors or formal firms’ productivity.

| A. Formal firms reporting competition from informal firms, by country |
| B. Formal firms reporting competition from informal firms, by firm size |
| C. Formal firms reporting competition from informal firms, by firm sector |


6 This discussion assumes that firms are either formal or informal. In practice, the degree of informality can vary (Perry et al 2007; Ulyssea 2018). At the extensive margin are firms that operate fully informally, in product markets and labor markets. They sell their output informally and employ informal labor. At the intensive margin are firms that operate
**BOX 3.3 Casting a shadow: Productivity in formal and informal firms (continued)**

**FIGURE 3.3.3 Productivity of formal firms facing informal competition**

On average, formal firms that face informal competition have only three-quarters of the productivity of firms that do not face informal competition, after controlling for firm characteristics. Better business climates and governance and more economic development can narrow this productivity differential.

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A. Productivity differential of formal firms with and without informal competition, by intensity

B. Productivity differential of formal firms with average informal competition and without, conditional on level of development

C. Productivity differential of formal firms with average informal competition and without, by business climate indicator

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**Notes:** Based on coefficient estimates from Annex Table 3.3. Annex Table 3.3. shows results from an OLS regression with labor productivity as the dependent variable, as proxied by annual sales (in 2009 U.S. dollars) per worker, in a sample of World Bank’s Enterprise Survey data collected during 2007-14 for 4,036 informal firms and 7,558 formal firms in 18 countries.

A. Figure shows log productivity differential between formal firms facing informal competition and formal firms not facing informal competition. Maximum informal competition assumes that all firms in a cell face informal competition; average informal competition assumes that 55 percent of firms in a cell face informal competition. B.C. Figures shows log productivity differential between formal firms facing informal competition and formal firms not facing informal competition, conditional on development and institutional quality. Assumes that 55 percent of firms in a cell face informal competition. Each bar conditions on the GDP per capita (B), control of corruption (C), ease of doing business (C), or business freedom index (C) of the median country in the top (“highest quartile”) or bottom (“lowest quartile”) quarter of countries in terms of GDP per capita, control of corruption, ease of doing business or business freedom index.

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the additional cost of tax and regulatory compliance. Such informal competition can reduce the profitability necessary for formal firms to invest in productivity-enhancing new technologies or to innovate, especially in a context of weak property rights enforcement. Alternatively, this very competition could force formal firms to increase productivity or, for the lowest-productivity ones, to exit.

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Extent of informal-firm competition for formal firms. In the World Bank’s nationally representative survey data for 75,137 formal (registered) firms in 135 countries between 2008 and 2018, about 55 percent of formal firms reported facing competition from informal firms. The share of informal firms competing against formal firms was about 60 percent in EMDEs, 13 percentage points higher than in advanced economies. The level of competition varied widely across countries, ranging from about 7 percent in Bhutan to 95 percent in Uganda. Smaller firms were significantly more likely to be exposed to informal competition than larger firms but there is little evidence of any other systematic difference between firms that were exposed and those that were not (Figure 3.3.2).

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**Productivity of formal firms facing informal competition**

**Methodology.** OLS regressions are used to estimate the difference in labor productivity between formal firms that compete against informal firms and those that do not. In the baseline specification, the dependent variable is again
labor productivity measured by the (log of) annual sales in 2009 U.S. dollars per worker. The main explanatory variable is the informal competition indicator proxied by the proportion of formal firms in a cell that report facing competition from informal firms. A cell is defined as a group of firms of similar size and in the same region and sector.\footnote{As a caveat, the informal competition faced by a specific firm may also be driven by its productivity, thus generating endogeneity concerns. To address possible endogeneity issue, we use the proportion of formal firms facing informal competition in a group of firms of similar size in the same region and sector (a “cell”) rather than a firm dummy. A cell proportion should be much less correlated with the productivity of a specific firm, and therefore, should be more robust to endogeneity concerns.}

Productivity gap between formal firms with and without informal competition. Formal firms that face informal competition are, on average, 24 percent less productive than those that do not (Figure 3.3.3, Annex Table 3.3). After controlling for the informal competition, formal firms in the manufacturing and retail industries have higher productivity than those in other services. Older, exporting, and foreign-owned formal firms also have higher productivity even if they face competition from informal firms.

Role of the business climate and development. Economic development and the business climate may substantially shape the productivity gap between formal firms that face informal competition and those that do not. This is captured in interaction terms between the share of similar formal firms reporting informal competition and indicators of development (the logarithm of per capita GDP), the quality of business climate as proxied by the distance to the frontier in the Doing Business Index, the control of corruption of the World Governance Indicators, and the Business Freedom index of the Economic Freedom indicators; Annex Table 3.3). Higher GDP per capita, better control of corruption, and a business environment that is freer and closer to best-practices dampen the detrimental impact of informal competition on formal firm productivity.

- Development. The sample is split into those countries with per capita income in the highest quartile in the sample and those in the lowest quartile in the sample. Formal firms that face informal competition in the average country with the highest per capita incomes are only 14 percentage point less productive than formal firms that do not face such competition. In contrast, on average in countries in the lowest quartile of per capita incomes, formal firms facing informal competition are 30 percent less productive than those firms that do not face such competition.

- Control of corruption. Again, the sample is split into those countries in the quartile of countries with the strongest control of corruption and those in the quartile with the weakest control of corruption. In countries with the strongest control of corruption, on average, formal firms that face informal competition are only 22 percentage point less productive than formal firms that do not face such competition, whereas in the countries with the weakest control of corruption, this differential grows to 35 percent.

- Ease of Doing Business. Similarly, the productivity differential between formal firms that face informal competition and those that do not might halve (to 21 percent) if a country like Angola (in the quartile of countries with the most difficult business climates) were to improve its business climate to the level of a country like the Former Yugoslav Republic of Macedonia (among the countries with the most conducive business climates).

Conclusion

The productivity gap between informal and formal firms is substantial in EMDEs, averaging 75 percent in a sample of 18 EMDEs between 2007-14. Competition from informal firms also appears to weigh on the productivity of exposed formal firms: the productivity of formal firms that compete with informal firms is only three-quarters that of formal firms that do not compete with informal firms, after controlling for other firm characteristics. Improvements in the business climate, and economic development more broadly, can mitigate some of these negative productivity spillovers from informal to formal firms.
with a lower rate of output growth. This may reflect slower accumulation of physical or human capital (Ovedio et al. 2009). At the firm level, informality can limit access to conventional bank credit, because of a lack of documentation for assets and inadequate financial statements. Investment activity in the informal sector may also be subdued because informal firms may be unwilling to adopt technologies that would make them more visible to tax and other authorities (Dabla-Norris and Inchauste 2008; Gandelman and Rasteletti 2017). For example, about 11,600 firms that participated in Enterprise Surveys in 18 countries during 2007-2014, the fraction of firms that invested in any given year in the formal sector was significantly higher than that in the informal sector. In the long run, the tendency to hire less skilled workers in the informal sector may slow human capital accumulation. Indeed, countries with below-median informality tend to have significantly higher levels of human capital (Maloney, 2004; Docquier, Muller, and Naval 2017; Figure 3.6).

**Slower productivity growth.** At the macroeconomic level, the evidence for a correlation between productivity growth and informality has been mixed (Perry et al. 2007; D’Erasmo and Moscoso Boedo 2012). At the firm level, in contrast, many studies have shown that informal firms tend to be less productive than their formal counterparts; although this productivity differential in part reflects the characteristics of informal firms. On average, informal labor productivity is lower than total labor productivity in EMDEs, although not in advanced economies (Figure 3.6, Loayza 2018). In addition, competition from informal firms has been associated with lower productivity of formal firms. The presence of informal competitors, which do not shoulder regulatory and tax burdens, can reduce formal firms’ profitability, thus eroding their ability to invest in productivity-enhancing technologies or human capital (Perry et al. 2007, Box 3.3).

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20 See Koeda and Dabla-Norris (2008) for details. Empirically, greater access to credit has been associated with lower informality (Maloney 2004, Straub 2005, La Porta and Shleifer 2014).

Less trade openness. A smaller informal sector is associated with greater economic openness, especially to trade. On average, the trade-to-GDP ratio is lower by 17 percentage points in countries with a greater share of self-employment than countries with a smaller share of self-employment (Figure 3.6). Similarly, higher capital account openness is associated with less output and employment informality. That said, the impact of major trade liberalization episodes on informality varies across countries and differs between the short- and the long-term (Box 3.4; Goldberg and Pavcnik 2003; Fugazza and Fiess 2010; Dix-Carneiro and Kovak 2017).

Heavier regulatory burden. Both empirical and theoretical studies suggest that heavier regulatory (or administrative) burdens may encourage informality as workers and firms join the informal sector to avoid regulatory and administrative compliance costs. The Doing Business distance-to-frontier scores for countries with below-median informality (by DGE estimates) is 60 points—which is significantly higher (by about 6 points or three-fifths of a standard deviation) than in countries with high (above-median) output informality (Figure 3.6). Similarly, the Business Freedom index is 7.5 points (about half of a standard deviation) higher in countries with low (below-median) output informality than in countries with high (above-median) informality.

Weaker governance. Research points to the contribution of poor governance to the pervasive informality in some EMDEs, especially in Latin America and the Caribbean and Europe and Central Asia regions (Box 3.2). On average, countries with above-median informality over the period 1990-2016 have had weaker government effectiveness (by about 0.6 points, or three-quarters of a standard deviation) than countries with below-median informality (Figure 3.6). Similar differences are found in the case of control of corruption and rule of law. For example, in Georgia, during the period 1996-2016, the transition to a market economy brought significant improvements in government effectiveness, control of corruption, and rule of law. With output growth averaging about 6 percent per year, the share of informal output fell from 66 percent to 57 percent of GDP, and the share of informal employment in total employment fell by a similar magnitude.

Footnotes:
22 Empirical studies, such as Goldberg and Pavcnik (2004 and 2007), Shama (2009), Boly (2018), and McCaig and Pavcnik (2018), show that informality declined following some trade liberalization episodes. Conversely, a short-term increase in informality has been attributed to trade liberalization amid inflexible labor markets in studies such as Goldberg and Pavcnik (2003), Attanasio, Goldberg and Pavcnik (2004), and Bosch, Goni-Pacchioni and Maloney (2012).
23 However, the trade-to-GDP ratio is not different between countries with a greater share of informal output than countries with a smaller share of informal output.
24 Perry et al. (2007); Ulyssea (2010); Buhn (2011); De Md, McKenzie, and Woodruff (2013); Rocha, Ulyssea, and Rachter (2018).
25 Loayza, Oviedo, and Serven (2006) find that poorer bureaucratic quality is associated with more informality. Choi and Thum (2005) and Dreher and Schneider (2010) report an association between higher informality and weaker law and order and control of corruption. Iriyama, Kishore, and Talukda (2016) show that firms are more likely to engage in corruption when facing competition from informal firms. Dabla-Norris, Gradstein, and Inchauste (2008) show that the quality of the legal framework is important in determining the size of the informal sector. Loayza and Wada (2010) estimate, for example, that 75 percent of the difference in labor informality between Peru and Chile is due to causes related to poor governance.
Correlates of the decline in informality since 1990. The decline in informality was larger in countries with the bigger improvements in governance and, for output informality, faster growth in GDP and investment, and better access to credit (Figure 3.7).26 Perceptions of informality appear to change much more slowly than actual informal output and employment shares. Since 2000, perceptions have shifted significantly (into a different quartile of informality) in only 14 percent of all EMDEs (Elgin et al. forthcoming a).

Informality, poverty and income inequality

Many studies document that informal-sector wages are below those in the formal sector, for a variety of reasons.27 This raises concerns that, over the long-term, informality may entrench earnings differentials and income inequality and may contribute to greater poverty in countries with high informality.28

Worker earnings differentials

Causes of wage differentials. Lower wage in the informal sector could result from different worker characteristics in the formal and informal sectors, possibly in response to the comparative advantage that some workers might have in informal sector activities, or to non-wage benefits that might accrue to work in the informal sector (Maloney 2004; Heckman and Li 2003). Alternatively, wage differentials could stem from rigidities and other factors that create a wedge in wages between similar workers in informal and formal employment. These factors can include labor

26 A panel regression suggests that faster declines in the share of agricultural employment and faster increases in the share of industrial employment are associated with larger long-term reductions in informality, controlling for per capita GDP.


28 The linkage between informality and poverty could also be due to the absence of better formal jobs in underdeveloped countries (Perry et al. 2007).
Empirical estimates of wage differentials. The estimates of the wage differential between informal and formal workers in the 18 studies selected here range from a formal sector wage penalty of 50 percent in Tajikistan (Huber and Rahimov 2014) to a premium of 113 percent in South Africa (El Badaoui, Strobl, and Walsh 2008). The average formal wage premium in the studies is 19 percent (Figure 3.8). This wage differential between formal and informal jobs is particularly wide in Latin America and the Caribbean and Sub-Saharan Africa but below-average in Europe and Central Asia and South Asia. It is also larger for informally employed than self-employed workers. Self-employed and contributing family members (predominantly women) constitute the majority of informal workers in developing Asia and Africa, whereas informal employees dominate the informal sector in Europe and Central Asia and in Latin America (ILO 2018b). Wage premia in the formal sector tend to be higher where informality is more widespread.29

Sources of observed wage differentials. The formal wage premium largely disappears in studies that control for unobserved characteristics of workers. Informal employment tends to be associated with lower education and with workers that are, on average, either younger or older than in the formal sector. It is also more prevalent in rural areas, where there are fewer alternatives in the formal sector, and among women (Hazans 2011; Gasparini and Tornarolli 2007). The informal sector employs more low-skilled labor than the formal sector, which can slow human capital accumulation in the long-run (Docquier, Muller, and Naval 2017). Thus, differences in characteristics of workers (e.g., education) largely account for the formal sector wage premium.

Methodology: Meta-Regression Analysis. A meta-regression analysis is employed to aggregate estimates of the formal wage premium from a set of studies to obtain a quantitative assessment of the sources of cross-study variation. The analysis focuses on 18 studies that test for the presence of significant wage differentials between formal and informal jobs, and its main sources (a detailed review of literature and methodology are presented in Annex 3.3). As is common practice in such meta-regression analyses, no study is excluded ex ante based on its source or its results, but rather the selection of studies is constrained to those that present numerical estimates with confidence bands for country samples since 2000.

29 Chong and Gradstein (2007), Amaral and Quintin (2006); Pratap and Quiten (2006), and Loayza, Serven, and Sugawara (2010).

30 This is in line with other studies that find an insignificant relationship between inequality and informality after controlling for institutional outcomes (Perry et al. 2007) or focus on causality running from inequality to informality (Chong and Gradstein 2007).
Cross-country studies have identified a menu of policies associated with lower informality. These policies have typically fallen into three categories: tax reform, regulatory reform, and trade liberalization.¹

- **Tax reform.** Lower tax rates, simplified tax systems, harmonized tax regulations, technology-based monitoring and consolidated electronic tax payment systems can encourage firms and workers in the informal sector to move to the formal sector.

- **Regulatory reform.** Lower minimum wages and lower barriers to worker recruitment and dismissal have been associated with lower informal activity. In addition, a wide range of institutional factors have been associated with reduced informality: more efficient legal systems, better property right protection, lower regulatory burden, less cumbersome registration processes, easier access to credit, and lower corruption.

- **Trade liberalization.** In Latin America, trade liberalization has often been followed by an increase in informal activity, unless accompanied by complementary measures to increase labor market flexibility.

Many EMDEs have implemented these types of reforms either with the explicit purpose of reducing informal activity, or for other purposes with collateral effects on informal activity. Many of these reforms were implemented as part of broad-based, multi-pronged reform packages. Against this backdrop, this box compiles a comprehensive review of single-country studies on the impact of policy changes on informal activity. Specifically, the box addresses the following questions:

- Which policy changes have been studied?
- What are the common lessons from these policy changes?
- What is the role of complementary policy measures?

**Studies of policy changes**

**Selection of studies.** 19 studies are selected based on two criteria: (i) they examine specific policy changes in a single EMDE and (ii) they measure an outcome that relates to informal activity, such as the share of informal workers or firms.² These studies cover 15 policy changes in Brazil (mid-1980s, 1990s, 2003), Colombia (1980s, 1990s), Egypt (1998, 2004), Georgia (2010), India (1988-2000, 2017), Indonesia (1996-2004), Mexico (2002-06), Pakistan (2009), Russia (2001), Turkey (2004-05), and Vietnam (1999-2013). Five of these country cases implemented tax changes, four implemented regulatory changes in labor markets, two implemented other regulatory changes, and four implemented trade liberalization measures (Annex Table 3.4).³

**Tax reform.** The studies examined both tax rate changes and tax simplification. In 2017, India streamlined and lowered the average tax rate of goods and services (Keats 2017). Georgia introduced a preferential tax regime for small businesses in 2010 (Bruhn and Loeprick 2014). Russia introduced a flat personal income tax and cut payroll taxes and social security contributions in 2001 (Słomnicki 2012). Conversely, Pakistan raised income taxes on noncorporate partnership firms in 2009 (Waseem

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¹ Lower tax rates have been associated with smaller informal sectors (Loayza and Rigolini 2006; Loayza 1996). Greater labor market flexibility has been associated with lower informality (Maloney 1999; Heckman and Pagés 2004; Oviedo 2009). Institutional reforms that improve the business climate have been accompanied by lower informal activity (Beck, Demirgüç-Kunt, and Maksimovic 2006; Bosch, Goni and Maloney 2007; Friedman, Johnson, Kaufmann and Zoido-Lobatón 2000; Loayza 1996; Loayza, Oviedo and Serven 2005; Loayza and Rigolini 2006; Monteiro and Assunção 2012; Perry et al. 2007; Rocha, Ulyssea, and Rachter 2018; Schneider and Enste 2000; Ulyssea 2018; Wellalage and Locke 2016). Trade liberalization in a context of labor market rigidity has been associated with higher informality (Goldberg and Pavcnik 2004; 2007).

² Studies are identified from the English-language repositories of academic articles and working papers, including EconLit, JSTOR, EBSCO, Google Scholar, RePEc, Social Science Research Network (SSRN), the National Bureau of Economic Research (NBER), World Bank Policy Research Working Paper Series, International Monetary Fund Working Paper Series, and IZA Working Papers.

³ Other studies documented the outcomes of randomized experiments and counterfactual prototypical policies in Benin, Brazil, Malawi and Sri Lanka (Benhassine et al 2016; Ulyssea 2018; Campos, Goldstein and McKenzie 2015; De Mel, McKenzie and Woodruff 2012).
BOX 3.4 Under the magnifying glass: How do policies affect informality? (continued)

2018). In addition to lowering the average tax rate for small firms, the SIMPLES reform in Brazil in 1996 simplified the tax and social security contributions regime for small firms (Fajnzylber, Maloney and Rojas 2011; Maloney and Mendez 2004).

Regulatory changes. A few episodes of labor market and other regulatory reforms have been studied. In 2001, as part of fiscal decentralization in Indonesia, minimum-wage setting responsibilities were transferred to provinces and local governments. The move was accompanied by a sharp increase in the average real minimum wage (Comola and Mello 2011). In 2004-05, Turkey implemented two employment subsidy schemes that strengthened incentives to register for the social security system (Betcherman, Daysal and Pages 2010). Mexico simplified business registration by introducing its Rapid Business Opening System (SARE) in various municipalities during 2002-06 (Fajnzylber, Maloney and Rojas 2011).

Trade liberalization. Several studies have examined episodes of major trade liberalization. Comprehensive trade liberalizations with drastic tariff reductions were implemented in Colombia in the late 1980s and early 1990s. They followed Colombia’s GATT accession in 1981 (Goldberg and Pavcnik 2003; Attanasio, Goldberg and Pavcnik 2004). Egypt introduced gradual trade liberalization measures in 1998 and, more comprehensively, again in 2004 in the context of macroeconomic stabilization plans (Selwaness and Zaki 2015). In Vietnam, the U.S.-Vietnam bilateral trade agreement (BAT) came into effect in 2001 (McCaig and Pavcnik 2015 and 2018) and, in the span of ten years, turned the United States from Vietnam’s fifth-largest to its largest export destination between 1998 and 2008. The trade agreement was followed by reforms in 2006 to increase labor market flexibility. In 1988, Brazil took initial steps to liberalize trade but at the same time restricted labor market flexibility in its Constitutional Reform. The 1988 reform included cuts in maximum work hours, higher vacation pays, longer maternity leave, higher dismissal cost, and limits on union power (Bosch, Goni and Maloney 2007). In 1991, India liberalized trade, removed price controls, and removed license requirements in most industries (Sharma 2009).

Common lessons

Most studies have found the expected impact of these policy changes on informality (Figure 3.4.1). Tax simplification, tax cuts and regulatory easing tended to reduce informality. Trade liberalization tended to increase informality unless it was accompanied by increased labor market flexibility.

Tax simplification and tax cuts were associated with lower informality in India, Russia, Georgia and Mexico—in the form of greater formal firm registration (India, Brazil, Georgia), greater income reporting (Brazil, Russia), greater or a greater share of formal employment (Brazil, Russia). The reforms raised the number of registered firms by about 5 percent in Brazil and by 18-30 percent in Georgia (Bruhn and Loeprick 2014; Fajnzylber, Maloney and Rojas 2011). In India, the introduction of the General Services Tax has been credited with halving the share of informal firms (Keats 2017). Conversely, Pakistan’s corporate tax hike was followed by rising informality as firms switched business models and reported lower earning.

Regulatory changes to encourage reporting (Turkey) or simplify business registration (Mexico) were associated with greater formal employment and firm registration, whereas higher minimum wages were associated with greater informal employment. Employment subsidy schemes in Turkey raised the number of registered jobs in eligible provinces by up to 13 percent (Betcherman, Daysal and Pages 2010). In India, following broad-based industrial liberalization measures, the number of informal establishments fell faster (by 25 percentage points) in states with more pro-employer labor laws than in states with less flexible labor laws (Sharma 2009). A 5 percent increase in the number of registered firms was attributed to simplified business registration procedures in Mexico (Bruhn 2011, 2013). Conversely, in Indonesia a 10 percentage point increase in the minimum wage over the mean wage was associated by a 0.9-1.1 percent increase in informal employment (Comola and Mello 2011).

Trade liberalizations in Brazil, Colombia, and Egypt were typically associated with greater informality—unless accompanied by measures to improve labor market flexibility. During Colombia’s trade liberalization in the 1980s and 1990s, a 10-percentage point decline in tariffs in a given industry was associated with a 1 percentage point increase in the probability of informal employment—but only for the period preceding a major
labor market reform that increased labor market flexibility (Goldberg and Pavcnik 2003; Attanasio, Goldberg and Pavcnik 2004). In Egypt, the trade liberalization of 1998 was associated with increased informal employment whereas the trade liberalization measures of 2004—which were preceded by 2003 reforms to increase labor market flexibility—were not (Selwaness and Zaki 2015). Similarly, trade liberalization accompanied by measures to reduce labor market flexibility, such as in Brazil in the late 1980s and early 1990s was accompanied by rising informal employment (Bosch, Goni and Maloney 2007). In Vietnam, rapid export growth was associated with a 5 percentage point higher share of formal manufacturing employment, a growing share of formal employment, and shrinking informal employment (McCaig and Pavcnik 2018; Boly 2018).

Role of complementary policy measures

Several of the policies discussed above were not primarily implemented with informality in mind. Yet, they had the unintended consequence of raising informality: tax increases in Pakistan, decentralization of minimum wage regulation in Indonesia, and trade liberalization in Egypt, Brazil and Colombia. Other reforms did not have as large an effect on informality as expected, such as the tax reform in Georgia. Three factors accounted for these: interactions between multiple reforms; scale of reform; and enforcement.

Interactions between multiple reforms. In Egypt, trade liberalization implemented in a supportive environment, with reforms to increase labor market flexibility, was associated with lower informality in 2004 but, in the absence of labor reforms, informality increased following the 1998 trade liberalization. Similarly, trade liberalization combined with increased labor market rigidities raised informality in Brazil in the late 1980s and early 1990s. When product markets are restructured, such as during trade liberalization, greater labor market flexibility facilitated the reallocation of workers to more competitive industries. A large share of unskilled labor may also have increased the likelihood that trade liberalization raised informal employment (Loayza and Rigolini 2006; Selwaness and Zaki 2015). In Brazil, Colombia, and Vietnam, the increase in informal employment was particularly pronounced among less skilled workers (Goldberg and Pavcnik 2003; McCaig and Pavcnik 2015).

Scale of reform. Some reforms were simply too narrowly targeted to have a sizeable or lasting impact on informality. For example, the short-lived impact of tax reform in
Georgia—found only in the first year—has been attributed to the modest scale of the reform (Bruhn and Loeprick 2014).

**Weak enforcement.** Particularly in environments with weak enforcement of firm and employment regulation, higher taxes or minimum wages can encourage informal activity. In Pakistan, Turkey, and Indonesia, weaker enforcement was associated with greater informality.

结论

The studies of microeconomic impacts of policy changes are a reminder of the importance of comprehensive reform packages. Several of the packages discussed above, as an unintended consequence, raised informal employment or firm activity. Such unintended reform impacts can be mitigated by bundling mutually reinforcing reforms, such as trade liberalization with labor market reform, or tax and minimum wage hikes with strengthened enforcement and public awareness campaigns.

**BOX 3.4 Under the magnifying glass: How do policies affect informality? (continued)**

Conversely, the decline in poverty rates across all EMDEs regions (and especially in South Asia and Sub-Saharan Africa) during 2005-15 was accompanied by a contraction of informal activities (Figure 3.8). At the country-level, a larger informal economy is associated with a higher poverty headcount (Figure 3.9). However, the direction of causality between informality and poverty remains an open question.

**Regression analysis.** The relationship between pre-existing informality and changes in the share of the population living in extreme poverty (i.e., the poverty headcount ratio at $1.90 a day at 2011 PPP exchange rate in percent of the population) or the Gini coefficient (World Bank estimates) is estimated in an ordinary least squares regression. Specifically, the annual average change in the poverty headcount ratio (or Gini coefficient) between the latest (in the period 2011-16) and earliest available data (in the period 1990-2005) for up to 74 countries is regressed on 1990-2005 average informality. To mitigate concerns about endogeneity, time horizons considered for informality measures precede those for the change in the poverty rate or Gini coefficient (Loayza, Serven and Sugawara 2010; Annex 3.4). The regression controls for the initial level of poverty (or Gini coefficient) and income per capita, using the earliest available income data.

**Pre-existing informality and changes in poverty.** The estimated impact of pre-existing informality on changes in the poverty rate (but in this sample not on inequality) is statistically significant (Figure 3.9). The association with changes in poverty is similar for employment and output informality. In the average EMDE, the share of extreme poor in the population (the headcount ratio) declined by about 0.8 percentage point between 2011 and 2016. These estimates imply that a country with a 10 percentage points higher share of informal output than its peers witnessed 0.1 percentage point slower poverty reduction per year.

**Informality and fiscal outcomes**

A large informal economy erodes the tax base and constrains governments’ ability to provide public services, conduct countercyclical policies, serve debt, and implement redistributive measures (Chapter 4; Ordonez 2014; Besley and Persson 2014). This puts a premium on designing tax and social security systems that avoid unintended incentives to shift activity from the formal to the informal sector and level the playfield for both formal and informal sectors (Perry et al. 2007; Djankov et al. 2010; Loayza 2018; Dabla-Norris et al. 2018).

**Revenue outcomes.** Regardless of the measure of informality, on average, government revenues in

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EMDEs with the most pervasive informality have been 5-10 percentage points of GDP below those with the least pervasive informality (Figure 3.10). The composition of tax revenues is tilted towards trade taxes in economies with more pronounced informality. Revenues from trade taxes have been 0.7-1.0 percentage points of GDP higher in EMDEs with greater informality compared with those with the lowest levels of informality. Income tax revenues, in contrast, tend to be lower in the EMDEs with the highest output informality. Greater reliance on indirect taxation makes the tax system less progressive and, hence, less redistributive than a system based on more progressive direct taxation.

**Expenditure outcomes.** Revenue weakness is also reflected in lower government expenditures. In EMDEs with the most pervasive informality, government expenditures were 4-10 percentage points of GDP lower than in those with the lowest informality (Figure 3.10). Insufficient resources for redistributive policies may contribute to the correlation between informality and poverty.

**Policy options**

Many EMDE governments implemented policies at the microeconomic level and found that the implications for informality were more benign when these reforms were implemented in a supportive institutional and macroeconomic environment. For instance, trade liberalization programs that raised real wages and reduced firms’ profitability in the tradable sector were associated with greater informality in the short-term—unless they were accompanied by higher labor market flexibility and more skilled labor force (Box 3.4; Goldberg and Pavcnik 2003; McCaig and Pavcnik 2015).

Country experiences suggest the need for a comprehensive development strategy that is informed by the drivers of and challenges posed by informality and carefully tailored to country circumstances. Policies that seek to improve fiscal accounts, such as strengthened tax administration or streamlined tax regulations, can be associated with lowering informality in some economies. Separately, policies that aim at invigorating private sector activity and productivity and leveling the playfield for all workers and firms, particularly measures to make the labor market more flexible, the regulatory framework more adaptable, and governance more effective, can lower informality and/or improve the working conditions in the informal sector. Finally, supportive macroeconomic and social policies (such as enhancing public service and social protection) can ease the implementation of these reforms and facilitate a smoother transition from the informal sector to the formal sector.

These policy measures can help lower informality while also spurring growth more broadly. They should be accompanied by strengthening the basic social safety nets to preserve incomes of vulnerable groups. Disruptions to formal activity from interventions to lower informality could be mitigated by reforms to increase labor and product market flexibility.

**Fiscal policy measures**

Some countries have implemented reforms to reduce the fiscal impact of informality on the state’s ability to provide public goods and, in the collection process, to reduce fiscal barriers or incentives for firms to operate informally.
\textbullet\ Value-added taxation (VAT) can help strengthen tax collection even in the presence of a sizable informal sector (World Bank 2018b). Since informal firms would not be allowed to claim VAT refunds on taxed inputs, the VAT would implicitly serve as an input tax (De Paula and Scheinkman 2010; Loayza 2018). Conversely, more effective VAT administration, including through digitalization of receipts, could significantly raise tax revenues while also increasing incentives to register for tax refunds.\textsuperscript{33}

\textbullet\ Better tax morale, reflecting the perception that tax dollars are spent judiciously (for the appropriate objectives and in the correct way), can encourage greater tax compliance and lessen informality (Sung, Awasthi and Lee 2017). Measures to cultivate better tax morale include appeals to people to declare their activities, campaigns to encourage a culture of commitment to declaration, and efforts to change perceptions of the tax system’s fairness (Williams and Schneider 2016). Tax systems that create an unlevel playfield for different types of firms (e.g., size-dependent tax policies) and encourage informality may warrant reform.

\textbullet\ An improved provision of public goods and services, such as better education or infrastructure, could help improve the productivity in both formal and informal sectors (Oviedo, Thomas, and Karakurum-Ozdemir 2009; Benjamin and Mbaye 2012, Kim, Loayza, and Meza-Cuadra 2016; World Bank 2018b).

\textbullet\ Social security systems can be reformed to reduce the incentives to hire informal workers.\textsuperscript{34} Measures include steps to shift the

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\textsuperscript{33} See Loayza (2018) for a detailed discussion on how to reform the social security system to reduce informality. See World Bank (2018b) for a discussion on how to provide better social security to informal workers. Levy (2008) and Maloney (2004) suggest that establishing parallel non-contributory systems in the presence of informality could further encourage informality.

burden of payments of contributions from employers to employees (e.g. in Latvia, Poland, Slovenia), to reduce employers' social security contributions (e.g. in Bulgaria), and to link social benefits to personal contributions (e.g. in most EU 27 countries; Oviedo, Thomas, and Karakurum-Ozdemir 2009). Transitions from an employment-based social security system to a well-designed model of risk sharing can provide a better safety net for informal workers and help protect both formal and informal workers during economic downturns (World Bank 2013 and 2018a; Box 3.1).

Business climate and governance measures

Many reforms that are designed to invigorate private sector growth can also help reduce informality, such as reducing corruption, improving business climates and governance, strengthening enforcement, or liberalizing labor and product markets, including through trade liberalization. Policy measures that narrow the earnings gap between informal and formal workers or those that reduce the productivity gap between informal and formal firms (for example, through measures to improve education or expand access to conventional sources of credit) can also help lower the extent of informal activity. Trade liberalization, however, may encourage informality in the short-term unless complementary reforms are implemented (Box 3.4; Figure 3.11).

Labor regulations. Over the past decade, governments—especially in ECA, SSA and, more recently, LAC—have implemented reforms to increase labor market flexibility. These include less restrictive regulations with respect to hiring and firing, to working arrangements, and to wage rates. Other types of policy changes, such as providing incentives for worker registration (e.g. legalization of undocumented workers) and improved enforcement of existing labor laws, may also encourage workers to move to the formal sector (Anand and Khera 2016; Munkacsi and Saxegaard 2017). For example, Japan has allowed undeclared workers to claim certain social benefits, thereby improving the monitoring of their employment. In countries with large rural populations, easing labor market regulation could play an important role in enabling workers to move into the urban, more productive and more modern sectors (Annex Figure 3.5.1, Annex 3.5, Loayza 2016).

Firm regulations. A variety of measures can encourage firms to participate in the formal sector. For example, formal entry of firms can be facilitated and encouraged by creating “one-stop-shop” registration to simplify the process (e.g. in Australia, Belgium, Ukraine), training and business services can be provided to firms that register (e.g. in Mexico and Malawi, Campos, Goldstein, and McKenzie 2018), and access to credit can be made easier for firms in the formal sector. EMDEs in the ECA and SSA regions have implemented an above-average number of reforms to reduce the costs of starting a business during the past decade (Figure 3.11). Easier firm registration and lower registration costs can also encourage the entry of young and productive firms, which can boost the productivity of the economy (Haltiwanger, Jarmin, and Miranda 2013; Nguimkeu 2015; Loayza 2018).

Regulatory enforcement. While other policy options increase the benefits of joining the formal economy, stricter enforcement can increase the cost of remaining in the informal economy. Policy options include increasing the frequency of inspections (in most EU15 countries and Bangladesh), creating a national-level firm or employee registry (in Poland), and launching

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35 Kuddo (2018) shows that about 60 percent of the reforms passed between 2007 and 2017 throughout the world aimed at improving labor market flexibility.

36 Loayza (2016) develops a theoretical model that traces informality, government regulations, economic growth and urban migration through the process of development. The model highlights the potential effect of the minimum wage on labor misallocation and on capital accumulation. A higher minimum wage slows capital accumulation and pushes workers into the informal economy. See Annex 3.5 for details. Caballero et al. (2013) show that job security regulation hampers the creative-destruction process, which could impede growth.

public awareness campaigns regarding tax compliance (e.g. in China and Korea). However, these enforcement measures tend to be most effective when implemented in conjunction with steps to improve the governance and business climate (e.g. making the labor market flexible) and when they are applied even-handedly to both formal and informal firms (Loayza 2018).

**Tailoring implementation.** Cross-country experiences also highlight the importance of a country-specific implementation plan: each reform component requires a diagnosis of the country’s current situation, followed by specific reforms to address the main weaknesses associated with and underlying sources of informality (Loayza 2018). In SSA, SAR, and the non-GCC economies of MENA, for example, general education and training programs to raise human capital could be prioritized (Box 3.2, Boxes 2.1-2.6). In LAC, reducing particularly high tax and regulatory costs to businesses could incentivize firms to join the formal sector. In ECA, improving government effectiveness and reducing corruption could be policy priorities. The success of implementation also depends on careful monitoring of potential unintended consequences and a supportive macroeconomic, political and institutional environment. The latter ensures the political and fiscal viability of the implementation and reduces the transition costs for workers moving from the informal sector to the formal sector.

**Emerging policy opportunities and challenges**

**Human capital adaptability.** The emerging “gig” economy poses opportunities and policy challenges with its higher accessibility, more fluid labor arrangements, and greater reliance on digital technology than more traditional forms of informality. Since “gig” workers do not fully participate in the social security system, they are, by some definitions, informal workers (Loayza et al. 2009). Regulatory changes, especially in the context of social security systems, may be needed to ensure that “gig” workers’ economic risks are manageable and that they do not permanently lose access to the formal economy (World Bank 2014, 2016 and 2018b). Since these workers will likely take on many different assignments over the course of their careers, the ability to learn and adapt will be essential. Policies can support this adaptability with more provision of education and (re)training programs (World Development Bank 2018b).
Emphasis should also be given to the development of cognitive skills in primary and secondary education or via intentional instruction at earlier ages, and the improvement of the terms of employment (Almeida, Behrman and Robalino, 2012; World Bank, 2018a and b).

**Leveraging new technology.** New technologies offer governments an opportunity to both reduce the incentives for and increase the cost of operating informally. For example, new technologies can also help strengthen tax administration and improve access to finance, including by improving the ability to broaden the tax net and assess credit worthiness (Gupta et al., 2017; Junquera-Varela et al., 2017; Awastchi and Engelschalk, 2018; Capasso, Monferra, and Sampagnaro, 2018). Digitalization can lower regulatory burdens, thus reducing the cost of operating in the formal economy. For example, Costa Rica reduced the time required to register a business by digitizing tax registration records and company books in 2009 (Doing Business 2009). This was followed by a drop in the share of informal employment by 4 percentage points of total employment and a fall in the share of informal output by about 2 percentage points of official GDP during 2009-16. Similar reforms have been carried out in Guyana (2010) and Kenya (2011) (Doing Business 2010 and 2011).
ANNEX 3.1 Measures of informality

The database includes most informality measures employed by the literature. These measures cover up to 187 economies (36 advanced and 151 emerging market and developing economies) for as much as 1990-2016 (Annex Table 3.1.1). Measures can be divided into indirect (model-based) estimates and direct (survey-based) estimates.

Indirect estimates

Previous studies use various indirect approaches to estimate the size of the informal sector, including the currency-demand approach (e.g. Ardizzi et al. 2014), and the electricity-demand approach (e.g. Johnson et al., 1997; Lacko 2000), the Multiple Indicators Multiple Causes (MIMIC) model (e.g. Schneider, Buehn, and Montenegro 2010), and the Dynamic General Equilibrium (DGE) model (e.g. Ihrig and Moe 2004; Elgin and Oztunali 2014; Orsi et al. 2014). Among all indirect estimation methods, the MIMIC and DGE models stand out in their year and country coverage. The other two indirect approaches, i.e. the electricity-demand approach and the currency-demand approach, suffer from limited data availability and theoretical caveats (see Ahumada et al. 2007; Schneider and Buehn 2016 for details). Therefore, the MIMIC and DGE models are used here to estimate the size of the informal sector.

The multiple indicators multiple causes model (MIMIC). The Multiple Indicators Multiple Causes model is a model of structural equations that can be applied to estimate the size of informal economic activity. There are two features of MIMIC that make it a preferred estimation approach for some researchers. First, it explicitly considers multiple causes of informal activity and captures multiple outcome indicators of informal activity. Second, it estimates informal activity across country and over time. The data on causes and indicators of informal activity identified in the literature are largely based on macroeconomic series in a panel setting and updated annually.

To estimate the size of the informal sector (i.e., in percent of official GDP) with the MIMIC model, this study closely follows Schneider, Buehn, and Montenegro (2010) Six causes and three indicators are used in the estimation to capture the hypothesized relationships between the informal sector (the latent variable) and its causes and indicators. Once the relationships are identified and the parameters are estimated, the estimation results are used to calculate the MIMIC index, which gives the absolute values of the size of the informal sector after a benchmarking procedure. The MIMIC approach delivers a panel of estimates (labelled as MIMIC) for 161 countries over the period 1993-2015.

Six causes and three indicators are used in the estimation (as in Schneider et al. 2010). The six cause variables used are: (1) size of government (general government final consumption expenditure, as a percent of GDP, obtained from UN, spliced with WDI) as proxy for indirect taxation; (2) share of direct taxation (direct taxes in percent of overall taxation, WDI); (3) fiscal freedom index obtained from Heritage Foundation as a tax burden variable in a wide sense; (4) business freedom index provided by Heritage Foundation; (5) the unemployment rate and GDP per capita to capture the state of the economy (obtained from WDI, the latter is spliced with WEO); and (6) a measure on government effectiveness provided by Worldwide Governance Indicators. The three indicator variables include: (1) growth rate of GDP per capita (WDI, spliced with WEO); (2) the labor force participation rate (people over 15 economically active as a percentage of total

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1 The limitations of the standard MIMIC model of Schneider, Buehn, and Montenegro (2010) and others include (e.g., Medina and Schneider 2018; Feige 2016): 1) the use of GDP (GDP per capita and growth of GDP per capita) as both cause and indicator variables, 2) its reliance on another independent study’s base-year estimates on the informal economy to calibrate the size of informal economy in percent of GDP, and 3) the estimated coefficients are sensitive to alternative model specifications and sample coverage.

2 Indirect approaches like the currency demand approach or the electricity approach condense the full range of informal activity across product and factor markets into just one indicator. However, the informal sector shows its effects in various markets (Schneider, Buehn, and Montenegro 2010), which would be captured better in a MIMIC model.
population, WDI, spliced with Haver analytics), and (3) currency as a ratio of M0 (currency outside the banks) over M1 (obtained from IMF IFS).

The estimation results from the model specification that ensures maximum data coverage (Annex Table 3.1.2) are used to generate the MIMIC index of the share of informal output relative to official GDP \((\eta)\). Then we conduct an additional benchmarking procedure where \(\eta_t\) is converted into absolute values of the informal sector \((\eta)\) using the following equation:

\[
\eta_t = \frac{\eta_t}{\eta_{2000}} \eta^*_{2000}, \tag{1}
\]

where \(t\) denotes year, \(\eta_{2000}\) is the value of the estimated index in the base year 2000, and \(\eta^*_{2000}\) is the exogenous estimate (base value) of the shadow economies in 2000. While the estimates \((\eta_t)\) determine the movement of the absolute values of the informal sector over time, the base values \(\eta^*_{2000}\) decide the rankings of the countries’ informal sector within the sample in year 2000. The base values \(\eta^*_{2000}\) are taken from Schneider (2007) or, for another 10 countries, from Schneider, Buehn, and Montenegro (2010).

The DGE model (DGE). A Dynamic General Equilibrium (DGE) model (e.g. Ihrig and Moe 2004; Elgin and Oztunali 2014; Orsi et al. 2014; Loayza 2016) typically considers how households allocate labor between formal and informal economies within each period and how the allocation changes over time. In comparison to other methods, the DGE approach stands out in its comprehensive country-year coverage, clear economic reasoning, and its applicability in policy experiments and projection (e.g., Loayza 2016).

The deterministic DGE model of Elgin and Oztunali (2014) is used to estimate the size of the informal sector. The model captures the essence of labor allocation between the formal and informal sector and allows the estimation of 159 countries (36 AEs and 123 EMDEs) over the period 1950-2016. In the model, an infinitely-lived representative household is endowed with certain units of productive capital and time. The household has access to two productive technologies, denoted formal and informal, and maximizes its lifetime utility by allocating labor between the informal and formal economies and allocating income between consumption and investment.

In model, an infinitely-lived representative household is endowed with units of productive capital and a total of \(H_t > 0\) units of time. The household has access to two productive technologies, denoted formal and informal, and maximizes its lifetime utility by solving the following optimization problem:

\[
\begin{align*}
\max & \quad \beta \sum_{t=0}^{\infty} \frac{U(C_t)}{(1+r)^t} \\
\text{subject to} & \quad \sum_{t=0}^{\infty} \frac{K_t}{(1+r)^t} < M_t \\
& \quad \sum_{t=0}^{\infty} \frac{N_{It}}{(1+r)^t} = H_t \\
& \quad K_{t+1} = (1-\delta)K_t + \tau_t C_t + \tau_t N_{It} A_{If} \\
& \quad \tau_t (N_{It} + N_{Ib}) = H_t \\
\end{align*}
\tag{2}
\]

\(\beta < 1\) is the discount factor and the instantaneous utility function \(U(.)\) is strictly increasing and strictly concave. Eq(2) defines the household’s resource feasibility constraint: the sum of consumption \(C_t\) and investment \(I_t\) should equal the amount produced using the formal and informal technologies. The right-hand side of equation (2) shows that the formal technology follows a standard Cobb-Douglas specification, where \(A_{It}\) is the level of productivity exclusive to the formal sector. \(K_t\) is the household’s capital stock while \(N_{Ib}\) is the number of hours the household devotes to the formal sector. \(\tau_t\) captures the tax rate imposed on formal output. Informal economy depends on the number of hours the household devotes to the informal sector, \(N_{Ib}\) and its exclusive level of technology, \(A_{Ib}\). Assuming no cost for hiding and the government cannot enforce payment, the household will attempt to hide the income received from the informal sector.

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3 See the model specification in Column (5) in Annex Table 3.1.2.

4 Calibration is performed separately for each country. Following Schneider, Buehn, and Montenegro (2010), the MIMIC index has been adjusted to the positive range by adding a positive constant.
The rest of the household’s problem is standard: equation (3) specifies the law of motion for capital, where \( \delta \in [0; 1] \) is the depreciation rate, equation (4) is the household’s time constraint. In this simple model, the government’s policy \( \tau_t \) is assumed to be exogenously given and the tax revenue is assumed to be used to finance an exogenous stream of government spending, \( G_t \). Then, given the government policy variable tax burden \( \{ \tau_t \} \), a competitive equilibrium of the two-sector model is a set of sequences \( \{ C_t, L_t, K_t, N_t, N^*_t, G_t \}_{t=0}^{\infty} \) that maximize expected utility from consumption (i.e. \( \sum_{t=0}^{\infty} \beta^t U(C_t) \)).

The model provides a reasonable mapping between formal economy and informal economy in a dynamic setting. The two key equilibrium conditions are the equilibrium condition that connects formal and informal economy through labor allocation, and the equilibrium condition that captures the intertemporal substitution. The calibration and data construction rely on these two conditions to estimate the ratio, \( \frac{L_c}{L} \), which can be further expressed as \( \frac{A_n N^*_c}{A_r N^*_c + A_c K^*_c} \).

The calibration takes parameter values suggested by the earlier literature (e.g. \( \alpha \) is assumed to be equal to 0.36; and \( \gamma \) takes 0.425 Ihrig and Moe (2004) and uses data from PWT 9.0 for capital stock \( (Kt) \), private consumption \( (C) \), formal employment \( (NFt) \), depreciation rates \( (\delta, \text{country averages}) \), and tax rates \( (\tau_t) \)). By matching the productivity in the informal sector to the informal economy size in 2007 of the series reported in Schneider, Buehn and Montenegro (2010) and assuming that \( A_n \) grows at the average growth rate of \( K_t \) and \( A_n \), the DGE estimates are computed for 159 countries over the period 1950-2016.

Survey-based estimates

Labor force surveys (LFS) and household surveys (HS) on labor related measures. Four existing informality measures are labor related, out of which three are related to employment and one to pension coverage. These measures are mainly gathered from labor force surveys and sometimes covered by household surveys. Labor related measures have the advantages of not relying on strong assumptions, having no need for based-year estimates for calibration, and having sufficient time variation for time-series analysis.\(^7\)

The most frequently used measure is the share of self-employment in total employment, which is a lower bound of informal employment (e.g. La Porta and Shleifer 2014, and Maloney 2004)\(^8\) As defined by the 1993 International Classification of Status in Employment (ICSE-93), self-employed workers are those workers who, working on their own account or with one or a few partners or in a cooperative, hold the type of jobs defined as “self-employment jobs.” These are jobs where the remuneration is directly dependent upon the profits derived from the goods and services produced. WDI and ILO further classify them into the following four sub-categories: employers, own-account workers, members of producers’ cooperatives, and contributing family workers.

The two other measures are informal employment (Informal emp) and employment outside the formal sector (Emp (inf sector)). These two measures are usually expressed in percent of total employment and refer to different aspects of informality. While employment in the informal sector is an enterprise-based concept, informal employment is a job-based concept and has a broader definition than self-employment. Informal employment comprises all workers of the informal sector and informal workers outside the informal sector. The former covers all persons who, during a given reference period, were

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\(^{7}\) They also have the following limitations: 1) the data are costly to gather, which results in limited country and year coverage; 2) survey methodologies may vary across time and countries, making the measures incomparable; 3) the typical drawbacks of survey-based estimates (such as sample bias) may make the data quality questionable; and 4) employment measures cannot reflect other changes in the informal sector, such as productivity.

\(^{8}\) Among all labor-related measures, self-employment stands out in its time and country coverage and sufficient level of time variation, making it suitable for time-series analysis and cross-country comparison.
employed in at least one informal sector enterprise, irrespective of their status in employment and whether it was their main or a secondary job a job-based concept. The latter covers self-employment and employees holding informal jobs. ILO presents a detailed definition of these two measures (http://www.ilo.org/ilostat-files/Documents/description_IFL_EN.pdf).

Combining various cross-country databases and additional data from the national statistical offices and other sources, the resulting dataset on self-employment is a panel of 182 countries/regions over the period 1955-2016. The dataset on informal employment covers 53 countries/regions from various years during 2001-2016 while the dataset on employment outside the formal sector contains 56 countries/regions from various years during 1999-2016.

Data on pension coverage (labeled as Pension coverage) are also gathered from various issues of the World Bank’s World Development Indicators (book version, reported until 2012). The measure is defined as the fraction of the labor force that contributes to a retirement pension scheme (Loayza et al. 2010, WDI). It yields a panel that covers 135 countries from 1990 to 2010.

Firm surveys. Two datasets of firm surveys have comprehensive coverage: World Bank Enterprise Surveys, and Executive Opinion Surveys conducted by World Economic Forum. World Bank Enterprise Surveys cover 139 economies over the period 2006-2015 while Executive Opinion Surveys cover 151 countries over the period 2005-2016.

Both surveys are answered by top managers and business owners, who are business experts and should be familiar with the business climate in a country. The surveys could reflect some dimensions of informality (e.g. the extent of competition from the informal sector) that are not captured in the other informality measures. Similar to labor-related measures, measures from firm surveys also have the advantages of being free of strong assumptions and base-year estimates for calibration.9

World Bank Enterprise Surveys compile responses on various topics (including informality) from face-to-face interviews with top managers and business owners in over 130,000 companies in 146 countries. The surveys yield the following measures of informality (used in e.g. Amin 2015; La Porta and Shleifer 2014): percent of firms competing against unregistered or informal firms (WB1), percent of firms formally registered when they started operations in the country (WB2), (average) number of years firms operating without formal registration (WB3), and percent of firms identifying practices of competitors in the informal sector as a major constraint (WB4). A higher value of WB1, WB3 and WB4 indicates a higher level of informality, while the reverse holds for WB2.

In comparison to Enterprise Surveys, Executive Opinion Surveys provide a more balanced panel dataset, making them more suitable for business cycle analysis. World Economic Forum has been conducting the Executive Opinion Survey every year since 1979. As reported in the 2014 edition, over 13,000 executives in 144 economies were surveyed. From year 2006, when conducting the survey, the following question is asked, “In your country, how much economic activity do you estimate to be undeclared or unregistered? (1=Most economic activity is undeclared or unregistered; 7 = Most economic activity is declared or registered).” The average responses at the country-year level constitute a series of informality measures, labeled as WEF. A lower average at the country level indicates a larger informal economy.

Household surveys (HS). Household surveys either report the extent of informality in an economy or report people’s opinions on informal economic activities. Among all, World Value Surveys (WVS) stand out in their country and year coverage with others focusing on European countries. It asks whether respondents can justify

9 There are two drawbacks of informality measures from firm surveys. First, firm surveys tend to have limited year coverage. Second, since people’s perception does not move much over time, this type of measures do not have much time variation. Both drawbacks limit their application in time-series analysis. However, they shed light on the perceived extent of informality in a country and provide guidance for constructing and validating indirect model estimates.
cheating on taxes in five waves from 1981-1984 to 2010-2014. The responses range from 1 (never justifiable) to 10 (always justifiable). In total, 96 economies participated in the survey. The average responses at the country-year level are used as a measure for attitudes towards informality (or tax morality, Oveido et al. 2009), labeled as WVS. A higher average at the country level implies that people find cheating on taxes more justifiable. Former studies show that the lack of tax morality is associated with a higher level of informality.

**ANNEX 3.2 Characteristics of informal-economy business cycles**

Harding and Pagan (2002)’s approach is used to identify business cycle turning points in formal and informal sectors in annual data: Peaks (troughs) are identified in years when output is higher (lower) than the two subsequent and two preceding years. A recession is defined as the period from a business cycle peak to a trough. An expansion is the converse, the period from a business cycle trough to its peak. A recovery is the early part of an expansion and is defined as the period from the business cycle trough to the year in which the output level recovers to that of the most recent business cycle peak (Claessens et al. 2012). The main characteristics of recessions and recoveries include duration and speed of adjustment (often termed as “slope”) are defined as in Claessens et al. (2012).

- **Duration** captures, for a recession, the period from peak to trough, for a recovery, the period it takes for output to return to its pre-trough peak, and for an expansion the period from trough to peak.

- **Speed of adjustment** (“slope”) measures the speed of a cyclical phase and is defined as the ratio of amplitude over duration for a recession and the ratio of the change from the trough to the last peak divided by the duration for a recovery (Claessens et al. 2012).

**ANNEX 3.3 Informality and earnings inequality: A meta-analysis approach**

Selection of studies. The collection of the representative sample of studies on informality and wage inequality follows selection guidelines outlined in Stanley et al. (2013) and is broadly similar to criteria applied by van der Sluis et al. (2005). An initial search was conducted in the major English language repositories of academic articles and working papers. A study was included in the database if it: (i) provided a quantitative estimate of the informal-formal wage gap and a corresponding standard error or a t-statistic; (ii) used data from micro-level household or labor surveys to obtain these estimates; (iii) analyzed a developing country or a group of developing economies as defined by the World Bank classification and (iv) was published after 1990. The resulting database included 16 studies with a total of 83 individual coefficient estimates covering 20 emerging market and developing countries (Annex Table 3.3.1).

Definitions matter. Differences in estimates of the incidence of informal employment and the wage differentials between formal and informal workers in part reflect differences in data coverage and definitions of informal workers. Self-employed workers constitute the core of informal employment since they typically lack registration at the national level, do not contribute to social security and are not entitled to paid annual and sick leave. However, not all informal workers are self-employed, while the informal sector itself may be divided into several tiers such as informal self-employed entrepreneurs or professional workers...
and informal non-professional employees. In developing economies, about half of informal workers are non-professional self-employed workers—who migrate to formal employment as per capita incomes grow—and the majority of the remainder are informal employees (Gindling, Mossaad and Newhouse 2016). Studies typically find that self-employed informal workers earn the same or more than formal workers, but employed informal workers earn less than formal workers, especially in the lower tail of the wage distribution (Figure 3.8). Given data constraints, most studies on wage differentials between formal and informal sectors look at gross reported earnings. Several studies use imputed net wages calculated based on the national income tax tables. Their conclusions are broadly in line with the rest of the literature (El Badaoui et al. 2008, 2010).

**Methodology matters.** Empirical research of the wage differential between informal and formal workers has largely relied on estimating “Mincerian” wage regressions conditional on the observed characteristics of workers, although more recent studies have used quantile regressions to assess sector wage gaps along the wage distribution. Such cross-sectional wage regressions are biased when workers’ unobserved characteristics affect both their choice of sector and their wage. For example, several studies find workers transitioning from the formal sector into the informal sector after spending several years accumulating experience and knowledge in the formal sector (Maloney 2004, Gong et al. 2004). Hence, studies that rely on panel data to control for time-invariant unobserved worker characteristics find much smaller informal-formal wage differentials (Badaoui et al. 2008, Cho and Cho 2011, Botelho and Ponczek 2011). Similarly, semiparametric matching methods, such as propensity score matching and difference-in-difference estimators that are immune to the misspecification of the wage regressions, find modest or insignificant wage differentials between formal and informal jobs (Pratap and Quintin 2006).

**Meta Regression Analysis of informal-formal wage gap.** A random-effects model assumes that there is a distribution of true effects rather than a common fixed effect across the studies (DerSimonian and Laird, 1986). In particular, a study-specific estimate of the informal-formal wage gap has a sampling distribution \( \hat{\theta}_j \sim N(\theta_j, \sigma^2) \), where \( \sigma^2 \) is the within study variance of the estimate due to a sampling error; while the true effect has the following distribution \( \theta_j \sim N(\mu, \tau^2) \). Meta-analysis pools information across many studies to estimate \( \mu \) and \( \tau^2 \), where \( \tau^2 \) measure the degree of across-study variations. The proportion of total variation in study estimates is equal to \( I^2 = \tau^2 / (\tau^2 + \sigma^2) \) and reflects the impact of across-study heterogeneity (Higgins and Thompson, 2002). The meta-regression analysis (MRA) can be performed to associate this variation with any characteristics of the study or sample.

The MRA of estimated wage differentials between formal and informal jobs uses estimates of the wage gap drawn from each study as the dependent variable. The set of regressors, or moderator variables, includes study characteristics that are deemed consequential for the reported results, for example, identification and estimation methods, study design and data sources. This, in particular, helps clarify the diversity of research outcomes on the size of the informal-formal wage gap and identify the sensitivity of reported wage gaps to study-specific methods and data. A random-effects MRA is performed by estimating the following regression:

\[
\hat{\theta}_j = \mu + \sum_{i} \alpha_i X_{ij} + \epsilon_j + \delta_j
\]

Where \( \hat{\theta}_j \) is a study-specific estimate of the informal-formal wage gap, \( \epsilon_j \) is a sampling error with a standard deviation that may vary across studies.
studies, $\theta_i$ is an error term reflecting across-study variation of true effects with a constant across-study variance $\tau^2$; finally, the set of moderator variables, $X$, includes:

- A dummy variable accounts for differences in methodology: $FE_i$ is 1 if fixed effects were used to correct for unobserved workers' characteristics and 0 otherwise.
- Two dummy variables reflect the gender composition of the sample: $FEMALE_i$ is 1 if estimates were obtained for female workers only and 0 otherwise, $MALE_i$ is 1 if estimates were obtained for male workers only and 0 otherwise, the reference category for this set of dummy variables are estimates obtained with samples containing both female and male workers.
- Regional dummy variables are included to account for regional heterogeneity.
- $Self-\text{employed}_i$ is a dummy variable indicating that a study measured the wage gap between self-employed and formal employees.

The sample coverage is reported in Annex Table 3.3.1, while the regression results are reported in Annex Table 3.3.2.

**ANNEX 3.4 Pre-existing informality and changes in poverty and income inequality**

Following Loayza, Serven and Sugawara (2009), the following OLS model is estimated to gauge the impact of informality on changes in poverty and income inequality:

$$\Delta y_i = \alpha_i + \theta_i \overline{\text{Informality}_i} + \theta_1 \text{Initial } y_i + \theta_2 \text{Initial GDPpc}_i + \epsilon_i$$

The results are reported in Annex Table 3.4.1. Dependent variable ($\Delta y_i$) in Column [1]-[3] is annual change in poverty headcount ratio (i.e. Poverty headcount ratio at $1.90\text{ a day (2011 PPP), percent of population}$) over the earliest year and the latest year, in percentage points, in country $i$ (over the period 2011-2016). In Column [4]-[6], the dependent variable ($\Delta \text{Gini}_i$) is annual change in Gini index over the earliest year and the latest year, in percentage points, (over the period 2011-2016). The average measure for pre-existing informality in country $i$ (i.e. $\overline{\text{Informality}_i}$) over the period 1990-2005—including the share of DGE/MIMIC-based estimates of informal output in official GDP, the share of self-employed in employed, — is the variable of interest. The initial condition of poverty or income inequality ($\text{Initial } y_i$, i.e. the level of poverty / income inequality in the earliest available year between 1990-2005) and GDP per capita ($\text{Initial GDPpc}_i$, i.e. the level of real GDP per capita in the earliest available year between 1990-2005) are controlled for.

The proxies for poverty and income inequality (Gini coefficient) are taken from World Development Indicators (WDI). The former is Poverty headcount ratio at $1.90\text{ a day (2011 PPP), percent of population}$.

**ANNEX 3.5 Labor legislation and informality**

The implications of labor market deregulation for informality can be traced out in the theoretical model of Loayza (2016). It is shown that minimum wage restraint will speed up formalization of economies in Europe and Central Asia and Middle East and North Africa and modernization—whether informal or formal—of economies in South Asia and Sub-Saharan Africa.

**Theoretical mechanism for empirical link**

Loayza (2016) develops a theoretical model that traces informality, government regulations, economic growth and urban migration through the process of development. The model highlights the doubly distortionary effect of the minimum wage on labor misallocation and on capital accumulation. A higher minimum wage slows capital accumulation and pushes workers into the informal economy.

A developing economy can be interpreted as consisting of two coexisting economies: a modern economy that is organized in firms using a high-productivity technology and employing both capital and labor and a rudimentary, informal economy that represents the self-employed using
only labor with a low-productivity technology. The modern economy, itself, consists of two sectors: a capital-intensive modern formal sector that complies with government-mandated labor costs including the minimum wage; and a modern informal sector that is less capital intensive, pays low labor costs and high capital costs and produces with lower productivity by contravening labor regulations.

A developing economy passes through three stages of development as it becomes richer. In the first phase, modern informal employment expands as falling relative cost of urban living encourage rural workers (in the rudimentary informal sector) to migrate to cities. In the second phase, rural-urban migration slows, the relative shares of the modern informal and formal sectors stabilize, but the relative size of the rudimentary informal sector shrinks. In the third phase, modern informal employment declines as rural-urban migration stalls and a rising capital-labor ratio reduces the relative (and absolute) size of the modern informal sector.

### Theoretical impact of changes in minimum wages on informality

The model provides a framework for tracing out the implications for growth and informality of changes to labor market regulations, here represented by the minimum wage. When the minimum wage is higher than the unregulated market wage, it creates a distortion in the labor market, which moves labors to the modern informal sector where the minimum wage is not binding. For 127 economies, of which 28 are advanced and 99 are EMDEs, the evolution of the relative size of informal output and employment over 2015-2035 is considered for two scenarios.

- **Baseline scenario.** The minimum wage rises at the rate of labor productivity.
- **Reformist scenario.** The minimum wage rises one percentage point more slowly than labor productivity growth.

The outcomes of both scenarios depend on the initial conditions of the country, future population and TFP growth rates, and the rate of change of the minimum wage. In the baseline scenario, the minimum wage is assumed to grow in line with labor productivity growth, such that informal rudimentary employment shrinks while the formal and informal modern employment expand at a similar rate. In the reformist scenario, slower minimum wage growth will speed up capital accumulation, increase rural-urban migration, raise capital-labor ratio, reduce the wage distortion created by the minimum wage, and result in an expanding modern and formal sector.

### Global implications in theory: Employment in the modern economy

On average, in both the baseline and reformist scenarios, the employment share of the modern economy is predicted to expand, by, respectively, 18 (more than one-quarter) and 23 (more than one-third) percentage points (Annex Figure 3.5.1). In both scenarios, capital accumulation attracts rural workers from the rudimentary informal sector, reduces the wage distortion created by the minimum wage, and results in allocating more labor in the modern formal sector. In the baseline scenario, capital accumulation encourages rural-urban migration and modern employment. Employment in both formal and informal modern sectors grow at similar rates. As a result, share of informal modern employment in modern employment remains steady but its share in total (modern and rudimentary) employment increases by 9 percentage points.

---

18 The relative shares of modern informal sector remain stable due to the constant urban capital-labor ratio during the second phase.
19 The size of the modern informal sector diminishes when the rate of natural increase in urban population is not too large and when the minimum legal wage is no longer binding.
20 The relative sizes of different sectors are projected using the parameter values, population projections and total factor productivity growth from Loayza and Meza-Suadra (2016). 2015 is taken as the starting year and the relative sizes of the three sectors are projected for year 2015-2035. The real cost of capital are assumed to match labor productivity growth.
21 The country classification is listed in Annex 3.5.1. See Loayza (2016) for the list of countries.
22 The initial conditions include the capital stock, total factor productivity, and the labor force, and the share of formal and informal labor, both rudimentary and modern (See Loayza 2016 for details).
ANNEX FIGURE 3.5.1 Implications of relaxing the minimum wage restraint

Over the next two decades, according to the model, the employment share of the modern economy is expected to expand. In the baseline scenario, the informal economy would grow faster than the formal economy, whereas the informal economy would shrink in the minimum wage restraint scenario. The theoretical model suggests that lowering the minimum wage would speed up formalization in regions like Europe and Central Asia and Middle East and North Africa and accelerate economic modernization in South Asia and Sub-Saharan Africa.

In the reformist scenario, the slower growth in the minimum wage encourages faster capital accumulation and migration to the modern economy, which speeds up the modernization process. Minimum wage growth below productivity growth in the formal sector gradually widens the wage gap between the formal and informal wages in the modern sector and encourages more formal, modern employment. As a result, the share of formal modern employment in modern employment rises by 22 percentage points and the share of formal modern employment in total (modern and rudimentary) employment increases by 33 percentage points.

Differences between advanced economies and EMDEs. Advanced economies have small rural and modern informal sectors compared with EMDEs, to begin with. The rural sector is already negligible in advanced economies, accounting for 9 percent of employment, whereas it accounts for 44 percent of employment in EMDEs. The modern informal sector already accounts for a similarly modest 8 percent of employment in advanced economies, but 28 percent of employment in EMDEs. Under the baseline scenario, and even more quickly and comprehensively under the reformist scenario, the modern informal and rudimentary sectors will virtually disappear in advanced economies, together accounting for about 10 percent of employment from 18 percent initially. In EMDEs, the rural sector will continue to play an important, albeit shrinking, role, accounting for 15-22 percent of employment. Rural-urban migration will continue to fuel the expansion of the modern economy, but only in the reformist scenario will this migration ensure that the modern formal sector grows more rapidly than the modern informal sector.

Differences across EMDE regions. EMDE regions differ widely in their initial conditions, hence also in the implications of policy changes. In 2015, Sub-Saharan Africa (SSA) and South Asia (SAR) had large rural economies, accounting for more than 60 percent of employment, whereas Europe and Central Asia (ECA) and the Middle East and North Africa (MNA) had predominantly modern economies, which accounted for about 80 percent.
of employment. Over the next two decades, reformist or baseline policies would reduce the share of rural employment in SSA below the current EMDE regional median and would virtually eliminate rural employment in ECA and MNA (under reformist policies, also in East Asia and Pacific, EAP, Latin America and the Caribbean, LAC, and South Asia, SAR). The reformist scenario would speed up this formalization process, especially in MNA and LAC, where the migration to the modern economy is almost coming to a halt and further capital accumulation will raise the unregulated market wage, making minimum wage no longer binding in the formal modern sector and allocating more labor in the formal modern sector. The reformist scenario could raise growth by 0.1-1.2 percentage point per year over the baseline scenario. In SAR and SSA, the reformist scenario could generate the largest boosts to output growth because of their initially large rural sectors increase the potential for rural-urban migration.
### ANNEX TABLE 3.1 Labor productivity differential between types of firms (Percent)

<table>
<thead>
<tr>
<th></th>
<th>Informal firms</th>
<th>Informal versus formal firms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Manager has higher education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Angola</td>
<td>45.8</td>
<td>-75.5***</td>
</tr>
<tr>
<td>Argentina</td>
<td>25.0</td>
<td>-92.5***</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>-6.2</td>
<td>-79.8***</td>
</tr>
<tr>
<td>Botswana</td>
<td>89.4*</td>
<td>-89.8***</td>
</tr>
<tr>
<td>Côte d'Ivoire</td>
<td>0.0</td>
<td>-47.5*</td>
</tr>
<tr>
<td>Congo, Dem. Rep.</td>
<td>33.3</td>
<td>10.7</td>
</tr>
<tr>
<td>Cabo Verde</td>
<td>133.3</td>
<td>0.89</td>
</tr>
<tr>
<td>Ghana</td>
<td>0.0</td>
<td>-51.8***</td>
</tr>
<tr>
<td>Guatemala</td>
<td>25.0</td>
<td>-86.0***</td>
</tr>
<tr>
<td>Kenya</td>
<td>50.0***</td>
<td>-81.6***</td>
</tr>
<tr>
<td>Madagascar</td>
<td>40.0</td>
<td>-88.1***</td>
</tr>
<tr>
<td>Mali</td>
<td>13.2</td>
<td>-71.3***</td>
</tr>
<tr>
<td>Myanmar</td>
<td>80.0*</td>
<td>-89.1***</td>
</tr>
<tr>
<td>Mauritius</td>
<td>66.7*</td>
<td>-82.9***</td>
</tr>
<tr>
<td>Nepal</td>
<td>11.1</td>
<td>-56.5***</td>
</tr>
<tr>
<td>Peru</td>
<td>28.6*</td>
<td>-74.2***</td>
</tr>
<tr>
<td>Rwanda</td>
<td>50.0***</td>
<td>-91.4***</td>
</tr>
<tr>
<td>All countries</td>
<td>48.1***</td>
<td>-79.4***</td>
</tr>
</tbody>
</table>


Note: Productivity differential between the median informal and the median formal firm (last column) or between median informal firms among different groups of firms (all other columns). For example, “Manager has higher education” shows the difference in the median productivity among informal firms with managers with higher education and the median productivity among informal firms with managers without higher education. Other firm characteristics are not controlled for, hence results are similar but not identical to column (1) in Annex Table 3.2. Productivity is defined as annual sales (in 2009 U.S. dollars) relative to the number of workers. “All countries” is the unweighted average across each column. ***, **, * indicates statistical significance at the 1, 5, and 10 percent level.
ANNEX TABLE 3.2 Labor productivity of formal and informal firms

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Informal firm Y:1 N:0</td>
<td>-1.400***</td>
<td>-0.648***</td>
<td>-1.131***</td>
<td>-1.200***</td>
<td>-1.008***</td>
</tr>
<tr>
<td></td>
<td>(0.091)</td>
<td>(0.184)</td>
<td>(0.131)</td>
<td>(0.121)</td>
<td>(0.160)</td>
</tr>
<tr>
<td>Firm age (logs)</td>
<td>0.120***</td>
<td>0.285***</td>
<td>0.118***</td>
<td>0.116**</td>
<td>0.137***</td>
</tr>
<tr>
<td></td>
<td>(0.045)</td>
<td>(0.053)</td>
<td>(0.045)</td>
<td>(0.045)</td>
<td>(0.045)</td>
</tr>
<tr>
<td>Firm size (logs, workers)</td>
<td>-0.102***</td>
<td>-0.119***</td>
<td>-0.056*</td>
<td>-0.104***</td>
<td>-0.108***</td>
</tr>
<tr>
<td></td>
<td>(0.027)</td>
<td>(0.027)</td>
<td>(0.032)</td>
<td>(0.028)</td>
<td>(0.028)</td>
</tr>
<tr>
<td>Manufacturing Y:1 N:0</td>
<td>-0.402***</td>
<td>-0.407***</td>
<td>-0.401***</td>
<td>-0.401***</td>
<td>-0.399***</td>
</tr>
<tr>
<td></td>
<td>(0.056)</td>
<td>(0.056)</td>
<td>(0.056)</td>
<td>(0.056)</td>
<td>(0.056)</td>
</tr>
<tr>
<td>Capital city Y:1 N:0</td>
<td>0.201***</td>
<td>0.190***</td>
<td>0.187***</td>
<td>0.394***</td>
<td>0.201***</td>
</tr>
<tr>
<td></td>
<td>(0.061)</td>
<td>(0.061)</td>
<td>(0.061)</td>
<td>(0.087)</td>
<td>(0.061)</td>
</tr>
<tr>
<td>Manager experience (logs, years)</td>
<td>0.094**</td>
<td>0.141***</td>
<td>0.107***</td>
<td>0.091**</td>
<td>0.190***</td>
</tr>
<tr>
<td></td>
<td>(0.040)</td>
<td>(0.041)</td>
<td>(0.040)</td>
<td>(0.040)</td>
<td>(0.055)</td>
</tr>
<tr>
<td>Informal firm * Firm age (logs)</td>
<td>-0.353***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.069)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informal firm * Firm size (logs, workers)</td>
<td></td>
<td>-0.208***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.066)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informal firm * Capital city Y:1 N:0</td>
<td></td>
<td></td>
<td></td>
<td>-0.360***</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.114)</td>
<td></td>
</tr>
<tr>
<td>Informal firm * Manager experience (logs, years)</td>
<td></td>
<td></td>
<td></td>
<td>-0.176***</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.060)</td>
<td></td>
</tr>
<tr>
<td>Country fixed effects</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Constant</td>
<td>9.013***</td>
<td>8.552***</td>
<td>8.859***</td>
<td>8.909***</td>
<td>8.748***</td>
</tr>
<tr>
<td></td>
<td>(0.131)</td>
<td>(0.164)</td>
<td>(0.149)</td>
<td>(0.139)</td>
<td>(0.162)</td>
</tr>
<tr>
<td>Number of observations</td>
<td>10.527</td>
<td>10.527</td>
<td>10.527</td>
<td>10.527</td>
<td>10.527</td>
</tr>
<tr>
<td>R2</td>
<td>0.291</td>
<td>0.296</td>
<td>0.293</td>
<td>0.293</td>
<td>0.292</td>
</tr>
</tbody>
</table>

Note: Standard errors in brackets. Significance is denoted by *** (1 percent), ** (5 percent), * (10 percent). OLS regression with labor productivity as dependent variable, as proxied by annual sales (in 2009 U.S. dollars) per worker, based on a sample using World Bank’s Enterprise Survey data collected during 2007-14 for 4,036 informal firms and 7,558 formal firms in 18 countries. “Informal firm” is a dummy variable taking the value of 1 if a firm is unregistered and 0 otherwise. “Manufacturing” is a dummy variable taking the value of 1 if a firm operates in the manufacturing sector and 0 otherwise. “Capital city” is a dummy variable taking the value of 1 if a firm is located in the capital city and 0 otherwise.
### ANNEX TABLE 3.3 Labor productivity of formal firms facing informal competition

<table>
<thead>
<tr>
<th>Source: World Bank.</th>
<th><strong>Note:</strong> Standard errors in brackets. Significance is denoted by *** (1 percent), ** (5 percent), * (10 percent). OLS regression with labor productivity as dependent variable, as proxied by annual sales (in 2009 U.S. dollars) per worker, based on a sample of formal firms only using World Bank's Enterprise Survey data collected during 2007-14 for 4,036 informal firms and 7,558 formal firms in 18 countries. “Informal competition” is the share of firms in a cell (a group of firms of similar size in the same region and sector) that report competition from informal firms. It is worth mentioning that one could use a firm-level dummy rather than the proportion of formal firms in a cell to proxy informal competition. However, endogeneity concerns may arise because the informal competition faced by a specific firm may also be driven by its productivity. Therefore, the proportion of formal firms facing informal competition in a cell, which would be uncorrelated with the productivity of a specific firm, should be more robust to endogeneity concerns. “Manufacturing” is a dummy variable taking the value of 1 if a firm operates in the manufacturing sector and 0 otherwise. “Capital city” is a dummy variable taking the value of 1 if a firm is located in the capital city and 0 otherwise.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Informal Competition</strong></td>
<td>-0.268*** (-0.067)</td>
</tr>
<tr>
<td><strong>Number of workers (logs)</strong></td>
<td>-0.197*** (0.016)</td>
</tr>
<tr>
<td><strong>Firm’s age (logs)</strong></td>
<td>0.208*** (0.023)</td>
</tr>
<tr>
<td><strong>Firm belongs to manufacturing sector: Yes 1 No 0</strong></td>
<td>0.137*** (0.044)</td>
</tr>
<tr>
<td><strong>Firm belongs to retail sector: Yes 1 No 0</strong></td>
<td>0.695*** (0.045)</td>
</tr>
<tr>
<td><strong>Top manager is female: Yes 1 No 0</strong></td>
<td>-0.051 (0.048)</td>
</tr>
<tr>
<td><strong>Exports (proportion of sales)</strong></td>
<td>0.268*** (0.114)</td>
</tr>
<tr>
<td><strong>Firm has foreign owners: Yes 1 No 0</strong></td>
<td>0.638*** (0.063)</td>
</tr>
<tr>
<td><strong>Log GDP per capita (PPP, 2009 Int'l Dollars)</strong></td>
<td>0.631*** (0.043)</td>
</tr>
<tr>
<td><strong>Distance to Frontier (Doing Business)</strong></td>
<td>0.574*** (0.048)</td>
</tr>
<tr>
<td><strong>Corruption (Governance Indicators)</strong></td>
<td>0.031*** (0.006)</td>
</tr>
<tr>
<td><strong>Business Freedom index (Economic Freedom of the World)</strong></td>
<td>0.016*** (0.005)</td>
</tr>
<tr>
<td><strong>Constant</strong></td>
<td>8.771*** (0.178)</td>
</tr>
<tr>
<td><strong>Country fixed effects</strong></td>
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</tr>
<tr>
<td><strong>Number of observations</strong></td>
<td>45,996</td>
</tr>
<tr>
<td><strong>R-squared</strong></td>
<td>0.015***</td>
</tr>
<tr>
<td>Study</td>
<td>Country</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Bruhn and Loeprick (2014)</td>
<td>Georgia</td>
</tr>
<tr>
<td>Fajnzylber, Maloney and Rojas (2011); Maloney and Mendez (2004)</td>
<td>Brazil</td>
</tr>
<tr>
<td>Keats (2017)</td>
<td>India</td>
</tr>
<tr>
<td>Slonimczyk (2012)</td>
<td>Russia</td>
</tr>
<tr>
<td>Waseem (2018)</td>
<td>Pakistan</td>
</tr>
<tr>
<td>Study</td>
<td>Country</td>
</tr>
<tr>
<td>-------</td>
<td>---------</td>
</tr>
<tr>
<td>Bosch, Goni and Maloney (2007)</td>
<td>Brazil</td>
</tr>
<tr>
<td>Betcherman, Daysal and Pages (2010)</td>
<td>Turkey</td>
</tr>
<tr>
<td>Comola and Mello (2011)</td>
<td>Indonesia</td>
</tr>
<tr>
<td>McGraig and Pavcnik (2015); and Boly (2018)</td>
<td>Vietnam</td>
</tr>
<tr>
<td>Sharma (2009)</td>
<td>India</td>
</tr>
<tr>
<td>Bruhn (2011); (2013)</td>
<td>Mexico</td>
</tr>
<tr>
<td>Study</td>
<td>Country</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td><strong>Trade liberalization</strong></td>
<td></td>
</tr>
<tr>
<td>Bosch, Goni and Maloney (2007)</td>
<td>Brazil</td>
</tr>
<tr>
<td>Goldberg and Pavcnik (2003); Attanasio, Goldberg and Pavcnik (2004)</td>
<td>Colombia</td>
</tr>
<tr>
<td>Selwaness and Zaki (2015)</td>
<td>Egypt</td>
</tr>
<tr>
<td>McCaig, Pavcnik (2018)</td>
<td>Vietnam</td>
</tr>
</tbody>
</table>


YES (NO) means that the outcome of a policy intervention is (not) consistent with the expected impact. MIXED means that the outcome of a policy intervention varies over time. The expected impacts of reforms are: (i) reduced tax burden would reduce informality; (ii) increased labor market flexibility would reduce informality; (iii) lowered entry and exit barriers in formal sector would reduce informality; (iv) trade liberalization would increase informality due to intense foreign competition that disrupts existing formal firms.
### ANNEX TABLE 3.1.1 Data coverage

<table>
<thead>
<tr>
<th>Estimation method</th>
<th>Aspect</th>
<th>Measures</th>
<th># of AE</th>
<th># of EMDE</th>
<th>Time period</th>
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</thead>
<tbody>
<tr>
<td>Indirect</td>
<td>Output</td>
<td>DGE (percent of GDP)</td>
<td>36</td>
<td>122</td>
<td>1950-2016</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MIMIC (percent of GDP)</td>
<td>36</td>
<td>124</td>
<td>1993-2015</td>
</tr>
<tr>
<td>Indirect</td>
<td>Employment</td>
<td>Pension coverage (percent of labor force)</td>
<td>23</td>
<td>34</td>
<td>1990-2010</td>
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<tr>
<td></td>
<td></td>
<td>Self-employment (percent of total employment)</td>
<td>37</td>
<td>86</td>
<td>1955-2016</td>
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<tr>
<td></td>
<td></td>
<td>Informal employment (percent of total employment)</td>
<td>0</td>
<td>30</td>
<td>2001-2016</td>
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<tr>
<td></td>
<td></td>
<td>Employment outside the formal sector (percent of total employment)</td>
<td>0</td>
<td>32</td>
<td>1999-2016</td>
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<tr>
<td>Direct (Survey-based)</td>
<td>Labor Force Surveys</td>
<td>WEF(1-7=Most informal)</td>
<td>36</td>
<td>111</td>
<td>2006-2016</td>
</tr>
<tr>
<td>Direct (Survey-based)</td>
<td>Firm surveys</td>
<td>WB: percent Competing against informal firms</td>
<td>7</td>
<td>46</td>
<td>2006-2016</td>
</tr>
<tr>
<td>Direct (Survey-based)</td>
<td>Firm surveys</td>
<td>WB: percent firms formally registered when founded</td>
<td>7</td>
<td>46</td>
<td>2006-2016</td>
</tr>
<tr>
<td>Direct (Survey-based)</td>
<td>Firm surveys</td>
<td>WB: Number of years operated without registration</td>
<td>7</td>
<td>46</td>
<td>2006-2016</td>
</tr>
<tr>
<td>Direct (Survey-based)</td>
<td>Firm surveys</td>
<td>WB: percent firms that found competitors in the informal sector as a constraint</td>
<td>7</td>
<td>46</td>
<td>2006-2016</td>
</tr>
<tr>
<td>HS</td>
<td></td>
<td>WVS: Justifiable (Cheating on taxes)</td>
<td>20</td>
<td>43</td>
<td>1981-2010</td>
</tr>
</tbody>
</table>

Notes: DGE is benchmarked to Schneider et al. (2010). World Value Survey (WVS) asks whether cheating on taxes is justifiable (1 is “never justifiable” and 10 is “always justifiable”) and reports average responses at the country-year level, with a higher level suggesting that the country is more tolerant towards the informal sector. World Economic Forum (WEF) asks “In your country, how much economic activity do you estimate to be undeclared or unregistered? (1= Most economic activity is undeclared or unregistered; 7= Most economic activity is declared or registered)” and reports average responses at the country-year level. Here the average responses have been reordered to make “7= Most economic activity is undeclared or unregistered; 1= Most economic activity is declared or registered” where a higher level suggesting a larger informal sector in the country. The WEF data for year 2004 and 2005 are dropped since different ordering were used before 2006, which makes the numbers incomparable over time. WB shows the results for World Bank Enterprise Surveys. “HS” stands for “Household surveys”. “(a)” stands for “Output,” and “(b)” stands for “Opinions/Tax Morality”. Detailed information is listed in Table A.1.
# ANNEX TABLE 3.1.2. MIMIC model estimation results (1993-2015)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Size of government</td>
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<td>0.143***</td>
<td>0.157***</td>
<td>0.152***</td>
<td>0.145***</td>
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<tr>
<td></td>
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<td>(0.021)</td>
<td>(0.024)</td>
<td>(0.019)</td>
<td>(0.019)</td>
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<tr>
<td>Share of direct taxation</td>
<td>0.035</td>
<td>0.009</td>
<td>0.058**</td>
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<tr>
<td></td>
<td>(0.023)</td>
<td>(0.022)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business Freedom</td>
<td>0.035</td>
<td>0.040**</td>
<td>0.058**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.021)</td>
<td>(0.020)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiscal Freedom</td>
<td>0.002</td>
<td>-0.010</td>
<td>-0.038</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>(0.023)</td>
<td>(0.020)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>0.078***</td>
<td>0.105***</td>
<td>0.055**</td>
<td>0.067***</td>
<td>0.066***</td>
</tr>
<tr>
<td></td>
<td>(0.023)</td>
<td>(0.021)</td>
<td>(0.022)</td>
<td>(0.019)</td>
<td>(0.019)</td>
</tr>
<tr>
<td>GDP per capita</td>
<td>-0.342***</td>
<td>-0.324***</td>
<td>-0.393***</td>
<td>-0.381***</td>
<td>-0.385***</td>
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<tr>
<td></td>
<td>(0.035)</td>
<td>(0.027)</td>
<td>(0.029)</td>
<td>(0.022)</td>
<td>(0.022)</td>
</tr>
<tr>
<td>Government effectiveness</td>
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<td>-0.043**</td>
<td>-0.042**</td>
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</tr>
<tr>
<td></td>
<td>(0.020)</td>
<td>(0.018)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Growth rate of GDP per capita</td>
<td>-0.835***</td>
<td>-0.618***</td>
<td>-0.362***</td>
<td>-0.310***</td>
<td>-0.306***</td>
</tr>
<tr>
<td></td>
<td>(0.119)</td>
<td>(0.085)</td>
<td>(0.079)</td>
<td>(0.064)</td>
<td>(0.064)</td>
</tr>
<tr>
<td>Labor force participation rate</td>
<td>-0.321***</td>
<td>-0.219***</td>
<td>-0.167***</td>
<td>-0.155***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.091)</td>
<td>(0.073)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Growth rate of labor force</td>
<td>-0.091</td>
<td>-0.091</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>(0.064)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currency (M0/M1)</td>
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<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.000)</td>
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</table>

### Statistical tests

<table>
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</thead>
<tbody>
<tr>
<td>RMSEA</td>
<td>0.061</td>
<td>0.057</td>
<td>0.070</td>
<td>0.087</td>
<td>0.089</td>
</tr>
<tr>
<td>p(RMSEA&lt;=0.05)</td>
<td>0.097</td>
<td>0.190</td>
<td>0.002</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Chi^2 (p)</td>
<td>63.922 (0.00)</td>
<td>60.646 (0.000)</td>
<td>124.517 (0.000)</td>
<td>153.29 (0.000)</td>
<td>160.63 (0.000)</td>
</tr>
<tr>
<td>AIC</td>
<td>27388.448</td>
<td>33527.217</td>
<td>41436.305</td>
<td>43231.405</td>
<td>44080.904</td>
</tr>
<tr>
<td>BIC</td>
<td>27464.278</td>
<td>33602.241</td>
<td>41522.616</td>
<td>43306.446</td>
<td>44156.205</td>
</tr>
<tr>
<td>CFI</td>
<td>0.820</td>
<td>0.852</td>
<td>0.761</td>
<td>0.771</td>
<td>0.764</td>
</tr>
<tr>
<td>TLI</td>
<td>0.685</td>
<td>0.734</td>
<td>0.590</td>
<td>0.571</td>
<td>0.558</td>
</tr>
<tr>
<td>SRMR</td>
<td>0.033</td>
<td>0.030</td>
<td>0.041</td>
<td>0.046</td>
<td>0.047</td>
</tr>
<tr>
<td>CD</td>
<td>0.846</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
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<tr>
<td>Observations</td>
<td>1,159</td>
<td>1,570</td>
<td>1,627</td>
<td>2,374</td>
<td>2,422</td>
</tr>
</tbody>
</table>

Note: Absolute z-statistics in parentheses. ***, **, * denote significance at the 1, 5, and 10 percent significance levels. All variables are used as their standardized deviations from the mean. Data sources for variables used in the model are listed in Section II footnote 6. Following the MIMIC models’ identification rule, the currency (M0/M1) variable is fixed to an a priori value. The currency variable shows the level of money (cash) in circulation. “AIC” stands for “Akaike’s information criterion” and “BIC” stands for “Bayesian information criterion. “RMSEA” stands for “Root Mean Square Error of Approximation”. “TLI” stands for “Tucker Lewis Index”, “CFI” stands for “Comparative Fit Index”, “SRMR” stands for “Standardized Root Mean Square Residual”, and “CD” shows the coefficient of determination. These are goodness-of-fit statistics.
### ANNEX TABLE 3.3.1 Database of studies for meta regressions analysis

<table>
<thead>
<tr>
<th>Study</th>
<th>Countries/Estimates</th>
<th>Sample period</th>
<th>Methodology</th>
<th>Mean wage gap*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aydin et al. (2010)</td>
<td>1/4</td>
<td>1998-2007</td>
<td>OLS, ML logit</td>
<td>57.75</td>
</tr>
<tr>
<td>Badaoui et al. (2010)</td>
<td>1/6</td>
<td>1994</td>
<td>OLS, PSM</td>
<td>25.65</td>
</tr>
<tr>
<td>Bakaya and Hulagu (2011)</td>
<td>1/2</td>
<td>2005-2009</td>
<td>OLS, PSM</td>
<td>15.45</td>
</tr>
<tr>
<td>Botelho and Ponczek (2011)</td>
<td>1/2</td>
<td>1995-2001</td>
<td>OLS, FE</td>
<td>11.76</td>
</tr>
<tr>
<td>Gindling (1991)</td>
<td>1/1</td>
<td>1982</td>
<td>OLS</td>
<td>28.50</td>
</tr>
<tr>
<td>Huber and Rahimov (2014)</td>
<td>1/2</td>
<td>2007</td>
<td>OLS</td>
<td>-34.98</td>
</tr>
<tr>
<td>Lehmann and Pignatti (2007)</td>
<td>1/2</td>
<td>2004</td>
<td>OLS</td>
<td>-6.80</td>
</tr>
<tr>
<td>Lehmann and Zaiceva (2013)</td>
<td>1/5</td>
<td>2003-2011</td>
<td>OLS, QR, FE</td>
<td>6.90</td>
</tr>
<tr>
<td>Magnac (1991)</td>
<td>1/1</td>
<td>1980</td>
<td>OLS</td>
<td>30.30</td>
</tr>
<tr>
<td>Marcouiller et al. (1997)</td>
<td>3/6</td>
<td>1990</td>
<td>OLS</td>
<td>16.50</td>
</tr>
<tr>
<td>Nguyen et al. (2013)</td>
<td>1/4</td>
<td>2002-2006</td>
<td>OLS, FE</td>
<td>4.83</td>
</tr>
<tr>
<td>Nordman et al. (2016)</td>
<td>1/6</td>
<td>2000-2004</td>
<td>OLS, FE</td>
<td>15.33</td>
</tr>
<tr>
<td>Tansel and Kan (2012)</td>
<td>1/6</td>
<td>2006-2009</td>
<td>OLS, FE</td>
<td>11.56</td>
</tr>
</tbody>
</table>


Notes: OLS=pooled ordinary least squares, FE=fixed effects regression, ML logit=multinomial logit regression, PSM=propensity score matching, DID=difference-in-difference estimators, QR=quantile regression. The sample covers these EMDE countries: Argentina, Brazil, Columbia, Costa Rica, Czech Republic, Ecuador, El Salvador, Hungary, Madagascar, Mexico, Peru, Poland, Russian Federation, Slovakia, South Africa, Tajikistan, Turkey, Ukraine and Vietnam.

*Average formal sector premium across all estimates, percent; a negative number indicates a wage penalty for formal sector workers.
### ANNEX TABLE 3.3.2 Meta regression analysis summary

<table>
<thead>
<tr>
<th>Moderator variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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</thead>
<tbody>
<tr>
<td>( \mu )</td>
<td>0.195***</td>
<td>0.11**</td>
<td>0.23***</td>
<td>0.21***</td>
<td>0.14***</td>
<td>0.24***</td>
<td>0.17***</td>
<td>0.18***</td>
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<tr>
<td></td>
<td>(0.03)</td>
<td>(0.04)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.04)</td>
<td>(0.04)</td>
<td>(0.05)</td>
<td>(0.06)</td>
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<tr>
<td>Female</td>
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<td>0.15*</td>
<td>0.12</td>
<td>0.12</td>
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<tr>
<td>Male</td>
<td>0.14**</td>
<td>0.13**</td>
<td>0.11*</td>
<td>0.10</td>
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<td>(0.06)</td>
<td>(0.06)</td>
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<td>Fixed Effects</td>
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<td>-0.14**</td>
<td>-0.13**</td>
<td>-0.13**</td>
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<td></td>
<td>(0.07)</td>
<td>(0.06)</td>
<td>(0.06)</td>
<td>(0.06)</td>
<td>(0.07)</td>
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<tr>
<td>Self-employed</td>
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<td>-0.32**</td>
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<td>-0.26*</td>
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<td>(0.13)</td>
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<td>Europe and Central Asia</td>
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<td>(0.07)</td>
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<tr>
<td>Adjusted ( R^2 )</td>
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<td>5.8</td>
<td>6.4</td>
<td>12.0</td>
<td>11.4</td>
<td>14.8</td>
<td>12.4</td>
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<tr>
<td>Number of obs.</td>
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<td>83</td>
<td>83</td>
<td>83</td>
<td>83</td>
<td>83</td>
<td>83</td>
<td>83</td>
</tr>
<tr>
<td>( \tau^2 )</td>
<td>0.06</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
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<tr>
<td>( I^2 )</td>
<td>99.6</td>
<td>99.5</td>
<td>99.4</td>
<td>99.5</td>
<td>99.4</td>
<td>99.4</td>
<td>99.4</td>
<td>99.1</td>
</tr>
</tbody>
</table>


Notes: *** \( p<0.01 \), ** \( p<0.05 \), * \( p<0.1 \); standard errors are in parenthesis. Within study standard errors of the estimates are used as weights to correct for the heterodasticity. The dependent variable is the informal-formal wage gap estimates by former studies (listed in Annex Table 3.3.1). \( \tau^2 \) - estimates of across-study variance. \( \tau^2 \) - residual variance due to study heterogeneity. \( \tau^2 \) captures the degree of across-study variations, and \( I^2 \) reflects the impact of across-study heterogeneity.
### ANNEX TABLE 3.4.1 Pre-existing informality and changes in poverty and income inequality: OLS

<table>
<thead>
<tr>
<th>Moderator variables</th>
<th>[1]</th>
<th>[2]</th>
<th>[3]</th>
<th>[4]</th>
<th>[5]</th>
<th>[6]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Annual change in poverty</td>
<td></td>
<td></td>
<td>Annual change in income inequality</td>
<td></td>
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</tr>
<tr>
<td>Initial poverty rate</td>
<td>-0.024</td>
<td>-0.025</td>
<td>-0.029</td>
<td>-0.020</td>
<td>-0.020</td>
<td>-0.017</td>
</tr>
<tr>
<td></td>
<td>[7.90]**</td>
<td>[7.94]**</td>
<td>[7.31]**</td>
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<td>[-5.51]**</td>
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<td>0.45</td>
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<td>R-squared</td>
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<td>0.28</td>
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Note: Estimated by ordinary least squares method. Dependent variable in Column \[1\]-\[3\]: Annual change in poverty headcount ratio (i.e., Poverty headcount ratio at $1.90 a day (2011 PPP), percent of population) over the earliest year and the latest year, in percentage points. Dependent variable in Column \[4\]-\[6\]: Annual change in Gini index over the earliest year and the latest year, in percentage points. Annual change in poverty headcount ratio (i.e., Poverty headcount ratio at $1.90 a day (2011 PPP), percent of population) over the earliest year and the latest year, in percentage points. Initial poverty rate (or Gini index for Column \[4\]-\[6\]) is the earliest available year between 1990-2005. Informality indicators are averages over 1990-2005. *, **, and *** denote that the coefficients are statistically significant at the 10 percent, 5 percent, and 1 percent levels, respectively. Heteroskedasticity-robust standard errors are estimated with t-statistics presented below the corresponding coefficients.
### ANNEX TABLE 3.5.1 Sample

<table>
<thead>
<tr>
<th>EMDEs (99)</th>
<th>Advanced Economies (28)</th>
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<tr>
<td>Angola</td>
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<td>Nicaragua</td>
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<tr>
<td>El Salvador</td>
<td>Niger</td>
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</table>

| Nigeria                     | Oman                     |
| Pakistan                    | Panama                   |
| Paraguay                    | Peru                     |
| Philippines                 | Portugal                 |
| Poland                      | Romania                  |
| Saud Arabia                 | Saint Lucia              |
| Senegal                     | Sierra Leone             |
| South Africa                | Singapore                |
| St. Vincent and the Grenadines | Sudan               |
| St. Lucia                   | Swaziland                |
| St. Lucia                   | Tanzania                 |
| St. Vincent and the Grenadines | Togo                |
| Trinidad and Tobago         | Tunisia                  |
| Turkey                      | Turkey                   |
| Uganda                      | Turkmestan               |
| Uruguay                     | United Kingdom           |
| Venezuela, RB               | United States            |
| Vietnam                     | United States            |
| West Bank and Gaza          | United States            |
| Zambia                      | Zimbabwe                 |


Note: The country sample and classification are taken from Loayza (2016).
References


CHAPTER 4

TWO TOPICAL ESSAYS:

Debt in Low-Income Countries: Evolution, Implications, and Remedies

Poverty Impact of Food Price Shocks and Policies
Debt in Low-Income Countries: Evolution, Implications, and Remedies

Debt vulnerabilities in low-income countries (LICs) have increased substantially in recent years. Since 2013, median government debt has risen by more than 17 percentage points of GDP and increasingly comes from non-concessional and private sources. As a result, in most LICs interest payments are absorbing an increasing proportion of government revenues. The majority of LICs would be hard hit by a sudden weakening in trade or global financial conditions given high levels of external debt, lack of fiscal space, low foreign currency reserves, and undiversified exports. A proactive effort to reduce debt-related vulnerabilities is a policy priority for many LICs, and focus needs to be placed on domestic resource mobilization, strengthening management practices for debt and public investment, building more resilient macro-fiscal frameworks, and developing domestic financial systems.

Introduction

In recent years, many low-income countries (LICs) have gained access to additional sources of finance, including private and non-Paris Club creditors. While this has enabled these countries to fund important development needs, it has also led to higher levels of public debt. The increasing share of market-based debt exposes many LICs to interest rate, and refinancing risks. These trends take place as the external environment is becoming more challenging and borrowing costs are expected to rise around the world, as described in Chapter 1. This means that, in the event of an abrupt deterioration in market conditions, some LICs may struggle to refinance debts from foreign sources and are at risk of capital flow reversals and dislocating currency depreciations. In this context, it is important for LICs to develop their domestic financial systems, strengthen capacity for domestic resource mobilization, improve macro-fiscal frameworks, and improve their resilience to shocks through the sound management of public debt and investment.

Against this backdrop, this Special Focus addresses the following questions:

- What are the key characteristics of the recent rise in LIC debt?
- How does rising debt relate to other LIC vulnerabilities?
- How can better debt management help reduce LIC vulnerabilities?
- How can complementary policy measures reduce LIC vulnerabilities?

Key characteristics of the recent rise in LIC debt

A recent sharp rise. Debt relief under the Heavily Indebted Poor Countries (HIPC) initiative and the Multilateral Debt Relief Initiative (MDRI) helped to reduce public debt among LICs from a median debt-to-GDP ratio of close to 100 percent in the early 2000s to a median of just over 30 percent in 2013. This downward trend reversed sharply thereafter, with the median debt ratio rising to above 50 percent by 2017 (Figure 4.1.1). The increase was large relative to other EMDEs, whose median debt rose by less than 11 percent of GDP from 2013 to 2017, compared to 20 percent for LICs. It was also broad-based: debt ratios rose in almost 90 percent of LICs, and a third experienced debt increases of more than 20 percentage points.

The key role of fiscal deficits. Primary fiscal deficits had largely been closed among LICs by

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This Special Focus was prepared by Sinem Kilic Celik and Patrick Kirby in collaboration with Andre Proite and Sebastian Essl from the Global Macro and Debt Analytics Group of the Macro, Trade, and Investment Global Practice.

1 LICs refers to countries meeting the World Bank Group’s definition of countries with per capita gross national income below $995 per year in 2017. This group includes 33 countries (Annex 4.1).

2 Most LICs—27 out of 33—benefited from either or both of the HIPC and MDRI programs.
2006, but widened steadily following the global financial crisis, especially among commodity exporters suffering from falling commodity prices. Rising deficits may also be the result of LICs’ increased ability to borrow as a result of HIPC and MDRI debt relief (Bayraktar and Fofack 2013; Marcelino and Hakobyan 2014). The primary balance of most LICs has been negative since the mid-2000s, and all but five (of 31 with available data) LICs had primary deficits in 2017, with a third carrying a primary deficit exceeding 3 percent of GDP.

Uses of borrowed funds. A rising debt burden is typically less of a reason for concern if it is used to finance investment that raises countries’ potential output, and therefore their ability to repay loans in the future (World Bank 2017). In some LICs, growing deficits reflected a push to finance public investment, as suggested by the doubling of median LIC public investment as a share of GDP from 3 percent in 2000 to 6 percent in 2015. This was the experience of Guinea-Bissau, Madagascar, Mali, and Nepal, where wider fiscal deficits were matched by higher public investment (IMF 2018a). These countries form a minority, however, as a substantial part of LIC borrowing has been used to finance a rise in current consumption. In resource-intensive countries in Sub-Saharan Africa, for example, the bulk of increased spending enabled by a rise in commodity prices went to public sector wages (World Bank 2018c). Some borrowing may also have been redirected toward the accumulation of private assets stored abroad.3

Dependence on external debt. Given their typically small local creditor base, a significant share of LIC borrowing comes from abroad and is denominated in foreign currencies. The resulting currency mismatch poses a challenge to LICs, as a depreciating currency can lead to a rise in the domestic value of the country’s debt burden and interest payments. This challenge is more severe in countries with a significant share of external debt priced at market rates, and less so for countries benefiting from the low interest rates on concessional debt.

The median LIC carries external debt, including both public and private debt, equivalent to 28 percent of GDP and almost half of total debt. Median external debt as a share of GDP has risen about 3 percentage points since 2012, with several important outliers. Commercial debt issuances have contributed to external debt rising to 94 and 77 percent of GDP in Mozambique and Tajikistan, respectively. In Uganda, external debt as a share of GDP has more than doubled since 2012, to more than 40 percent of GDP in 2017. The maturity composition of LIC external debt has remained broadly stable—short-term debt remained moderate at 5 percent of total external debt in 2016.

Shift toward non-traditional creditors. The

3Ndikumana and Boyce (2011) find that for every dollar in external loans to Sub-Saharan Africa, capital outflows increased by roughly 60 cents in the same year.
composition of public debt has shifted over the last decade, becoming increasingly non-concessional as LICs have increased reliance on financing from non-traditional sources (Figure 4.1.2). The median share of non-concessional debt in public debt rose to 55 percent in 2016 (the latest year for which data are available), an increase of nearly 8 percentage points since 2013, and 15 percentage points compared with a decade earlier. Commercial creditors have become an important source of credit for some countries (World Bank and IMF 2018b). Ethiopia, Mozambique, Rwanda, Senegal, Tajikistan, and Tanzania have all issued commercial public debt since 2010, generally denominated in U.S. dollars.\(^4\)

Non-Paris Club creditors, notably China, have also become a more important source of financing over the past decade, especially in Sub-Saharan Africa (World Bank 2015a). In 2016, non-Paris Club debt accounted for more than a fifth of the median LIC’s external debt, and about 13 percent of their public debt (World Bank 2018d). Major recipients of lending from non-Paris Club creditors (notably China) include the Democratic Republic of Congo, Ethiopia, Tanzania, Uganda, and Zimbabwe (Atkins et al. 2017).\(^5\) Chinese lending is typically provided for infrastructure projects, with approximately a third of loans to Africa funding transportation projects such as airports, railways, roads, and ports (Dreher et al. 2017). Loans are often tied to procurement from Chinese companies and are often administered through the China Export-Import Bank or the China Development Bank (Brautigan and Hwang 2016). According to estimates from Eom, Brautigam and Benabdallah (2018), loans from China account for at least 20 percent of total public debt in Ethiopia, Mozambique, and Zimbabwe. Lending arrangements are often not public, and they can be complex and varied (World Bank 2018b). While detailed information is scarce, some non-Paris Club debt is collateralized, which could reduce budget flexibility by earmarking revenues, could weaken the creditor’s incentive to assess the borrower’s debt sustainability, and (if large) could increase funding costs from other creditors who may reassess the probability of being repaid.

Rising cost of debt service. As debt loads have grown and become less concessional, interest payments have absorbed a growing share of government revenues. Among LICs, the median interest payments-to-revenue ratio rose to over 5 percent in 2017, up from just over 3 percent in 2013. The increase in the ratio was due to rapidly

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\(^4\) Of 11 LIC debt issuances since 2010, all were denominated in U.S. dollars, with the exception of one of Senegal’s two issuances in 2018, which was euro-denominated.

\(^5\) Each of these countries are estimated to have borrowed more than $2 billion from China between 2000 to 2017. Note that data on Chinese lending to LICs are estimates and have not been verified by the World Bank.
rising interest payments, with median interest payments among LICs having grown by over 128 percent versus 31 percent growth in government revenues.

Drivers of rising debt. Countries with the fastest rise in debt were often fragile and affected by a combination of conflict, weak governance, or commodity-dependence (World Bank 2018b). In The Gambia, government debt increased from nearly 60 percent of GDP in 2013 to an estimated 88 percent in 2017, with interest payments absorbing 42 percent of revenue. The rise in debt was a result of loose fiscal policy, bailouts of state-owned enterprises, and widespread mismanagement by the previous government prior to a transition to democracy in early 2017 (IMF 2018b).

In Mozambique, the government debt-to-GDP ratio has increased by close to 50 percentage points since 2013, reaching an estimated 102 percent in 2018, with interest payments rising from 2.6 percent of revenues to 16.5 percent over the same period. The deterioration was underpinned by rising deficits as fiscal policy remained loose amid lower commodity prices and subdued growth, and was aggravated by the inclusion of previously-undisclosed external commercial debt in 2016 (IMF 2018e). The country is in debt distress, and several payments to external borrowers have been missed.

Zimbabwe is also classified as being in debt distress. Over the last five years, government debt has risen substantially from just over 48 percent of GDP in 2013 to an estimated 82 percent in 2017. Persistently large fiscal deficits have partly been the result of an elevated public wage bill, which absorbed 90 percent of revenues in 2017 (IMF 2017). In addition, revenues remain subdued amid weak growth and structural rigidities, while transfers to the agricultural sector have kept non-wage expenditure elevated. Moreover, the deficits have partly been financed through an overdraft facility at the Reserve Bank of Zimbabwe that, given insufficient reserves, has led to money creation and exacerbated foreign-currency shortages.

Risk of debt distress. Higher levels of public debt, much of it external, and an increased reliance on commercial loans make many LICs vulnerable to currency, interest rate, and refinancing risks (Devarajan 2018; Gill and Karakülah 2018a,b). LIC vulnerabilities are reflected by the fact that almost all LICs have the lowest or second lowest grade in the OECD’s country credit risk classification. Because of rising arrears or the need for debt restructuring, as of September 2018, eleven LICs were assessed as being in debt distress or at a high risk of debt distress, compared to only six in 2015. For LICs assessed at low or moderate risk of debt distress, safety margins have eroded.

Other LIC vulnerabilities

Private debt: Due to shallow domestic capital markets and limited access to international finance, the median LIC has total private debt equivalent to only 18 percent of GDP, significantly less than the 41 percent ratio for the median non-LIC EMDE (Figure 4.1.3). Nonetheless, LIC private sector debt has been on a steady upward trend since 2005, rising by almost 8 percentage points. Excess private debt can sometimes be transformed into public debt, either directly through bailouts or indirectly through countercyclical government spending in response to private deleveraging, suggesting that the line between public and private debt can blur (Mbaye, Badia and Chae 2018).

Growth subject to downside risks. Growth in LICs is expected to remain resilient, supporting

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\[6\] Separately, some countries such as The Gambia are vulnerable to rollover risk because of heavy reliance on short-term domestic debt (IMF 2018c).

\[7\] There is one exception: The credit rating for Senegal has improved recently in the OECD credit risk classification, improving from 6 to 5 in a 0-7 rating system, with a higher number indicating higher credit risk (OECD 2018).

\[8\] A country is considered to be in debt distress if it is experiencing difficulties in servicing its debt, as evidenced, for example, by the existence of arrears, ongoing or impending debt restructuring, or if there are indications that a future debt distress event is probable. LICs in debt distress are Afghanistan, Burundi, Central African Republic, Chad, Ethiopia, Haiti, and Tajikistan. There is a total of 30 LICs who have a debt sustainability analysis (DSA) available under the Joint World Bank / IMF debt sustainability framework (DSF).

\[9\] Private sector debt refers to the sum of commercial banks’ and other financial corporations’ claims on the non-financial private sector, in percent of GDP.
their ability to service debt, but risks are tilted to the downside. LIC growth is expected to average 5.7 percent in 2018 and accelerate to just over 6 percent in 2019-20, supported by rising agricultural output and continued infrastructure investment (Chapter 1). However, over the next decade, weaker growth in major emerging markets may slow global demand for metals, which dampens growth prospects for LICs that depend on metals for government and export revenues (World Bank 2018b). Downside risks to this outlook predominate and include the possibility of a faster-than-expected slowdown among major trading partners (including China, a major commodity consumer); a renewed plunge in commodity prices; faster-than-expected tightening of financing conditions; and the possibility of natural disasters, conflict, or severe weather events.

**Elevated debt, lower investment growth, increased risks.** Rising levels of non-concessional public debt, often at variable rates, make some LICs susceptible to a sudden increase in borrowing costs, especially when they have substantial refinancing needs in coming years or have borrowed in foreign currencies. As advanced economies continue to withdraw monetary policy accommodation, new debt issuances and debt rollovers may become more expensive, resulting in rising LIC debt service costs that could weaken investment and lower medium-term growth (World Bank 2015b, 2016, and 2017). Fiscal consolidation, while often necessary, can also dampen growth in the short term.

In the absence of sufficient lending made available at concessional terms, there is a risk that high public debt will lead to higher interest rates, crowding out private investment and slowing growth. Bevan (2012) argues that although evidence in the literature for the crowding out effect on investment in LICs is weak, it may be more important where financial depth is low.

**Substantial current account deficits.** Almost all LICs carry persistent, substantial current account deficits, with an estimated median of 6.8 percent of GDP in 2017 (Figure 4.1.4). Forty percent of LICs had current account deficits that widened by at least 3 percentage points of GDP over the last decade. Among metals exporters, rising deficits reflected the pickup in import-intensive mining investment, while in non-resource-intensive countries it reflected high public investment.

Countries relying on capital inflows to finance a large and persistent current account deficit can be more vulnerable to currency crises, as weaker investor confidence can result in a slowdown in capital inflows, leading to higher borrowing costs, downward currency pressures, difficulties in

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**FIGURE 4.1.3 Risks to LIC debt**

Private sector debt has risen alongside public debt in LICs. LIC exports tend to be concentrated in a few products, generally commodities. LIC growth is accelerating but risks are tilted to the downside. Over the medium-term, demand for many commodities is expected to slow, which may pose a challenge for exporters.

A. Private sector debt

B. Median export concentration

C. Growth

D. Global commodity demand growth


A. Non-LIC EMDEs= emerging market and developing countries excluding LICs; LICs= Low-income countries. Domestic credit to the non-financial private sector provided by commercial banks and, if data are available, by other financial corporations. Median debt, based on 148 EMDEs and 29 LICs.

B. Orange lines indicate interquartile ranges of Herfindahl-Hirschmann concentration index, which measures the degree of product concentration, with values closer to 1 indicating a country’s exports are highly concentrated in a few products.

D. To ensure comparability, 2010-16 is model-predicted commodity demand growth.

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10 Bevan (2012) argues that although evidence in the literature for the crowding out effect on investment in LICs is weak, it may be more important where financial depth is low.
rolling over debt, and possibly macroeconomic and financial market stress (Roubini and Wachtel 1999). Current account deficits in LICs, however, are typically financed by capital inflows from development assistance, remittances, foreign lending, and foreign direct investment. The stable, long-term and often concessional nature of this financing mitigates some of the risks usually associated with large current account deficits. Foreign direct investment and development assistance flows were generally more than adequate to finance LICs’ current account deficits—the median LIC received inflows of these types 1.6 times as large as its current account deficit. In more than half of LICs, development assistance alone was greater than the total current account deficit. Median FDI inflows were equal to about half the current account, except for metals exporters where it was considerably more.

FDI flows to LICs, however, are particularly sensitive to fluctuations in global growth and liquidity (Burger and Ianchovichina 2017). Among these countries, commodity exporters, particularly metals exporters, are particularly vulnerable to sudden swings in FDI flows that accompany changes in the external environment—FDI flows are more than twice as volatile in metal-exporting LICs than in other EMDEs. While external vulnerabilities can be mitigated by a strong foreign reserve position, more than 40 percent of LICs with available data have reserves close to or below three months of imports. Moreover, increased exposure to non-Paris Club and commercial creditors may pose coordination challenges for debt resolutions in the future, making the consequences of debt distress even more disruptive, especially if debt is collateralized (World Bank and IMF 2018a).

Role of better debt management

Goal of sound debt management. In most LICs, government debt is the largest domestic financial portfolio, and debt management operations can be substantial relative to public spending and economic activity. A sound macro-fiscal policy framework requires that public debt is sustainable and can be serviced under a wide range of circumstances at reasonable costs. While ex ante the level of debt is mainly determined by fiscal policy, ex post the composition of debt can play an important role in safeguarding debt sustainability. Effective debt management plays a critical role in funding the government’s financing needs in a timely fashion, helping ensure low debt servicing costs at an acceptable degree of risk, and supporting the development of domestic securities markets. In addition, debt management can help minimize fiscal risks stemming from contingent liabilities, such as guarantees or on-lending to state-owned enterprises or through public-private partnerships, through effective monitoring and reporting.

The benefits of sound debt management are fourfold:

- **Lowers debt servicing costs.** In many LICs, debt service payments absorb a significant share of public revenues (as much as 20 percent in Burundi, Eritrea, and The Gambia), reflecting low revenue bases and sizable debt loads. Effective debt management can help avoid excessive debt service costs by increasing awareness of the financial options available, enabling countries to borrow at competitive costs with a prudent degree of risk.

- **Supports financial sector development.** More developed local-currency bond markets can promote economic stability by reducing the reliance on external debt, facilitating the implementation of counter-cyclical fiscal policies, and enhancing resilience to sudden reversals of capital flows. Public debt instruments can serve as a benchmark for pricing of private sector debt instruments. Local-currency bond markets can enable diversification from bank financing and provide a savings vehicle for a variety of investors to support growth (World Bank and IMF 2014).

- **Reduces economic volatility.** Effective debt management can reduce economic volatility by selecting debt instruments that help insulate the government balance sheet from uncertainties. Both currency and interest rate shocks can be mitigated in this fashion, making a country less susceptible to contagion...
and financial risks, and supporting cheaper and more stable funding for the private sector.

- Enhances public sector transparency and medium-term planning. A key element of sound public debt management is the public and comprehensive reporting of government debt, which improves the capacity of policymakers and the broader public to assess the fiscal position and appropriately weigh public balance sheet risks alongside spending and revenue priorities.

Evolution of debt management in LICs. Despite some improvements, debt management in LICs still suffers from substantial deficiencies. Weaknesses in debt transparency, notably in monitoring and reporting, are pervasive. Medium-term debt strategies are becoming more common but have shortcomings in quality and implementation. Capacity and institutional set-up are often lagging.

- Debt transparency. Better compilation and monitoring of public debt and guarantees are needed to ensure that risks are detected before they materialize (World Bank 2007). Recent examples of hidden debt and discrepancies among debt statistics point to continued low debt recording capacity, weak legal frameworks, and governance challenges. Debt Management Performance Assessments (DeMPA) suggest that, of the seventeen LICs with available data, minimum requirements in debt recording are met by only eight, and monitoring guarantees are met by only four. Due to shortcomings in accuracy, timeliness, coverage and completeness of debt records, only four of these seventeen countries met the minimum requirements for debt reporting and evaluation (Figure 4.1.5). Only a third of the 59 countries eligible for International Development Association borrowing report private sector external debt statistics (World Bank and IMF 2018d).

- Debt management strategies. A growing number of countries are producing medium-term debt management strategies. However, their quality varies significantly, and implementation is often lagging. Few countries are aligning the processes for managing medium-term debt with their budget process. 11

11 The World Bank, in partnership with the IMF, has been supporting increasing debt management capacity in LICs through its Debt Management Facility (DMF). Building on the progress achieved and on lessons learned in recent years, this involves supporting further improvements in debt recording and monitoring, increasing debt transparency, and adding to debt management capacity. The DMF also seeks to strengthen macro-fiscal frameworks, including through improved domestic revenue mobilization, and to advance the implementation of growth-enhancing structural reforms. Since 2009, the DMF has supported over 280 Technical Assistance missions in 75 countries and 14 subnational governments, trained client practitioners and hosted around 40 debt management practitioners. A growing number of countries prepare and publish debt management strategies, the quality of debt records in many LICs has improved, and many countries have well-structured debt management offices. Several countries have strengthened their legal framework and improved their operational risks management with the support of the DMF.
Broader issues. Some of the most pressing challenges include insufficient legal frameworks, weak capacity, lack of coordination between fiscal and monetary policy, inefficient management of cash and fiscal risks, and poor audit and risk control procedures.

Complementary policy measures

Domestic resource mobilization. Among LICs, there is considerable scope to enhance tax revenues and reduce the need to rely on debt financing (Baum et al. 2017). In the median LIC, government revenues accounted for only 19 percent of GDP in 2017, well below 28 percent of GDP in the median non-LIC EMDE. This highlights the need to broaden tax bases, especially for higher-income households, in a way that minimizes economic distortions and that carefully manages trade-offs between efficiency and equity (World Bank 2018a). Unexpected revenue windfalls from sudden improvements in a country’s terms of trade can be set aside to reduce fiscal deficits and debt.

Improving spending efficiency. LICs have significant infrastructure needs that require debt financing. However, debt sustainability concerns associated with the financing of infrastructure may be lessened if these expenditures are accompanied by stronger long-term growth and better macro-fiscal, budgeting, and financing frameworks. There may also be room to cut unproductive spending (often subsidies) in order to allow for more growth-enhancing or better-targeted programs. Debt used to finance projects that generate a revenue stream is less likely to be unsustainable. There is also often considerable scope to improve the efficiency of investment spending by improving the institutions and procedures governing project appraisal, procurement, and monitoring. By one estimate, a country moving from the lowest quartile to the highest quartile in the efficiency of public investment could double the impact of that investment on growth (IMF 2015).

Development of local financial markets. Reliance on external funding means that there is often a currency mismatch in LIC borrowing and revenues, leaving countries vulnerable to swings in the value of the currency. The development of local currency bond markets can help mitigate this risk, though they are often a relatively high-cost option. These markets require a functional money
market, primary and secondary markets, a diverse base of investors, a stable regulatory system which includes reliable custody and settlement systems, and a significant improvement in debt management capacity. Sound macroeconomic policy and financial sector stability are also critical, as is transparent and effective communication by the government. Alongside improved debt management, growing local financial markets can help countries graduate from concessional lending by mitigating some of the higher costs and greater risks associated with non-concessional debt.

**Better data collection.** Transparency about balance sheets is a pre-requisite for sound debt management. Among other gaps, there is often limited data on contingent liabilities (especially those arising from state-owned enterprises and public-private partnerships) and the assets held by LIC governments. These data limitations are especially acute for debt issued by commercial and non-Paris Club creditors. Improving data collection practices for LIC debt would help policymakers make informed and appropriate borrowing decisions and allow the public to hold the government accountable for its fiscal management (World Bank and IMF 2018d).

**Monetary policy and exchange rate regimes.** More resilient monetary policy frameworks and foreign reserve buffers can help mitigate the impact of terms-of-trade and other shocks, including on the fiscal position (Adler, Magud and Werner 2017). More LICs could join the growing number of EMDEs where improvements in the monetary policy regime have reduced inflation and, where appropriate, allow greater exchange rate flexibility to absorb shocks.

**Rigorous and transparent lending standards.** Creditors also have a role to play in containing debt vulnerabilities. The Addis Ababa Action Agenda calls for debtors and creditors to work together to prevent and resolve unsustainable debt situations. Creditors can aim for good practice in lending, drawing on principles for sustainable lending such as those being championed by G20 countries (G20 2018).

**Conclusion**

In recent years, a broad-based rise in borrowing has increased public debt vulnerabilities in LICs. The composition of debt has also shifted, as many LICs have increased their exposure to non-Paris Club creditors and market-based debt, which may pose coordination challenges for any future debt resolution. While increased access to market funding has provided LICs with opportunities to address development needs, it has also exposed some countries to currency, interest rate, and refinancing risks.

The number of LICs at high risk of debt distress or in debt distress has increased significantly, and safety margins in many LICs currently assessed at low or moderate risks of debt distress have eroded. External gross financing needs are likely to rise further as current account deficits widen and large international bonds fall due. By increasing the effectiveness of resource mobilization, public spending, and debt management—supported by better data collection—LICs can reduce the probability of costly defaults, enhance debt transparency, support sustainable financial sector development, and reduce economic volatility.
ANNEX 4.1 Comparison of LIDCs and LICs

This Special Focus discusses LICs following the World Bank Group definition of countries with per capita gross national income below $995 per year. This group includes 33 countries. It differs from other reports, such as IMF and World Bank (2017a and 2018a), which include additional middle-income countries following the IMF definition of Low-Income Developing Countries (LIDCs). The term “LIDC” refers to countries with low per capita Gross National Income and comparatively weak socioeconomic indicators.

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Sources: IMF and World Bank.
Poverty Impact of Food Price Shocks and Policies

In the event of large swings in world food prices, countries often intervene to dampen the impact of international food price spikes on domestic prices and to lessen the burden of adjustment on vulnerable population groups. While individual countries can succeed at insulating their domestic markets from short-term fluctuations in global food prices, the collective intervention of many countries may exacerbate the volatility of world prices. Insulating policies introduced during the 2010-11 food price spike may have accounted for 40 percent of the increase in the world price of wheat and one-quarter of the increase in the world price of maize. Combined with government policy responses, the 2010-11 food price spike tipped 8.3 million people (almost 1 percent) into poverty.

Introduction

In August 2011, nominal international food prices hit an all-time high.1 This followed shortly after the 2007-08 food price spike, which pushed an estimated 105 million people into extreme poverty (Ivanic and Martin 2008). This event also prompted widespread concerns about the food security of the poorest and fears over a potential world food crisis. Although food prices have declined considerably since then, in real terms, they are still significantly above their lows in 2000 (Figure 4.2.1).

Food price spikes such as in 2010-11 may materialize again as the growing frequency of extreme weather events increases the risk of disruption to food production, setbacks in food availability and access to food. World hunger and severe food insecurity rose during 2014-17, reversing the decline of the previous decade. In 2017, the number of undernourished people reached 821 million, up by 5 percent since 2014 and a setback in achieving the Sustainable Development Goal of eradicating hunger by 2030 (FAO et al. 2018). G20 policy makers have recently reiterated the urgency of tackling the challenges to achieving food security (G20 2018).

While agricultural and food prices are expected to rise only moderately in 2019, significant upside risks could materialize as a result of higher-than-expected energy prices, El Niño events, or trade tensions. First, higher-than expected energy prices, a key input in the production of most agricultural commodities, could raise grain and oilseed prices. Energy prices affect agricultural production costs directly (through fuel use) and indirectly (through fertilizer and other chemicals use and an incentive to shift production to biofuels). Second, an El Niño event is expected with an 80 percent probability during December 2018-February 2019. Should this materialize, heavier-than-expected rains could occur in Central Asia, South America, and East Africa, while drier-than-normal conditions could affect Central America, the Caribbean, and Southern Africa, affecting the prices of many agricultural commodities. Finally, although the escalation of existing trade frictions represents a downside risk for the price of agricultural commodities, policy measures introduced by major producers and exporters in response to higher tariffs could also affect prices (World Bank 2018).

Several forces have raised food prices during the 2000s. A dramatic increase in demand for feedstock for biofuel production in the early 2000s put considerable pressure on markets for grain and contributed to a rundown in stocks (Akiyama et al. 2001; Wright 2014). Population growth and urbanization, as well as a shift in diets toward animal-based foods, created demand pressures despite an increase in agricultural productivity in emerging and developing economies (EMDEs; Fukase and Martin 2017). Slowing yield growth and declining availability of agricultural land also constrained food production growth. Extreme climate events (e.g., El Niño, droughts, and

Note: This Special Focus was prepared by David Laborde, Cilla Lakatos, and Will Martin. Research assistance was provided by Xinyue Wang and Heqing Zhao.

1 Unless otherwise stated, the concept of food prices as used in this Special Focus refers to the commodity price of major staple foods such as rice, wheat, and maize.
natural disasters), particularly when agricultural stocks are low, and the financialization of agricultural futures markets have also contributed to food price volatility.

Food price increases have important macro- and microeconomic impacts through several channels. At the macroeconomic level, food price increases result in higher inflation, which can reduce household real incomes. For food-importing countries, high food prices can also result in terms-of-trade shocks that lower growth and government policy space.

The microeconomic impact of food price increases on poverty and inequality depends on the net food seller status of the poorest households. For households that are net sellers of food products (such as farmers, agricultural workers, and small land owners), rising food prices increase real incomes. By contrast, they lower the real incomes of households who are net buyers of food. On average, sharp increases in food prices raise poverty, reduce nutrition, and curtail the consumption of essential services such as education and healthcare (World Bank 2011).2

Countries often use policy interventions to dampen the domestic impact of international food price spikes and lessen the burden on vulnerable population groups. For example, during the 2007-08 food price spike, close to three-quarters of EMDEs took policy action to insulate their domestic prices from the sharp increase in international food prices (World Bank 2009). In the event of food price spikes, net food-importing countries usually intervene by lowering trade protection (typically tariffs) on food items, while net food-exporting countries impose export restrictions or bans. These policies are often complemented with social safety net programs such as cash transfers or school feeding programs.

To the extent that policy interventions reduce the transmission of international price spikes to domestic markets, they may appear to be successful for individual countries. However, the combined intervention of many countries raises international prices. These insulating policies tend to encourage consumption and reduce production during price spikes. This, in turn, results in higher import demand and reduced export supply that further drive up global prices. During price plunges, government interventions encourage greater exports and greater global supply that further depresses prices. Only countries that insulate themselves to an above-average degree can reduce price volatility in their domestic markets (Anderson, Martin, and Ivanic 2017).

The international community has recognized the importance of ensuring the stability and availability of food supplies as key to addressing several development objectives. The Sustainable

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2 In the longer term, once producers and consumers have adjusted to the increases and wage rates have responded, sustained increases in food prices may lower poverty by raising incomes of poor food producing households (Ivanic and Martin 2014a; Gillson and Fouad 2014).
Development Goals (SDGs) give food security a high priority: the second SDG sets out explicitly the goal to “end hunger, achieve food security and improved nutrition, and promote sustainable agriculture.” Other SDGs are strongly interconnected: food, agriculture and nutrition play an important role in SDGs on ending poverty, improving health, fostering sustainable consumption and production, and encouraging climate change adaptation and mitigation.

In this context, this Special Focus addresses the following questions:

- How do food price shocks affect EMDEs?
- How do countries intervene to reduce the impact of food price shocks?
- What was the impact of the 2010-11 food price shock on poverty?

The Special Focus presents the following findings:

- At the macroeconomic level, a high share of agriculture and food in total output, consumption, employment, trade, and government revenues heighten countries’ vulnerability to volatility in international food prices. At the microeconomic level, food price spikes are felt most severely by the poorest segments of the population who tend to be net food buyers.

- Governments in EMDEs tend to respond particularly strongly to sharp changes in world prices for staple foods—such as rice, wheat and maize—to smooth volatility. Domestic food prices are considerably less volatile than world food prices in the short run, but over the longer term, there is a tendency for domestic and world prices to return to their original relationship. In the short run, a 1 percent increase in world rice, wheat and maize prices is associated with an increase in domestic prices by 0.6 percent, 0.7 percent, and 0.8 percent, respectively.

- While individual countries can succeed at insulating their domestic markets from short-term fluctuations in global food prices, their combined interventions make global food prices more volatile. Insulating policies introduced during the 2010-11 food price spike accounted for 40 percent of the increase in the world price of wheat and one-quarter of the increase in the world price of maize. In contrast, a reversal of earlier government interventions in rice markets dampened the degree to which world prices increased by about 50 percent.

- The 2010-11 food price spike, and the widespread government intervention that accompanied it, increased the number of poor living on less than $1.90 per day by almost 1 percent or 8.3 million.

### Food price shocks and their effects

At the macroeconomic level, a high share of agriculture and food in total output, consumption, employment, trade, and government revenues heighten countries’ vulnerability to volatility in international food prices. At the microeconomic level, a high share of net food buyers among the poorest segments of society heightens the adverse effects of food price spikes on poverty and income inequality.

#### Macroeconomic channels

**Reliance on food imports and production.** Agriculture accounts for close to one-third of total value added and two-thirds of total employment in LICs. This is almost three times their shares in the average EMDE (Figure 4.2.2; Aksoy and Beghin 2004). For example, in Burkina Faso and Burundi, agriculture accounts for more than four-fifths of total employment. In Chad and Sierra Leone, it accounts for more than half of domestic value added. In addition, more than three-quarters of LICs are net food importers compared to only half of EMDEs. In these net food-importing LICs, net food imports amount to 5.4 percent of private consumption. Benin and Gambia are

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3 High trade costs, such as tariffs and border delays, can bias downwards estimates of the share of food imports (Tombe 2015).
particularly vulnerable to high food prices, with net food imports adding up to more than 10 percent of private consumption.\footnote{Conversely, heavy reliance on food exports heightens vulnerability to food price declines. For example, in Malawi, net food exports amount to 12 percent of total private consumption.}

**Inflation.** A surge in food prices increases consumer price inflation. For example, the 2007-08 and 2010-11, LIC inflation more than doubled, from 7 to 15 percent during 2007-2008 and from 5 to 11 percent during 2010-2011. The increase in EMDE inflation was less pronounced, from 7 to 11 percent during 2007-2008 and from 5 to 6 percent during 2010-2011. Food prices accounted disproportionately for these increases in inflation—for about two-thirds in LICs and more than half in EMDEs. In vulnerable LICs such as Benin and Niger, where net food imports amount to 15 and 7 percent of household consumption, respectively, inflation surged from 1 percent to 8 percent and 0.2 percent to 11 percent, respectively, during the 2007-08 food price spike.

**Terms of trade.** Sharp increases in food prices can constitute significant adverse terms-of-trade shocks that lower growth, especially in countries that are large net importers of food. More than three-quarters of LICs are net food importers. The median LIC’s terms of trade declined by 2 percent and 4 percent during the 2007-08 and 2010-11 food price spikes, respectively. In some, the deterioration was much steeper. For example, the terms of trade of Sierra Leone, a LIC highly reliant on food imports, weakened by 10 percent during each of these food price spike episodes.\footnote{Severe terms of trade shocks are considerably more common in LICs than in advanced economies and, of all possible external shocks, tend to have the most severe output cost in LICs (IMF 2011; Becker and Mauro 2006).}

In heavy food importers, the exchange rate depreciation typically associated with adverse terms of trade shocks can compel central banks to tighten monetary policy and further lower growth. Indeed, during the 2007-08 food price spike, close to half of EMDE central banks responded to rising inflation and depreciation by tightening monetary policy.\footnote{Based on a sample of 54 EMDEs.}

**Fiscal policy constraints.** Absent stabilizing fiscal arrangements, heavy reliance on food and agricultural exports can introduce volatility into public finances and erode fiscal sustainability: rising food prices may increase tax revenues from the agricultural sector and encourage governments...
to spend. Conversely, when food prices fall, revenue losses in the agricultural sector are exacerbated by political pressures to subsidize food production. During the sharp rise in food prices in 2007-2008, LICs’ fiscal balances deteriorated, on average, by close to 1 percentage point of GDP, in part due to higher food import bills. Food price spikes may also cause sociopolitical instability, including political unrest and food riots (Barrett 2013).

**Microeconomic channels**

Rising food prices impact households through price and income effects. They reduce households’ purchasing power but raise income generated from food production. The overall impact on poverty and income inequality depends on the relative magnitude of these effects for households in different segments of the income distribution.

In LICs, households spend on average close to 60 percent of their income on food, more than one-third more than in EMDEs (Figure 4.2.3). In countries such as Burundi and Guinea, the share of food expenditures is even higher, accounting for more than 70 percent of total consumption of households. In LICs, more than one-third of households’ consumption expenditure on food is spent on staple foods such as cereals and vegetables. These staple foods are considerably more exposed to international price volatility than domestically-processed food products (Figure 4.2.1).

For households that are net sellers of agricultural and food products (e.g., farmers), rising food prices raise incomes. More than one-fifth of households around and below the poverty line of $1.90 per day are net food sellers in the average EMDE and LIC. Households around and below the poverty line in these countries tend to generate about one-quarter of their incomes from food production. In contrast, poor urban households are typically net buyers of food that spend a large share of their consumption expenditure on food (Aksoy and Hoekman 2010).

On average, many of the poor in EMDEs and LICs are net buyers of food. As a result, food price spikes tend to raise poverty, reduce nutrition and cut consumption of essential services such as education and healthcare. For example, the 2007-2008 rise in food prices is estimated to have raised the number of poor by 105 million (10 percent of the people living on less than a one dollar a day; Ivanic and Martin 2008). In extreme cases, food price spikes can induce food insecurity and hunger, with severely adverse long-term impacts on human capital.

**Figure 4.2.3 Microeconomic channels of transmission from global food prices**

At the microeconomic level, a high share of net food buyers among the poorest segments of the population heightens the adverse effects of food price spikes on income distribution and poverty.

![Figure 4.2.3 Microeconomic channels of transmission from global food prices](image-url)

Sources: International Food Policy Research Institute, World Bank.
A. Based on data from the Global Consumption Database reflecting on the share of food in total consumption expenditure of households. Data is available for 63 EMDEs and 25 LICs. The base year of the household surveys differs but the data has been converted to a common reference year, 2010. The share of income spent on food is likely to be different.
B. Based on data from the Global Consumption Database on the share of products in total household consumption expenditure. Data is available for 63 EMDEs and 25 LICs. The base year of the household surveys differs but the data has been converted to a common reference year, 2010. The share of income spent on food is likely to be different.
C. Based on data from the Global Consumption Database on the share of net food sellers. Data is available for 63 EMDEs and 25 LICs. The base year of the household surveys differs but the data has been converted to a common reference year, 2010. The share of income spent on food is likely to be different.
D. Averages weighted by the number of poor for a sample of 22 EMDEs and 7 LICs. Poverty line is defined as $1.90/day.

7 Vulnerable groups such as women and children, are more likely to be disproportionately affected.
Government interventions during food price shocks

In the event of large swings in global food prices, governments are confronted with difficult policy choices. One option is to allow domestic prices to adjust to world food price changes, exposing domestic consumers and producers to changes in their real incomes. Even if a sizable non-tradeable service component in the cost of providing consumers with food such as transportation, storage, retail dampens the pass-through of world food price shocks into domestic markets, allowing domestic food prices to adjust may raise inflation in the short-run and, in countries where inflation expectations are poorly-anchored, in the medium-to long-run.8

Alternatively, governments can spare consumers or producers from these losses by reducing the transmission of international food price shocks to domestic markets.9 As measured in this Special Focus, policy intervention is reflected in the ratio of domestic to world prices—the “protection rate.” During a period of rising world prices, the protection rate declines when a country seeks to insulate its domestic markets from the increase in world prices. If the protection rate rises, policymakers are compounding the increase in world prices.

In practice, during the 2007-08 food price spike, close to three quarters of EMDEs took policy action to insulate their economies from the sharp increase in international food prices (World Bank 2009). The most commonly used interventions were reductions in taxes, including import duties and consumer taxes (Figure 4.2.4).10 Net importers frequently intervened by lowering import tariffs or even by introducing import subsidies, while net exporters imposed export restrictions or bans to dampen the increase in domestic prices.11

Domestic and world food price dynamics

Domestic food prices are considerably less volatile than global food prices in the short run, but over the longer term, there is a tendency for domestic prices to return to their original relationship with international prices (Figure 4.2.5). This does not necessarily imply that protection rates become zero, but that they return to their pre-spike levels.

Governments in EMDEs tend to respond particularly strongly to sharp changes in the world prices of staple foods—such as rice, wheat and maize—to reduce the volatility of domestic prices. For staple foods, domestic price movements can diverge substantially from international price movements in the short run, but converge in the longer term.

The movements of world and domestic staples food prices during the latest two food price spikes (2007-08 and 2010-11) resembled similar earlier episodes: world prices rose rapidly, domestic prices rose only gradually. However, the 2010-11 spike was different from previous episodes in several aspects. The 2007-08 increase in food prices came after a long period of stability in food prices. In 2007-08, world prices of all staple foods increased steeply, led by the strong increase in the world price of rice. Most countries reacted strongly by introducing insulating policies. In contrast, the 2010-11 episode occurred when world markets and policies were still normalizing from the 2007-08 episode. Government interventions differed considerably across countries and across

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8 The decline in real incomes associated with higher inflation would entail welfare losses, especially when consumers are loss- and risk-averse (Gouel and Jean 2015; Freund and Ozden 2008; Giordani, Rocha, and Ruta 2016; Easterly and Fischer 2001). In principle, monetary policy tightening can offset inflationary effects from rising global food prices to ensure that rising food prices remain a purely relative price change and do not become entrenched in higher inflation. However, this would come at the cost of reduced economic activity (Lustig 2009).

9 Policymakers may also have a longer-term goal to protect (or to tax) domestic agents (Grossman and Helpman 1994). In empirical work based on political economy models, protection rates vary to reduce both the costs associated with adjusting prices and the costs of providing a rate of protection that differs from the long-run political equilibrium (Anderson and Nelgen 2011; Ivanič and Martin 2014b). The less than perfect pass-through world price shocks into domestic markets is explicitly considered.

10 If countries are insulating primarily through subsidies and are fiscally constrained, their ability to insulate will be limited (Ianchovichina, Leoning and Wood 2014).

11 For net importers, untargeted food subsidies have implications for government revenues and fiscal space. If financed by aid, the impact on fiscal space is limited. Alternatively, targeted transfers may be more effective in protecting vulnerable groups with limited macroeconomic repercussions.
commodities. On average, government interventions (or the unwinding of earlier interventions) actually raised domestic rice prices more than the modest increase in world prices.

Rice. Rice was the staple food with the largest price increase during the 2007-08 food price spike. Between January 2007 and May 2008, world rice prices almost tripled. This sharp increase reflected export restrictions introduced by major producers (e.g., India and Vietnam) motivated by food security concerns, panic buying by several large importers, a weak dollar, and record high prices of oil, which is a major input into food production (Childs and Kiawu 2009). During this episode, domestic markets were largely insulated from this global rice price spike (Ivanic and Martin 2008). By contrast, during the 2010-11 price spike, rice prices increased much less, by about 30 percent between June 2010 and May 2012. In some countries, adverse supply conditions combined with changes in non-tariff trade policies resulted in domestic rice prices rising above world prices. Instead of insulating policies, on average, EMDEs implemented policies that raised domestic prices relative to world prices (Figure 4.2.5).

Wheat. Between February 2007 and March 2008, world wheat prices more than doubled, partly in response to lower-than-anticipated wheat production caused by drought in Australia, Ukraine and other major exporters. Strong policy intervention partially insulated domestic markets from the global wheat price spike and their subsequent collapse in the aftermath of the global financial crisis in 2009-10. Similarly, during the 2010-11 event, world wheat prices more than doubled between June 2010 and May 2011. This time, the increase in world prices was partly driven by lower-than-expected production and exports in Kazakhstan, Russia, and Ukraine and excessive rains in Australia that damaged wheat crops (World Bank 2010). Large orders from major wheat importers in the Middle East and North Africa added to price pressures. Since 2011, global and domestic wheat prices have changed, broadly synchronously.

Maize. During the 2007-08 food price spike, the world price of maize almost doubled, partly as a

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12 The world price of 5 percent broken white Thai rice increased from $313/mt to $902/mt.
13 In Vietnam, for instance, domestic rice prices rose by 41 percent between July-October 2010 due to lower-than-expected production, prior commitments on exports, and high inflation from a depreciating currency.
14 The world price of U.S. Hard Red Wheat (HRW) increased from $196/mt to $440/mt.
15 The world price of U.S. Hard Red Wheat (HRW) increased from $313/mt to $902/mt.

**FIGURE 4.2.4 Food-related government policies**

Countries often use policy interventions to dampen the domestic impact of international food price spikes and lessen the burden on vulnerable population groups. In the short run, domestic markets for key staple foods, such as rice and wheat, are highly insulated from global food price swings. Insulation policies undertaken during the 2010-11 episode exacerbated the volatility of world prices and accounted for about 40 percent of the increase in the world price of wheat and one-quarter of the increase in the world price of maize.
result of increasing U.S. demand for maize stimulated by mandatory targets for ethanol production.\footnote{Between January 2007 and June 2008, the world price of maize increased from $165/mt to $287/mt.} Similarly, during the 2010-11 episode, the world price of maize increased significantly. As in the case of wheat, adverse weather-related events in major maize exporting countries contributed to the spike in world prices.

In contrast, many countries in Sub-Saharan Africa benefitted from excellent maize harvests, which in combination with unpredictable trade policies led to sharp falls in domestic prices.

### Insulation of domestic food markets

**Measuring insulation of domestic food markets.** The degree of insulation of domestic markets from world food price swings can be quantified using an Error Correction Model (Annex 1). The model regresses the log of the protection rate on the log of world prices and the deviation from long-term “equilibrium” food prices. The model estimates the degree of insulation to global price changes in both the short run (specifically, a negative coefficient on short-term changes in global food prices) and long run (specifically, a negative coefficient on the long-term relationship between domestic and global food prices). The sample used here includes annual data for 8 food commodity prices in 82 countries, of which 44 are EMDEs and 12 are LICs, during 1955-2011.

**Estimates of short-term insulation.** Estimates point to considerably short-term insulation in markets for key staple foods such as rice and wheat (Figure 4.2.4). Among these key staples, insulation is the highest for rice. In the short run, a 1 percent increase in global rice, wheat, and maize prices is associated with an increase in domestic prices of 0.6 percent, 0.7 percent, and 0.8 percent, respectively.

**Effectiveness of insulating policy measures.** Certain types of interventions in markets for staple foods have raised volatility in domestic markets. For example, during the 2008-09 food price spike, several African countries intervened in food pricing, marketing, and trade policy to stabilize domestic maize markets. Countries that intervened most intensively experienced the highest domestic price volatility, mostly because of the ad hoc and unpredictable nature of these interventions (Chapoto and Jayne 2009).

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16 Between January 2007 and June 2008, the world price of maize increased from $165/mt to $287/mt.
use of an export ban during food price spikes, possibly related to a domestic drought, illustrates the tradeoffs between different policy instruments:

- **Ensuring food security.** By restricting the sale of food for exports, an export ban increases domestic supply and dampens domestic food price increases. This can help net-food buyers access food.

- **Alleviating poverty.** Net food-selling farmers are likely to be hardest-hit by a drought. An export ban reduces their ability to mitigate their production losses with higher incomes from higher prices. If these farmers are among the poorer segments of the income distribution, the export ban will likely increase poverty, as it did in Zambia during the 2016-17 El Niño event (Al-Mamun et al. 2017).

- **Volatility.** While export bans may alleviate pressures during a specific situation, they heighten domestic price volatility by preventing domestic shocks from being dissipated through changes in trade. If bans are backed up by stockholding measures such as those used in India they can be consistent with domestic price stabilization, although the fiscal costs of this policy approach tend to be high relative to that of price insulation (Gouel, Gautam, and Martin 2016).

**Synchronous policy measures.** While individual countries can succeed at insulating their domestic markets from short-term fluctuations in global food prices, their combined policies may make global food prices more volatile. Government interventions tend to increase consumption and reduce production during price spikes and support production and discourage consumption during price plunges. During price spikes, this results in higher import demand and, hence, higher global demand that further drives up global prices. During price plunges, it encourages greater exports from each country and, hence, greater global supply that further depresses prices. Only countries that insulate themselves to an above-average degree are able to reduce the transmission of international price volatility to their domestic markets (Anderson, Martin and Ivanić 2017; Martin and Anderson 2012; Ivanić and Martin 2014b).18

**Poverty impact of the 2010-11 food price shock**

The impact of the 2010-2011 food price shock on poverty is quantified in two steps. The first step estimates the degree of policy intervention by countries (Anderson, Ivanić, and Martin 2014). In the second step, these estimates are fed into a dynamic computable general equilibrium (CGE) model in combination with household models for 285,000 households from 31 countries to determine the impact of policy interventions on poverty (Annex 1; Laborde, Robichaud and Tokgoz 2013). Two scenarios are compared. In the first scenario, the impact of countries’ own interventions on poverty is considered. In the second scenario, the combined effect of all policy interventions on global food markets and their feedback to domestic poverty is quantified.

**Impact of policy interventions on global and domestic prices**

**Quantifying policy interventions.** A primary shock, such as a weather shock, is assumed to generate initial production shortfalls that are calibrated to match the observed changes in protection rates and world prices shown in Figure 4.2.6.19 In attempting to insulate domestic markets from the increase in world prices, governments take offsetting trade measures, such as the introduction of export bans (food exporters) or the reduction of import duties (food importers). These policy responses are calibrated to match the observed protection rates and world price increases in 2010-11. As the model distinguishes between domestic and imported goods, two potential policy instruments are considered—an import duty (or subsidy) and an

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18 Consistent with Martin and Anderson (2012) and Anderson, Ivanić, and Martin (2014).
19 For example, a negative production shock of 55 percent for rice, 27 percent for wheat, and 35 percent for maize in advanced economies and Russia generates an increase of 10 percent in average world prices for these commodities.
FIGURE 4.2.6 The extent of government interventions during the 2010-11 food price spike

Some countries reduced trade barriers to insulate themselves from increasing world prices. Others resorted to policy interventions that ultimately raised domestic prices more than the increase in world prices.

A. Change in protection rates, 2010-11
B. Change in protection rates, 2010-11
C. Change in EMDE protection rates, 2010-11
D. Change in LIC protection rates, 2010-11

Source: Ag-Incentives Database.
Notes: Estimates based on the methodology described in Annex 4.2.1. Changes in the rates of protection are presented in the form: \( T_t = \Delta T_t + (1 + \Delta T_t) \), where \( T_t \) is the initial rate of protection (positive if an import tariff or export subsidy) and \( \Delta T_t \) is the change in this rate of protection. If the change in the rate of protection is negative during a period of rising world prices, countries are seeking to insulate their markets from the increase in prices. If it is positive, policymakers are compounding the increase in world prices with an increase in protection, which may be due to the correction of past “errors”: if domestic prices fall below policymakers’ desired long-run level of protection, or if a policy that insulated the domestic market from world markets and a subsequent exogenous shock—such as a harvest shortfall—has caused the domestic price to rise relative to the world price.

D.C. Median and interquartile range in the change for protection rates for rice, wheat, and maize in EMDEs (C) and LICs (D).

Impact of policy interventions on global prices. During the food price spike of 2010-11, world prices of maize, wheat and rice rose by 44, 39, and 6 percent, respectively, but domestic prices considerably less (Figure 4.2.4). Model results suggest that the combined action of government policies amplified global wheat and maize price increases, accounting for about 40 percent of the increase in world price of wheat and one-quarters of the increase in the price of maize. In contrast, combined policy action reduced the rice price surge compared to a non-action scenario.22

Wheat. Most EMDEs took measures to offset the increase in global wheat prices in 2010-11, broadly similar to those employed during the spike in wheat prices in 2007-08. Policymakers justified efforts to dampen the impact of the global wheat price spike by noting that the world wheat price spike partly reflected a catching up with rising domestic wheat prices.23 The combined intervention of countries accounted for close to 50 percent of the increase in the world price of wheat.

Maize. Although most countries insulated their domestic maize markets against maize price increase during 2010-11, there was considerable

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20 Many countries typically put in place flanking policies. In 2007-08, for example, Indonesia subsidized imports of wheat and rice, respectively, to hold down domestic consumer prices. To avoid subsidizing exports of the same goods, export restrictions were also introduced. Because rice, wheat, and maize are bulk commodities that are less strongly differentiated than manufactured products, two-way trade in these goods is unusual—except when there are regional differences in varieties (for example, Indian exports of Basmati rice and imports of Jasmine rice). Models of differentiated products are needed to adequately capture actual bilateral trade flows in these commodities (Thursby, Johnson, and Grennes 1986).

21 The data is available at www.ag-incentives.org.

22 This primarily reflects the elimination of export restrictions in India and the increased import protection in Pakistan, Indonesia, Uganda, and Yemen.

23 Ethiopia is an exception, where domestic wheat prices rose 28 percentage points more than world prices during 2010-11. This reflected domestic supply shocks, combined with limited access to global wheat markets to alleviate shortages. In particular, wheat output fell by 10 percent in 2010-11 as a result of a fungus that destroyed the wheat harvest and lowered stocks in 2011. Wheat imports rose but were constrained by tight foreign exchange controls, effectively stopping private sector imports and ensuring that all grain imports are channeled through the state-owned Ethiopian Grain Trade Enterprise (Wakeyo and Lanos 2014; Negassa and Jayne 1997).
heterogeneity in policy responses. In Bangladesh, Ecuador, Malawi, Tanzania, and Zambia, protection rates fell, fully offsetting the rise in global maize prices. Ethiopia, Uganda, and Yemen increased protection rates or used policies that, in combination with domestic output shocks, amplified the increase in domestic prices.

Rice. Some countries (e.g., Bangladesh, Nepal, Panama, Tanzania, and Zambia) reduced trade barriers to partially offset the rise in world rice prices. However, important net rice exporters such as India, Pakistan, and Yemen implemented policy interventions that, ultimately, raised domestic rice prices more than the increase in world prices. In India, the world’s second-largest rice producer, quantitative restrictions imposed in 2007 initially prevented domestic price increases. However, the subsequent abolition of export quotas in September 2011 resulted in a surge in exports and a rise in domestic prices. In Pakistan, heavy summer flooding that affected one-fifth of the country’s land area and inflicted extensive damage to crops raised domestic rice prices relative to the world price over the same period. A large increase in domestic prices relative to external prices occurred, in Yemen, amid persistent water shortages and a shift to less water-intensive non-staple crops and, in Ethiopia and Uganda, amid drought. The combined intervention of all countries dampened the increase in the world price of rice by about 50 percent compared to a scenario without insulation policies.

Impact of policy intervention on poverty

Poverty impact of hypothetical food price spikes without policy intervention. Without government intervention, a hypothetical 10 percent surge in rice, wheat, and maize prices raises the number of extreme poor living on less than $1.90 per day by 0.22 percent or 2.1 million. Among staple foods, an increase in wheat prices raises the number of poor most (by 0.01 percentage points for a 10 percent wheat price increase). Rice price increases cause particularly large increases in the number of poor in Sub-Saharan Africa (0.13 percentage points). Finally, maize price increases tend to have a lesser impact on the number of poor.

Poverty impact of 2010-11 food price spike with policy intervention. When incorporating the effects of government intervention to reduce the pass-through of rising global to domestic prices, model results suggest that the food price spikes of 2010-11 still raised poverty in most countries (Figure 4.2.7). On average, the share of extreme poor living at less than $1.90 per day increased by 0.12 percentage point from 13.7 percent. This is equivalent to an additional 8.3 million, or a 1 percent increase in the number of extreme poor.

Heterogeneity in poverty impact. The increase in world food prices, combined with government intervention, was most strongly felt in countries such as India and Uganda, where the extreme poor tend to be net food-buyers whose real incomes
declined.\textsuperscript{24} The poverty impact of the 2010-11 food price spike on some regions such as East Asia and the Pacific (EAP), and Latin America and the Caribbean (LAC) is estimated to have been limited: low rates of poverty combined with the benefits of the price increase for countries that are heavy exporters of rice (EAP) or maize (LAC) offset some of the losses incurred due to the increase in prices. Even in Sub-Saharan Africa—the region that accounts for two-thirds of the global increase in poverty—countries like Ethiopia and Nigeria implemented insulation policies that reduced poverty.

**Comparison with 2007-08 food price shock.** These poverty impacts are less than those induced by the 2007-08 food price shock. The 2007-08 food price shocks may have increased extreme poverty by 105 million (Ivanic and Martin 2008). Government policies reduced poverty impacts and their combined effect was close to zero (Anderson, Ivanic, and Martin 2014). The difference in poverty impacts reflects the greater severity of the 2007-08 price shocks, the stronger transmission of price changes from world to domestic markets and higher initial poverty rates (the poverty headcount in India, for instance, fell from 31 percent in 2009 to 21 percent in 2011).\textsuperscript{25} While the 2007-08 event was led by rice prices, exacerbated by export restrictions imposed by major rice producers, the 2010-11 food price surge was led by maize and wheat prices, triggered by adverse weather events in major wheat and maize producers in Australia and the Black Sea Basin. During 2007-08, large rice consumers, such as India, imposed export restrictions to contain domestic rice price increases. These were gradually unwound over the following years. In 2010-11, some large wheat and maize producers, such as Russia and Ukraine, introduced export restrictions and import bans to contain domestic price pressures.

**Conclusions**

During the 2010-11 food price shock, coming in short succession after 2007-08 food price shock, many countries used trade policies to insulate domestic food prices from the surge in world prices. While each country’s policies can dampen domestic price movements, the result of the combined use of policies increases global food price volatility. For example, widespread insulation policies accounted for 40 percent of the increase in world wheat prices and one-quarter for world maize prices. As a result of this coincidence of individual government policy responses, the 2010-11 food price spike raised global poverty by almost 1 percent (8.3 million).

These findings highlight that the use of trade policy interventions to insulate domestic markets from food price shocks compounds the volatility of international prices and may not be effective in protecting the most vulnerable populations groups. Instead, targeted safety net interventions such as cash transfers, food and in-kind transfers, school feeding and public works programs can mitigate the negative impact of food price shocks on poor households. Measures such as crop and weather insurance, warehouse receipt systems, commodity exchanges and futures markets could also be used as risk management instruments. Additional policy interventions such as targeted nutrition and health programs can contribute to improving health outcomes in the medium term, while regulatory interventions (taxing unhealthy food) can improve health outcomes in the long term.

More generally, in addition to targeted interventions it is important to ensure that countries have detailed strategic framework for food crisis response in place and that these programs are sufficiently resourced with administratrive budgets. International financial institutions (IFIs) can assist countries to better target the most vulnerable to a food price crisis. IFIs can also assist countries to identify

\textsuperscript{24} Results reported here do not take into account the impact of safety-net programs such as India's Public Distribution System, which distributes food to poor households at fixed prices and so automatically makes larger transfer to the poor when food prices rise.

\textsuperscript{25} World Bank (2012) estimate that the 2010-11 food price spike increased the number of poor by 50 million in the short run, and by 34 million in the long-run. These higher estimates do not explicitly account for insulation policies and consider price increases of a wider range of food commodities (also beef, chicken, dairy, vegetable oils and soybean prices). In addition, there is uncertainty around poverty estimates due to systematic measurement errors in household surveys that may bias the poor’s dependence on food purchases (Headey and Martin 2016). Finally, Jacoby (2016) and Jacoby and Dasgupta (2018) highlight the importance of accounting for the endogenous agricultural wage response and spillover effects to non-agricultural wages.
practical mechanisms (including indicators) for monitoring nutritional and welfare outcomes and impacts of food crises and mitigation programs, and work with them to implement those mechanisms and to report the results. The private sector can also play a crucial role in enhancing investments in food supply in the short- and medium-term (World Bank 2013). Better collaboration among public and private stakeholders can also help strengthen risk management and provide effective responses to reduce the impacts of extreme weather on agriculture (G20 2018).

Annex 4.2.1: Methodology

Error Correction Model

The analytical framework used to represent the imperfect transmission of changes in international prices into domestic markets relies on an Error Correction Model (ECM) as described in Ivanic and Martin (2014a). As noted by Nickell (1985), this model represents a situation in which policymakers seek to reduce both the costs of change, and the costs of being out of equilibrium. A simplified version model used by Ivanic and Martin (2014a), expressed in logs, is:

$$\Delta t = \alpha (p_w - p_{w,t-1}) + \beta [p_{t-1} - \gamma p_{w,t-1}],$$

where $p$ represents domestic prices; $p_w$ world prices; $\tau$ the rate of protection, approximated by $(p-p^w)$; $\alpha, \alpha < 0$, the coefficient of price insulation ranging from 0 for countries that do no insulate against the rise in world prices, to -1 for countries that adopt policies that fully insulate domestic markets;

$\beta, \beta < 0$, the cost of being out of equilibrium or the speed with which policies achieve the target level of protection or at which policymakers move back toward this equilibrium after being forced away from it by a shock to world prices; $\gamma$ determines the long run relationship between a country’s protection and the global level of agricultural protection; and $[p_{t-1} - \gamma p_{w,t-1}]$ is the deviation from the political-economy equilibrium. It depends on factors like income levels, exportable/importable status, the elasticity of import demand, and the share of real incomes gains from higher protection that will accrue to politically-organized producers (Anderson 1995; Grossman and Helpman 1994).

The database on Distortions to Agricultural Incentives (Anderson and Valenzuela 2008; Anderson and Nelgen 2013) is the main data source for estimating the ECM model. It includes estimates of domestic and world price levels which also determine the level of protection. The price data used in the model capture both natural shocks (oil prices, weather events) as well as the impact of trade policy interventions the separate impact of which is not possible to disentangle. The model is estimated for eight food commodities with data for 82 countries, of which 26 are advanced economies, 44 EMDEs, and 12 LICs.

Measuring the extent of trade policy interventions

The approach to quantify the extent of trade policy interventions builds on that used in Anderson, Ivanic, and Martin (2014). It is assumed that a primary shock, such as weather shock, generates an initial change in domestic and world prices. In attempting to insulate consumers and producers from price increases, governments make offsetting changes in protection measures, such as the introduction of export bans or reduction in import duties. These measures, in turn, reinforce the original shock to world prices. When a country imposes an export restriction, the availability of food to the rest of the world is reduced, and this tends to push up world price. Similarly, when an importing country reduces its import tariffs, it increases the demand for imports and hence puts upward pressure on the world price.

The impact of the changes in trade policies can be distinguished from those of the primary shocks by in the following equation:

$$\Sigma S_i (p_i) + v_i = \Sigma D_i (p_i),$$

where $S_i$ is supply in region $i$; $D_i$ is demand in region $i$; $p_i = p^* (1 + t_i)$ is the domestic price; $p^*$ is the world price; $t_i$ is a country-specific trade barrier, such as a proportional tariff; and $v_i$ is a random production shift variable for region $i$. Totally differentiating the equation above, rearranging, and expressing the results in
percentage changes yields an expression of the impact of a set of changes in trade distortions on the world price:

\[ \hat{p}^* = \frac{\sum_i (G_i \hat{\eta}_i - H_i \gamma_i)}{\sum_i H_i \hat{v}_i + \sum_i (H_i \gamma_i - G_i \eta_i) \hat{T}_i} \]

where \( \hat{p}^* \) is the proportional change in the international price; \( \hat{v}_i \) is an exogenous output shock such as might result from good or bad seasonal conditions; \( \eta_i \) is the elasticity of demand in market \( i \); \( \gamma_i \) is the elasticity of supply in market \( i \); \( G_i \) is the share at world prices of country \( i \) in global production; \( H_i \) is the share of country \( i \) in global production, and \( \hat{T}_i = (1 + t_i) \).

In other words, the impact on the world price of a change in trade policies in country is given as a weighted average of the changes in trade distortions in different markets, with the weight on region \( i \) depending on the importance of that country in global supply and demand, as well as the responsiveness of its production and consumption to price changes in the country, as represented by \( \gamma_i \) and \( \eta_i \).

It is thus assumed that elasticities of demand are equal between countries, i.e., that imported and domestic goods are perfect substitutes, and that there are no supply responses. Alternatively, one could allow for differentiation between imported and domestic products, as well as a limited supply response (Jensen and Anderson 2017). The result would be an expression with weights that depend on, for instance, the shares of imports in consumption in each market. However, the overall result is similar in expressing the change in world prices as a weighted sum of changes in trade distortions.

To avoid having to deal with difficult-to-interpret interaction terms, all proportional changes are converted into log changes in \( T_i, p_i/s \), and \( p \) as:

\[ \hat{p}_i = \hat{p} + \hat{T}_i \]

Changes in relative prices are measured as in the Agricultural Incentives database and capture a wide range of policy measures used to assess agricultural trade distortions—including tariffs, export subsidies, export taxes, export bans and import subsidies.

If products are homogeneous, and a country is small, the change in \( \Delta \hat{p} \) represents the change in the domestic price of the good. Additionally, if \( \hat{T}_i \) is negative in a period of rising world prices, countries are seeking to insulate their markets from the increase in prices. If it is positive, policymakers are compounding the increase in world prices with an increase in protection. This may be due to the correction of past “errors”. This might occur if domestic prices fall below policymakers’ desired long-run level, or if policy insulated the domestic market from world markets and an exogenous shock—such as a harvest shortfall—has caused the domestic price to rise relative to the world price. Such insulation patterns have been observed in the maize markets in many African countries (Chapoto and Jayne 2009).

The MIRAGRODEP model

The analytical framework to measure the poverty implications of the 2010-11 food price spike relies on the MIRAGRODEP model (Laborde, Robichaud, and Tokgoz 2013) complemented with household surveys for more than 31 countries and 285,000 representative households.

MIRAGRODEP is a dynamic, multi-country, and multi-sector computable general equilibrium (CGE) model. The model relies on GTAP 9, a global database for 2011. The GTAP database includes input-output tables linked by bilateral trade flows for 140 regions (countries or country aggregates) and 57 sectors. For the purposes of the simulations these countries and sectors were aggregated into 31 countries/regions and 15 sectors among which rice, wheat, and maize are represented separately.

On the supply side, the production function is a Leontief function of value-added and intermediate inputs. The intermediate inputs are represented by a nested, two-level constant elasticity of substitution (CES) function of all goods. Based on this, substitutability exists between intermediate goods, but these are more substitutable when they are in the same category (such as agricultural inputs or service inputs). Value-added is also represented by a nested structure of CES functions of unskilled labor, land, natural resources, skilled labor, and capital. This nesting allows the modeler...
to incorporate some intermediate goods that are substitutes of factors, such as energy or fertilizers.

On the demand side, a representative consumer is assumed to have a constant propensity to save. The remaining national income is used for the purchase of final consumption goods. Consumers’ preferences are represented by a linear expenditure system–constant elasticity of substitution (LES–CES) function, calibrated based on the U.S. Department of Agriculture Economic Research Service (ERS/USDA) income and price elasticities to best reflect non-homothetic demand patterns with changes in revenue. Given an increase in the price of staple foods such as rice, wheat or maize, consumers substitute away to consume other food products. Armington elasticities, which measure the elasticity of substitution between products of different countries, are drawn from the GTAP database and are assumed to be the same across regions.

Factor endowments are assumed to be fully employed. The supply of capital goods is modified each year because of depreciation and investment. New capital is allocated among sectors according to an investment function. Growth rates of labor supply are fixed exogenously. Land supply is endogenous and depends on the real remuneration of land. Skilled labor is the only factor that is perfectly mobile; unskilled labor is imperfectly mobile between agricultural and nonagricultural sectors according to a constant elasticity of transformation (CET) function. Unskilled labor’s remuneration in agricultural activities is different from that of nonagricultural activities. The only factor whose supply is constant is the natural resources factor. It is, however, possible to endogenously change the factor endowment in the baseline in order to reflect long-term depletion of resources with respect to a price trajectory.

The poverty impact is captured through a top-down approach using a dataset of household surveys for more than 31 countries and 285,000 representative households. The impact of a policy shock on poverty depends on price changes, the relative reliance of households on the consumption of individual staple foods and the net food buying status of households in different segments of the distribution (Deaton 1989).

Beyond the standard features of a global dynamic CGE model, the MIRAGRODEP model includes several improvements: sub-national land markets (agro-ecological zones or administrative districts) and endogenous land supply; poverty analysis through either a top-down approach for global coverage or a bottom-up approach (for a subset of countries); dual-dual approach for formal/informal and rural/urban labor markets (Stifel and Thorbecke 2003); a consistent aggregator for trade policies (Laborde, Martin, and van der Mensbrugghe 2017); differentiated datasets on actual trade and farm policies and existing policy space for scenario design and endogenous policy responses; macro nutrient (calories, fats, proteins) accounting system based on FAOSTAT food balance sheets and a global Input-Output matrix; and sensitivity analysis framework based on Monte-Carlo simulations.

While the elasticities of substitution for rice, wheat, and maize used in this model, are higher than for manufactured goods, they are not infinite as assumed using the perfect substitutes model (Thursby, Johnson, and Grennes 1986). This specification has important implications for both the economy-wide analysis and at the household level. Given these assumptions, an increase in the price of an imported good has a muted impact on the domestic consumer price of that good. Since, with the Armington assumption—imported goods differentiated based on their country of origin—the composite price of the consumer good is weighted by the shares of domestic and imported goods, the impact of a unit change in the world price, or in trade policy, is given by the share of imports in total consumption. Because the share of imports in total consumption of staple foods is typically small, the impact of trade policy on consumer prices is much more muted than under the assumption of perfect substitution used in Anderson, Ivanic, and Martin (2014). On the production side, the assumption that each country’s export product is the same as the products sold domestically means that changes in export trade policies will have a more direct impact on producer prices if the country is an exporter and not too large in the markets it supplies.
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Real GDP growth
Annual estimates and forecasts1
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Emerging market and developing economies
East Asia and Pacific

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Quarterly growth2

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Europe and Central Asia


### Real GDP growth (continued)

#### Annual estimates and forecasts\(^1\)

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**Notes:**
- \(^1\) Annual estimates and forecasts.
- \(^2\) Quarterly growth.
- \(^3\) Excluding China.
- \(^4\) Including China.
- \(^5\) Including China.
- \(^6\) Excluding China.
- \(^7\) Including China.
Real GDP growth (continued)

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### Real GDP growth (continued)

#### Annual estimates and forecasts

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Sources: World Bank and Haver Analytics.

Notes: e = estimate; f = forecast.
2. Year-over-year quarterly growth of not-seasonally-adjusted real GDP, except for Ecuador, the Euro Area and the United Kingdom. Data for Bosnia and Herzegovina are from the production approach.
Regional averages are calculated based on data from following countries.
East Asia and Pacific: China, Indonesia, Malaysia, Mongolia, Philippines, Thailand, and Vietnam.
Europe and Central Asia: Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Georgia, Hungary, Kazakhstan, FYR Macedonia, Poland, Romania, Russia, Serbia, Turkey, and Ukraine.
Latin America and the Caribbean: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Jamaica, Mexico, Nicaragua, Paraguay, Peru, and Uruguay.
Middle East and North Africa: Bahrain, Egypt, Iran, Jordan, Kuwait, Qatar, Saudi Arabia, and Tunisia.
South Asia: India and Sri Lanka.
3. Annual GDP is on fiscal year basis, as per reporting practice in the country.
4. GDP data for Pakistan are based on factor cost. For Bangladesh, Bhutan, Nepal, and Pakistan, the column labeled 2017 refers to FY2016/17. For India, the column labeled 2016 refers to FY2016/17.
For additional information, please see www.worldbank.org/gep.
Data and Forecast Conventions

The macroeconomic forecasts presented in this report are prepared by staff of the Prospects Group of the Development Economics Vice-Presidency, in coordination with staff from the Macroeconomics, Trade, and Investment Global Practice and from regional and country offices, and with input from regional Chief Economist offices. They are the result of an iterative process that incorporates data, macroeconometric models, and judgment.

Data. Data used to prepare country forecasts come from a variety of sources. National Income Accounts (NIA), Balance of Payments (BOP), and fiscal data are from Haver Analytics; the World Development Indicators by the World Bank; the World Economic Outlook, Balance of Payments Statistics, and International Financial Statistics by the International Monetary Fund. Population data and forecasts are from the United Nations World Population Prospects. Country- and lending-group classifications are from the World Bank. DECPG databases include commodity prices, data on previous forecast vintages, and in-house country classifications. Other internal databases include high-frequency indicators such as industrial production, consumer price indexes, house prices, exchange rates, exports, imports, and stock market indexes, based on data from Bloomberg, Haver Analytics, OECD Analytical House Prices Indicators, IMF Balance of Payments Statistics, and IMF International Financial Statistics.

Aggregations.Aggregate growth for the world and all sub-groups of countries (such as regions and income groups) is calculated as GDP-weighted average (at 2010 prices) of country-specific growth rates. Income groups are defined as in the World Bank’s classification of country groups.

Forecast Process. The process starts with initial assumptions about advanced-economy growth and commodity price forecasts. These are used as conditioning assumptions for the first set of growth forecasts for EMDEs, which are produced using macroeconometric models, accounting frameworks to ensure national account identities and global consistency, estimates of spillovers from major economies, and high-frequency indicators. These forecasts are then evaluated to ensure consistency of treatment across similar EMDEs. This is followed by extensive discussions with World Bank country teams, who conduct continuous macroeconomic monitoring and dialogue with country authorities. Throughout the forecasting process, staff use macroeconometric models that allow the combination of judgement and consistency with model-based insights.
### Global Economic Prospects: Selected Topics, 2015-19

#### Growth and Business Cycles

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### Growth and Business Cycles (continued)

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**Regional informality**

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### Other topics

**Growing in the shadow: Challenges of informality**

| Topic                                                | Issue Date       |
|                                                     | January 2019, Chapter 3 |

**Long-term growth prospects: Downgraded no more?**

| Topic                                                | Issue Date       |
|                                                     | June 2018, Box 1.1 |

**Education demographics and global inequality**

| Topic                                                | Issue Date       |
|                                                     | January 2018, SF 2 |

**Weak investment in uncertain times: Causes, implications and policy responses**

| Topic                                                | Issue Date       |
|                                                     | January 2017, Chapter 3 |

**Implications of rising uncertainty for investment in EMDEs**

| Topic                                                | Issue Date       |
|                                                     | January 2017, Box 3.2 |

**Implications of the investment slowdown in China**

| Topic                                                | Issue Date       |
|                                                     | January 2017, Box 3.3 |

**Interactions between public and private investment**

| Topic                                                | Issue Date       |
|                                                     | January 2017, Box 3.4 |

**Quantifying uncertainties in global growth forecasts**

| Topic                                                | Issue Date       |
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**Who catches a cold when emerging markets sneeze?**

| Topic                                                | Issue Date       |
|                                                     | January 2016, Chapter 3 |

**Sources of the growth slowdown in BRICS**

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**Understanding cross-border growth spillovers**

| Topic                                                | Issue Date       |
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**Within-region spillovers**

| Topic                                                | Issue Date       |
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**Recent developments in emerging and developing country labor markets**

| Topic                                                | Issue Date       |
|                                                     | June 2015, Box 1.3 |

**Linkages between China and Sub-Saharan Africa**

| Topic                                                | Issue Date       |
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**What does weak growth mean for poverty in the future?**

| Topic                                                | Issue Date       |
|                                                     | January 2015, Box 1.1 |

**What does a slowdown in China mean for Latin America and the Caribbean?**

| Topic                                                | Issue Date       |
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**The role of the EM7 in commodity production**

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**Commodity consumption: Implications of government policies**

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**With the benefit of hindsight: The impact of the 2014–16 oil price collapse**

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**From commodity discovery to production: Vulnerabilities and policies in LICs**

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**After the commodities boom: What next for low-income countries?**

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**Low oil prices in perspective**

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**Understanding the plunge in oil prices: Sources and implications**

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**What do we know about the impact of oil prices on output and inflation? A brief survey**

| Topic                                                | Issue Date       |
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## Monetary and Exchange Rate Policies

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More information about the Bank’s environmental philosophy can be found at http://www.worldbank.org/corporateresponsibility.
Global economic prospects have darkened. Financing conditions have tightened, industrial production has moderated, and trade tensions remain elevated. The recovery in emerging market and developing economies has stalled, and some countries have experienced significant financial stress. Downside risks have increased, including the possibility of disorderly financial market movements and escalating trade disputes. It is thus critical to rebuild policy buffers while fostering potential growth by boosting human capital, promoting trade integration, and addressing informality.

In addition to discussing global and regional economic developments and prospects, this edition of *Global Economic Prospects* includes a chapter on the challenges posed by informality and associated policy options. The report also contains pieces on the remarkable decline in EMDE inflation over the past decades, rising debt vulnerabilities in low-income countries, and the implications of large spikes in food prices for poverty.

*Global Economic Prospects* is a World Bank Group Flagship Report that examines global economic developments and prospects, with a special focus on emerging market and developing countries, on a semiannual basis (in January and June). The January edition includes in-depth analyses of topical policy challenges faced by these economies, while the June edition contains shorter analytical pieces.