Unprecedented monetary policy accommodation in advanced economies and a large, coordinated fiscal stimulus by G20 countries helped to support a solid rebound in global output in 2010. However, global growth subsequently slowed to a sluggish pace by pre-recession standards, and many EMDEs have been struggling to unwind their fiscal stimulus and contain a buildup of debt. The experience of the global recession of 2009 highlights the need for well-timed, appropriately calibrated domestic stabilization policies, but also the benefits of international cooperation and coordination in support of strong and sustained global growth and financial system stability. Sound policy frameworks can help create room for stabilization policies, such as fiscal rules to safeguard fiscal sustainability or macroprudential policies and capital flow management measures to better manage systemic risks.

Introduction

In 2009, the global economy experienced the deepest recession since the Great Depression of the 1930s. Yet, global growth rebounded within a year, reflecting in part the use of macroeconomic stabilization policies in many advanced economies, as well as in emerging market and developing economies (EMDEs). For the first time during a major global crisis, EMDEs actively employed a wide range of countercyclical monetary and fiscal policies to stem contagion and boost post-crisis recovery. Many EMDEs lowered policy interest rates, intervened heavily in foreign exchange markets to maintain exchange rate stability, and implemented fiscal stimulus packages.

Robust growth prior to the 2009 global recession had allowed EMDEs to improve their fiscal and external positions, and to strengthen their macroeconomic policy frameworks. Policy space had widened in several dimensions. Lower inflation created room for expansionary monetary policies. Fiscal balances had improved, from a deficit of 0.8 percent of GDP in 2002, on average, to a surplus of 2.4 percent in 2007. EMDEs had strengthened external buffers, too, as their foreign exchange reserves had increased substantially—70 percent of EMDEs increased their international reserves by more than 10 percentage points of external debt, while one-quarter of EMDEs increased them by more than 50 percentage points.\(^1\)

However, since the global recession, EMDEs have mostly depleted their policy buffers. This is partly due to sluggish global growth and low commodity prices. EMDEs, as a

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1 Some suggested that global current account imbalances are a key factor contributing to the financial crisis (e.g., Bernanke 2009; Portes 2009). They argued that excessive saving in EMDEs, reflected in current-account surpluses (termed as “global saving glut”), put downward pressure on world interest rates and fueled a credit boom and risk-taking in major advanced economies, particularly in the United States, sowing the seeds of the global financial crisis.
group, have not yet fully unwound their fiscal and monetary stimulus, and they face elevated fiscal and current account deficits, and growing debt. As a consequence, many EMDEs are now less resilient to adverse shocks than they were in 2007.

The global recession highlighted several shortcomings in the financial sector policies of EMDEs. For example, pre-crisis financial regulation and supervision tended to focus on microprudential policies, aimed at the stability of individual financial institutions, rather than on the stability of the financial system as a whole. Furthermore, the risk-weighted capital requirements of Basel II have tended to be procyclical, since requirements decline as risk ratings of bank loans improve, whereas during a contraction requirements tend to rise (Admati and Hellwig 2014; Gordy and Howells 2006).

Since the global recession, financial sector policies have undergone a major transformation. They now aim more explicitly at mitigating system-wide risks in order to safeguard financial stability. Prudential supervision shifted towards a more macroprudential focus, targeting the stability of the financial system as a whole. Restrictions on capital flows, a controversial policy measure before the global recession, have since been viewed more favorably from a macroprudential perspective.

Against this backdrop, this chapter examines the following questions:

- What macroeconomic and financial sector policies characterized EMDEs prior to the global recession?
- How have EMDE macroeconomic and financial sector policies evolved since the global recession?

**Contribution to the literature.** Chapter 5 constitutes the first extensive stocktaking of the evolution of macroeconomic policies used by EMDEs before, during, and after the global recession. Previous studies focused on subsets of policies, such as monetary policies or fiscal policies (Cukierman 2013; de Haan et al. 2018; Ramsey 2019); policies during or shortly after the global recession (Akerlof et al. 2014; Blanchard et al. 2016; Taylor 2014); or macro-financial linkages that propagated the financial crisis (Blanchard, Faruqee, and Das 2010; Claessens and Kose 2018). Most of these existing studies do not distill policy lessons specifically for EMDEs. The chapter also provides a detailed overview of financial sector policies in EMDEs whereas the previous literature on such policies focuses on advanced economies (IMF 2018a). The chapter distills lessons from the global recession that are relevant to EMDE policymakers today.

**Main findings.** This chapter reports the following findings. First, during the global recession, unprecedented coordinated monetary stimulus (in advanced economies) and fiscal stimulus (in advanced economies and EMDEs) supported a rapid rebound in global growth. Three-fifths of EMDEs with floating exchange rates had lowered their policy interest rates by the first quarter of 2009. EMDEs also made use of other measures to encourage bank lending such as reducing reserve requirements; accepting a broader range of collateral as lender of last resort; injecting liquidity into, and recapitalizing, domestic banks; and channeling government-supported lending through development banks. In addition, the fiscal policy response was unprecedented, with large spending packages implemented by G20 economies.
Second, since the global recession, monetary policy has remained accommodative and fiscal stimulus has not been fully unwound in many EMDEs. By 2018, fiscal balances had returned to 2007 levels in only one-quarter of EMDEs and real interest rates had returned to 2007 levels in only one-half of them. Most of the EMDEs that have unwound their crisis-related fiscal stimulus were commodity importers. Many commodity-exporting EMDEs implemented pro-cyclical policy tightening in response to the steep commodity price decline of 2011-16. Rising external, corporate, household, and government debt stocks, combined with wider fiscal and current account deficits, have increased the vulnerabilities of EMDEs to shocks.

Third, since the global recession, all advanced economies and about 70 percent of EMDEs have strengthened their macroprudential policy frameworks and the resilience of their financial systems. Several new instruments have been implemented under the Basel III framework to reduce systemic risk. EMDEs have been more aggressive than advanced economies in their use of macroprudential tools like foreign exchange and liquidity policies (for instance, limits on foreign currency loans and foreign exchange countercyclical reserve requirements) to mitigate their exposure to volatile capital inflows.

Fourth, the use of capital flow management measures as a tool to promote financial stability in appropriate circumstances has gained greater acceptance. During the global recession, many EMDEs strengthened existing capital flow management measures while others introduced new ones. Measures such as reserve requirements on foreign investment, taxes on currency outflows, taxes on interest and capital gains earned by nonresidents, minimum term requirements for holdings of central bank securities, and limits on foreign currency positions have often been used by EMDEs over the past decade.

Fifth, the global recession offers important lessons for policy priorities. Fiscal and monetary policy can be effective stabilization tools if they are implemented swiftly and, especially, if they are coordinated in response to global shocks. However, policy stimulus can have the unintended consequence of sowing the seeds for the next crisis if the stimulus is not unwound in a timely manner and if financial sector supervision and regulation are inadequate.

The rest of the chapter is structured as follows. First, the chapter describes the macroeconomic policies used by EMDEs before, during, and after the global recession. Second, it focuses on financial sector policies, including the emerging interest in complementing microprudential policies with macroprudential policies, and the renewed interest in capital flow management policies. Finally, it concludes and distills policy lessons.

**Macroeconomic policies**

**Before the global recession: Growing policy space in EMDEs**

Strong growth during 2002-07 widened policy space in many EMDEs. Lower inflation created room for monetary policy to ease substantially without undermining the
credibility of central bank commitments to inflation control. Budget deficits narrowed and government debt declined, which provided governments the space to raise spending or cut taxes. Improved current account balances and rising international reserves strengthened the buffers against external shocks and boosted the confidence of investors.

**Monetary buffers.** Inflation remained in single digits in 82 percent of EMDEs during 2002-07, compared to only 35 percent in the preceding decade (Box 5.1). Even in LAC, which had been plagued by persistently high inflation during the 1980s and 1990s, inflation was brought down to an average of 4.6 percent in 2002-07. In a notable case, Brazil’s inflation rate in 2007 had fallen to 3.6 percent, compared to an average of more than 1000 percent in the early 1990s. This broad-based disinflation reflected the strengthening by many EMDEs of their macroeconomic policy frameworks, including granting greater independence to their central banks over the conduct of monetary policy, and moving towards more flexible exchange rate regimes (Ha, Kose, and Ohnsorge 2019; Box 5.1).

**Fiscal buffers.** The fiscal position of many EMDEs improved as robust growth buoyed government revenues and lightened real debt burdens. Fiscal balances in EMDEs improved on average from a deficit of 0.8 percent of GDP in 2002 to a surplus of 2.4 percent in 2007. Government debt declined sharply from 76 percent of GDP in 2002 to 45 percent in 2007. The improvements were most pronounced in commodity exporters, which benefitted from the commodity price boom of the mid-2000s.

**External buffers.** Export-driven growth generated smaller current account deficits in EMDEs (up from 3.5 percent of GDP in 2001 to 1.2 percent in 2007), allowing a considerable accumulation of foreign exchange reserves (Goldstein and Xie 2009; Ocampo 2009). In about 70 percent of EMDEs, reserves increased by more than 10 percentage points of external debt between 2002 and 2007 and, in one-quarter of EMDEs, they increased by more than 50 percentage points of external debt. The reserve buildup was most pronounced in EAP, where reserves increased to 250 percent of external debt in 2007 (Figure 5.1). China, with reserves of more than 4 times external debt in 2007, accounted for most of this increase. Among other major EMDEs, Brazil accumulated foreign reserves equivalent to 75 percent of external debt. The increases in current account surpluses and accumulation of international reserves were partly a reflection of exchange rate policies, as several countries intervened in foreign exchange markets to contain appreciation of their currencies, which both increased their reserves and helped maintain or improve their international competitiveness.

**During the global recession: Stimulus**

Unprecedented coordination of monetary and fiscal stimulus, in the largest advanced economies and EMDEs alike, supported a strong rebound of global output in 2010. EMDE central banks, having accumulated large foreign reserves and tamed inflation before the crisis, were able to intervene heavily in foreign exchange markets in support of their currencies and lower policy interest rates. In addition, EMDE governments announced fiscal packages that included infrastructure investment, tax cuts, and social protection programs.
A D E C A D E  A F T E R  T H E  G L O B A L  R E C E S S I O N

CH A P T E R  5

Monetary stimulus in advanced economies. In response to slowing output growth and escalating threats to financial stability, six major central banks—the U.S. Federal Reserve, the Bank of Canada, the Bank of England, the European Central Bank, the Sveriges Riksbank, and the Swiss National Bank—announced policy rate cuts simultaneously in October 2008 (Figure 5.1). This was the first-ever coordinated monetary policy response to a financial crisis or recession (BIS 2009).\(^2\) By May 2009, policy rates of the major central banks had been reduced to close to zero, except for the

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\(^2\) The Bank of Japan, with a policy rate already very low, at 0.5 percent, did not ease, but expressed strong support for the coordinated policy action.
European Central Bank and Bank of Canada, which stopped their rate cuts well before reaching the zero-lower bound (Arteta et al. 2015). In several advanced economies, this was complemented with capital injections or emergency funding for financial institutions (U.S. Department of Treasury 2013).

Despite lower funding costs, banks globally tightened credit standards, so financial conditions faced by borrowers did not ease by nearly as much as the cuts in policy rates might indicate. To boost credit availability, major central banks subsequently broadened the scope of their policy to include quantitative easing programs—large-scale purchases of government bonds and private sector assets and credit provision—and forward guidance on monetary policy, both aimed at lowering longer-term rates (Carstens 2019). The asset purchases resulted in substantial changes in the size and composition of the balance sheets of central banks.

The Federal Reserve also coordinated swap arrangements with other major central banks to address the shortage of U.S. dollar funding among non-U.S. banks. By the end of 2008, the Federal Reserve had extended swap lines to all major central banks as well as to Australia, Brazil, Denmark, Korea, Mexico, New Zealand, Norway, and Sweden. Within Europe, central banks had similar swap arrangements for short-term funding in the euro and Swiss franc.

Although these policy responses addressed the immediate funding needs of banks and succeeded in averting a collapse of the financial system, the bankruptcy of Lehman Brothers in September 2008 caused serious concerns about the solvency of many systematically important financial institutions. As a result, additional measures were undertaken by governments in advanced economies to stabilize markets and institutions, including providing deposit and debt guarantees, capital injections to increase bank solvency, and asset purchases.

**Monetary stimulus in EMDEs.** Against the backdrop of a decade of low inflation, improved policy frameworks, and high international reserves, EMDEs also pursued monetary policy accommodation. Three-fifths of central banks in EMDEs with floating exchange rates lowered policy rates by the first quarter of 2009 (Ha, Kose, and Ohnsorge 2019). Some LICs, mostly in SSA, eased monetary policy when inflation pressures subsided amid lower energy and food prices (IMF 2010a). The monetary easing during the crisis stands in sharp contrast to, for example, the 1997-98 Asian financial crisis when many of the affected countries had exchange rate targets, and raised policy rates in attempts to prevent large currency depreciations (Figure 5.1).

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3The Federal Reserve began its quantitative easing program in November 2008, the Bank of England in March 2009, and the European Central Bank in May 2009. These programs of large-scale purchases of longer-term assets were intended mainly to lower longer-term interest rates, partly through a “signaling effect” (i.e., by boosting investor confidence in these assets), and more importantly through a “portfolio balance effect” through which the asset purchases would reduce the availability of such assets to the private sector, thus raising their prices and lowering their yields.

4Based on 39 EMDEs with available data on exchange rate regimes and monetary policy rates. In the early stages of the crisis, EMDEs increased policy rates to stem rising inflation as growth remained robust, whereas in advanced economies growth had weakened. EMDEs started to cut rates in late 2008 and early 2009.
BOX 5.1 Disinflation in emerging market and developing economies

Emerging market and developing economies (EMDEs) have achieved a remarkable decline in inflation, from a median rate over 17 percent in 1974 to about 3 percent in 2018. This achievement has coincided with an even sharper decline in inflation in advanced economies. What may be called the “great disinflation” in EMDEs has 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. The 2009 global recession also contributed to the decline in inflation. However, if the wave of structural and policy-related factors that have driven disinflation since the 1970s loses momentum or is reversed, policymakers may find that maintaining low inflation can be as great a challenge as achieving it.

Introduction

Emerging market and developing economies (EMDEs) have achieved a remarkable decline in inflation since the mid-1970s (Ha, Kose, and Ohnsorge 2019).\(^1\) Median annual national consumer price inflation in EMDEs fell from stubbornly persistent double-digit rates during the 1970s to about 3 percent in 2018 (Figure 5.1.1). By 2018, inflation was within or below central bank target ranges in three-quarters of the EMDEs that had adopted inflation targeting. 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 steady and faster economic growth and better development outcomes. But it remains to be seen whether EMDEs can continue to enjoy low inflation if the confluence of structural and policy-related factors that have fostered global disinflation over recent decades is not sustained.

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?
- Can EMDEs sustain low inflation?

Evolution of inflation: A remarkable conquest

Disinflation. EMDEs have witnessed a significant decline in inflation since the mid-1970s, with median annual national consumer price inflation down from a

Note: This box was prepared by Jongrim Ha.

\(^1\) The “near-universal” character of the decline in inflation since the mid-1970s was recognized at an early stage by Rogoff (2003).
peak of 17.6 percent in 1974 to 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 5.1.2). Even among low-income countries (LICs), inflation fell sharply between the mid-1970s (around 15 percent a year) and 2018 (3.9 percent), although there is larger variability in national inflation rates among LICs than among other EMDEs.

EMDE disinflation occurred against the backdrop of even sharper disinflation among advanced economies, where median inflation dropped from its highest rate in 60 years in 1974 (15 percent) to its lowest in 2015 (0.4 percent). Since 2015, it has risen somewhat to 1.6 percent in 2018 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 lift inflation back to their inflation targets over the past decade.

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2 Disinflation is a decline in inflation rates, regardless of inflation being negative (deflation) or positive.
3 However, inflation remains in double-digits in Egypt, Iran, Nigeria, and Turkey, often reflecting currency depreciation.
**BOX 5.1 Disinflation in emerging market and developing economies (continued)**

**FIGURE 5.1.2 Factors associated with disinflation**

Inflation has declined in all EMDE regions and low-income countries. In most EMDEs, annual inflation is now below 5 percent. Lower inflation is associated with greater trade and financial openness. Inflation also tends to be lower in countries that employ an inflation targeting and have more independent and transparent central banks.

**A. Median CPI inflation, by region**

**B. Inflation in low-income countries**

**C. Distribution of inflation in EMDEs**

**D. Inflation, by trade and financial openness**

**E. Inflation, by index of central bank independence and transparency**

**F. Inflation, by monetary policy regime**

Source: Ha, Kose, and Ohnsorge (2019); Haver Analytics; International Monetary Fund; OECD.

Note: Median headline CPI (consumer price index) inflation of 29 advanced economies and 123 EMDEs. EAP = East Asia and the Pacific, ECA = Eastern Europe and Central Asia, LAC = Latin America and the Caribbean, MNA = Middle East and North Africa, SAR = South Asia, and SSA = Sub-Saharan Africa.

B. Solid line shows median inflation and dotted lines refer to interquartile ranges, based on 29 LICs.

C. Inflation refers to quarter-on-quarter annualized inflation. Sample includes 50 EMDEs.

D. Columns indicate median inflation in countries with high trade-to-GDP ratios ("Trade") or high levels of financial assets and liabilities relative to GDP ("Finance") in the top quartile ("high openness") of 175 economies during 1970-2017. Horizontal bars indicate countries in the bottom quartile ("low openness").

E,F. Columns indicate median inflation in country-year pairs with a central bank transparency index in the top quartile (E) or with inflation targeting monetary policy regimes (F). Horizontal bars denote medians in the bottom quartile (E) or with monetary policy regimes that are not inflation targeting (F).

D.-F. Differences are significant at the 5 percent level.

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Drivers of low inflation. While the global financial crisis played a major role in pushing inflation down around the world over the past decade, a wide range of structural changes has supported the longer-term trend of disinflation. The most significant of these have been the widespread adoption of more effective and transparent monetary, exchange rate, and fiscal policy frameworks as well as globalization (Figure 5.1.2).

- **Macroeconomic policies.** In the second half of the 1980s and during the 1990s, many EMDEs implemented programs of macroeconomic stabilization and structural reform, and gave their central banks greater independence and clearer mandates to achieve and maintain low inflation. The adoption of more 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 Dincer-Eichengreen 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. Changes in fiscal policy frameworks have also contributed: fiscal rules have been adopted in 88 countries, including 49 EMDEs (Ha et al. 2019). Other reforms, including labor market and product market liberalization, and the removal or easing of foreign exchange market controls, also assisted the disinflation process.

- **International trade and financial integration.** Inflation tends to be lower in economies that are more open to trade and financial flows. With regard to trade, in both the median EMDE and the median advanced economy, the ratio of trade (exports plus imports) to GDP increased by half between 1970 and 2017, to 75 percent of GDP in the case of EMDEs. Increasing international integration of product markets has contributed to lower inflation partly because increased openness to imports in consumption and production has increased competition in domestic markets. In addition, the growth of manufacturing production and exports in EMDEs (particularly China, where labor costs are relatively low) has played an important role in lowering consumer price inflation worldwide. Increased financial integration has helped discipline macroeconomic policies: more financially integrated economies are more likely to implement monetary policies targeting low and stable inflation (Kose et al. 2010). In EMDEs, international assets and liabilities tripled (although they remain only half the level of advanced economies).

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4 Other structural changes have also been important (Ha et al. 2019). For example, technological advances, including the digitalization of services and automation of manufacturing, have transformed production processes that attenuated inflation pressures. Population aging may also have contributed.
A critical feature of the international inflation experience of the past four to 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, Kose, and Ohnsorge 2019). The model includes a common global factor as well as group factors specific to advanced economies and EMDEs, respectively. 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 5.1.3). 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, Kose, and Ohnsorge 2019). In this period, it explains about one-fifth and one-quarter, respectively, of inflation variation in...
EMDEs and advanced economies. Over the past four decades, the EMDE-specific factor has also become more important. The rising importance of these global and group-specific factors indicates that inflation synchronization has become more broad-based over time.

**Tradables versus non-tradables.** 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.

**Maintaining low inflation: A challenge**

The future maintenance of low inflation cannot be taken for granted (Carstens 2018; Draghi 2015; Rogoff 2014). If cyclical and structural forces become less disinflationary over the next decade than they have been over the past five decades, inflation could rise globally. Through the strengthening global inflation cycle, this could 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 reversed amid mounting populist sentiment.

- **Slowing globalization.** The rising protectionist sentiment of recent years may slow the pace of globalization or put it into reverse. New tariffs and import restrictions have been put in place in advanced economies and EMDEs since 2017. The risk of further escalation in trade restrictions by 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. In the past, declines in EMDE central bank independence and transparency have 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 or persistently weak economic growth could trigger a move away from rules-based, or otherwise disciplined, fiscal policies. Fiscal rules can become ineffective once commitment to them falters (Wyplosz 2013). Mounting public and private debt in EMDEs could also weaken commitments 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 2018b). EMDE sovereign credit ratings have continued to deteriorate,
with some falling below investment grade, reflecting concerns about rising government debt and deteriorating growth prospects.

If unwanted inflation makes a comeback, policy frameworks may be tested in EMDEs: inflation expectations in these economies are generally less well-anchored than in advanced economies, and the absence of strong monetary policy frameworks in many of them means that inflation is sensitive to exchange rate movements (Ha, Stocker, and Yilmazkuday 2019; Kose et al. 2019). Growing inflation synchronization also increases the risk of policy errors when the appropriate response depends on the origin of the underlying inflation shock (IMF 2018b).

EMDE central banks may struggle to contain inflationary pressures and may not receive adequate support from fiscal policy.

History teaches us that it is difficult to sustain low inflation. For example, the 1950s and 1960s under the Bretton Woods fixed exchange rate system and the period of the Gold Standard in the early 1900s were followed by sharply rising inflation (Figure 5.1.4). The steep increase in oil prices in 1973-74 led to a rapid acceleration in global inflation, accompanied by sharp declines in growth in many countries (Kose and Terrones 2015). Global inflationary pressures also led to

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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; Carney 2015; Draghi 2015).
BOX 5.1 Disinflation in emerging market and developing economies (continued)

significant increases in domestic inflation in developing economies, including those that had 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. Such experiences illustrate the fact that maintaining low inflation can be as great a challenge as achieving low inflation.

EMDE policymakers need to recognize the increasing role of the global inflation cycle in driving domestic inflation. Options to help insulate economies from the impact of global shocks include strengthening institutions, including central bank independence, and establishing fiscal frameworks that can both ensure long-run debt sustainability and provide room for effective counter-cyclical policies.

EMDEs adopted a wide range of additional monetary instruments during this period. Central banks in EAP (China, Malaysia), LAC (Brazil, Colombia, Peru), and SAR (India) reduced reserve requirements while others accepted a broader range of collateral as lender of last resort (Argentina, Chile, Czech Republic). Some central banks in MNA and SSA injected liquidity into domestic banking systems (Nigeria, Tunisia) or recapitalized domestic banks (Algeria, Kenya, Mali). Brazil, Colombia, China, and the Philippines also loosened financial conditions by increasing government-financed lending, channeled through their development banks. During 2007-09, the combined loan portfolio of development banks increased by 36 percent, well above the 10 percent increase in commercial bank credit (de Luna-Martínez and Vicente 2012).

Foreign exchange market support. In addition to injecting monetary policy stimulus, many EMDE central banks used a variety of tools to ease downward pressures on their exchange rates. In 2009, about one-fifth of EMDEs intervened in foreign exchange markets to support their currencies and, on average, these countries used 15 percent of their international reserves (Figure 5.1). Such operations included selling foreign currency in the spot market (Brazil, India, Mexico) and engaging in swap market auctions (Brazil, Hungary, Poland). Other measures included setting up repo facilities (Argentina, Brazil, Philippines), providing guarantees on currency deposits (India, Malaysia, Turkey), and changing regulations to facilitate foreign borrowing (Chile, China, Thailand).

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5 In the run-up to and in the wake of the global financial crisis, several EMDEs such as Brazil, Colombia, Indonesia, and Thailand introduced capital controls and other measures to manage exchange rate pressures (Gallagher 2015; IMF 2012; World Bank 2009). Some EMDEs also implemented unconventional monetary policy (García-Cicco and Kawamura 2014).

6 China faced upward pressures instead; the central bank accumulated foreign reserves until mid-2014.
FIGURE 5.2 Fiscal policy since the global recession

Fiscal stimulus in the largest advanced economies and EMDEs supported a swift recovery in global output. Advanced economies have gradually unwound their fiscal stimulus since the crisis. However, fiscal stimulus has not been fully unwound in many EMDEs and policy buffers have deteriorated.

A. Share of EMDEs with debt on rising trajectories

B. Fiscal balance

C. Fiscal balance in selected major advanced economies

D. Fiscal balance in selected major EMDEs

Source: European Central Bank, Kose et al. (2017), World Bank.
A. Chart shows the share of EMDEs with sustainability gaps below -1 percent of GDP, i.e., government debt on a clearly rising trajectory even at current low interest rates. Lines reflect GDP-weighted averages for corresponding country groups. The sustainability gap is the difference between the actual primary balance and the debt-stabilizing primary balance at current interest and growth rates.
B. Lines show simple averages for corresponding country groups.
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India). Some central banks established loan facilities. In the fourth quarter of 2008, the Federal Reserve extended swap lines to Brazil, Korea, Mexico, and Singapore, while the European Central Bank and the Swiss National Bank provided support to Hungary and Poland through swap and repurchase agreements.

Fiscal stimulus during the crisis. Beginning in late 2008, concerns that monetary stimulus would not be sufficient to avert sharp output contractions led to an unprecedented use of countercyclical fiscal policy responses by major economies (Figure 5.2). G20 countries concurrently introduced fiscal stimulus packages, equivalent to 1.4

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Many EMDEs with less developed financial systems lack the administrative capacity or policy credibility to implement effective countercyclical measures (Allen and Giovannetti 2011). Monetary policy in these countries has therefore focused on boosting credit supply by using non-interest rate instruments (Binici and Yörüköglü 2011).

Colombia, Mexico, and Poland also obtained access to the IMF’s Flexible Credit Line for countries with sound fundamentals.
percent of global GDP (IILS 2011). Among advanced economies, the packages adopted in the United States, euro area, and Japan amounted to 5.6, 2.0, and 7.9 percent of annual GDP, respectively (Cottarelli, Gerson, and Senhadji 2014; ECB 2010; OECD 2009). China adopted the largest stimulus package, equivalent to 12.7 percent of GDP. Other G20 EMDEs, such as India, Russia, Saudi Arabia, South Africa, and Turkey, also implemented large fiscal stimulus packages.

Outside the G20, several countries (Egypt, Philippines, Singapore, Vietnam) also announced large fiscal stimulus packages (more than 4 percent of GDP; Nanto 2009). Several commodity exporters that had accumulated large sovereign wealth funds during the 2002-07 commodity price boom (Kuwait, Qatar, United Arab Emirates) implemented countercyclical fiscal stimulus (IMF 2010b). Governments in several LICs, such as Kenya and Tanzania, also increased government spending, mostly on infrastructure and other public investments (Osakwe 2010). In contrast, many ECA countries could not adopt sizable fiscal stimulus programs because of severely constrained government finances. Several economies in this region (Hungary, Kyrgyz Republic, Ukraine) sought emergency lending from the IMF.

The composition of the fiscal stimulus packages varied widely. In the United States and the euro area, the measures consisted mainly of tax cuts and increases in transfers, which tend to have lower fiscal multipliers (Ramey 2019). In contrast, China’s fiscal stimulus package focused primarily on infrastructure investment, which tends to have large multipliers (Leduc and Wilson 2014). Given the high import content of investment spending, this also benefited regions with close trade linkages to China (Southeast Asia for manufacturing and LAC, MNA, and SSA for commodities). Other EMDEs, such as India, Mexico, and South Africa, also channeled their stimulus into infrastructure investment to close infrastructure gaps. Some countries introduced new social protection programs, such as conditional cash transfer schemes (CCTs) in 2008-09, while others expanded either existing coverage of CCTs or benefits were increased (Fiszbein, Ringold, and Srinivasan 2011).

During the global recession, most EMDEs implemented discretionary fiscal stimulus on a larger scale than in earlier global contractions and allowed automatic fiscal stabilizers to operate unimpededly (World Bank 2015). Economies with relatively wide fiscal space (i.e., with government debt below 40 percent of GDP) were able to implement greater

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9 At the November 2008 G-20 Summit in Washington, DC, leaders of the G20 countries pledged rapid action to use fiscal measures to stimulate domestic demand.

10 Estimating the size of fiscal stimulus packages is complicated by an often unclear breakdown of old and new spending and an uncertain timeframe for implementation. Hence, estimates from different sources may differ substantially (Cottarelli, Gerson, and Senhadji 2014).

11 Kenya graduated to middle-income status in 2016.

12 As shown in Fiszbein, Ringold, and Srinivasan (2011), examples of new CCT programs implemented between 2008-2009 include Indonesia’s Bantuan Langsung Tunai (existed in 2005 and started again in 2008 as a one-off program) and Senegal’s Social Cash Transfer and Nutritional Security (lasted for 6 months in 2009). Kenya’s Orphan and Vulnerable Children program (launched in 2004 with the scaled-up program being rolled out in 2010, still operating) and the Philippines’ Pantawid Pamilyang Pilipino Program have been scaled up (carried out in 2008, still operating). In 2008, Brazil’s Bolsa Familia (created in 2003, still running) and Mexico’s Oportunidades (created in 1997, still running), have expanded their coverage expanded and increased the amount of household transfers.
fiscal stimulus than more indebted governments with narrower fiscal space (Figure 5.2; Box 5.2). However, widening fiscal deficits were reflected in rapidly rising debt.

After the global recession: Partial policy tightening

Countries have by and large not fully reversed the post-crisis policy stimulus, in part because of protracted weakness in post-crisis growth. Since the global recession, monetary policy has remained highly accommodative in advanced economies and EMDEs. Although the post-crisis plunge in commodity prices forced a policy tightening in commodity-exporters, EMDE fiscal and external positions have generally worsened.

Gradual unwinding of fiscal stimulus in advanced economies. Early this decade, large government fiscal deficits and rising debt in advanced economies, resulting partly from the fiscal stimulus and financial rescue packages, raised concerns about fiscal sustainability. Some countries with large deficits in the euro area at times faced acute market concerns about sovereign risk. Despite austerity measures in Ireland, Italy, Greece, Portugal, and Spain, these market concerns spilled into the banking sector, which had accumulated sizable government debt holdings. A series of bailout packages organized under new standing facilities backed by the European Union and the IMF, as well as expanded bond purchases by the European Central Bank, provided crucial support to these economies.

The euro area’s fiscal balance has gradually improved since 2011, and the deficit-to-GDP ratio had almost returned to its 2007 level by 2018 (Figure 5.2). The fiscal deficit of the United States fell from about 13 percent of GDP in 2009 to just over 3 percent in 2015, but has since risen to over 4 percent in 2018. Japan maintained an expansionary fiscal stance on reconstruction efforts following the 2011 earthquake, but fiscal deficits have gradually declined.

Slow withdrawal of monetary accommodation in advanced economies. Since the crisis, monetary policy in the major advanced economies has remained highly accommodative (Box 4.2; Arteta et al. 2018). In part, this has reflected concerns about the possibility of secular stagnation which posits that chronic demand weakness lowers potential growth (Summers 2014). During the recovery, major central banks have kept policy rates at, or a little above, the historically low levels attained after the crisis. The U.S. Federal Reserve started to raise the federal funds rate from close to zero in December 2015, and its target range for the rate reached 2.25-2.50 percent in late 2018 before being reduced by 25 basis points one year later. But, a decade after the global recession, euro area and Japanese policy rates remain negative.

In addition, central banks continued their large-scale asset purchases well after the global financial crisis. To boost the sluggish recovery, the U.S. Federal Reserve undertook several rounds of such asset purchases between late 2008 and October 2014. The European Central Bank announced several asset purchase facilities during 2011-2016, including an expanded asset purchase program in March 2015. While this was due to be phased out after December 2018, the weakness of the euro area economy in the following year has prompted the ECB to announce preparations for an additional round of purchases. The Bank of Japan, over the same period, also introduced new asset
purchase programs. While it slowed its quantitative easing program in December 2018, it has maintained a highly accommodative policy stance.

**Delayed unwinding of stimulus in most EMDEs.** Several EMDEs that had introduced fiscal and monetary stimulus in 2009-10 gradually, but only partially, unwound this stimulus starting in 2010. By 2018, only one-quarter of EMDEs had returned their fiscal deficit-to-GDP ratios to 2007 levels, while about one-half had returned their real interest rates to 2007 levels (Figure 5.3). Most of the EMDEs that fully unwound their crisis-related fiscal stimulus were commodity importers.

Several large EMDEs have not reversed their fiscal stimulus at all since 2011. In China, to deal with potential financial stability risks, the government reined in investment by local governments, discouraged financing through the non-bank system, tightened housing market regulations, and slowed the growth of bank lending (World Bank 2014). However, the government subsequently embarked on additional rounds of stimulus spending in 2015-16 and 2018-19. Similarly, in India, fiscal and monetary stimulus by the central government was only partially unwound until 2016, when policy loosening resumed. In Brazil, the unwinding of crisis-related fiscal stimulus was also delayed. Turkey has struggled to unwind its spending increases and its policy interest rates remained negative in real terms despite double-digit inflation and rapid credit growth since 2017 (Gürkaynak et al. 2015). The persistence of large budget deficits has meant that EMDE debt sustainability indicators have steadily deteriorated since 2011. In more than one-third of EMDEs, widening deficits are setting government debt on firmly rising trajectories, especially in LICs (Figure 5.2, Kose et al. 2017).

**Procyclical policy tightening in commodity-exporting EMDEs.** Many commodity-exporting EMDEs were required to enact procyclical policy tightening during the commodity price slide of 2011-16, despite being in the midst of recessions or sharp slowdowns (World Bank 2018a). Two-thirds of commodity exporters tightened fiscal policy in 2014-16, even in the face of slowing growth. One-half of commodity exporters with flexible exchange rates raised policy rates in 2014-16, in response to above-target inflation and strong depreciation pressures. Under exchange market pressure, several EMDEs allowed more exchange rate flexibility. Russia, which had been operating on a managed floating exchange rate regime since 1999, transitioned to a flexible rate in November 2014. Azerbaijan, Kazakhstan, and Nigeria also began to allow greater

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13 The People’s Bank of China raised its policy interest rate by 1.25 percentage points between October 2010 and May 2012, but subsequently pursued a more accommodative monetary policy, including a reduction of the required reserve ratio.

14 The general government deficit declined from 9.5 percent of GDP in 2009 to 6.9 percent in 2019, despite a large stimulus package carried out in 2017 to support the ailing banking sector and to boost infrastructure investment. The Reserve Bank of India raised policy rates by 3.75 percentage points between February 2010 and October 2011 but has since lowered them.

15 Brazil’s fiscal deficit deteriorated from 3.2 percent of GDP in 2009 to 10.2 percent of GDP in 2015, before a slight improvement in 2016-18.

16 The average fiscal deficit of LICs peaked at 5.2 percent of GDP in 2015 compared to 1.8 percent of GDP in 2007. Government debt, although lower than pre-crisis, increased by 17 percentage points of GDP between 2012 and 2018.
exchange rate flexibility in 2015-16. Oil-exporting countries with fixed exchange rate regimes were less able to avoid procyclical fiscal policies, reducing government spending by 8 percentage points of GDP more than those with flexible exchange rate regimes.

Legacy of the global recession: Higher vulnerabilities than pre-recession. Since the global recession, rising external, corporate, household, and government debt stocks, and deteriorations in fiscal and current account balances, have increased the vulnerabilities of EMDEs to external shocks. This has left EMDE policymakers with less room than they had in 2007 to support domestic demand and activity in the event of future financial or economic stress.

- **External positions.** On average, external debt in EMDEs has increased sharply, to 57 percent of GDP in 2018 from 43 percent of GDP in 2007. Although still above...
BOX 5.2 Fiscal space and financial crisis

The availability of fiscal policy as an effective instrument to support demand and activity in economic downturns depends on the amount of budget resources available to raise spending or lower taxes without jeopardizing fiscal sustainability. This resource availability is often called fiscal space. Since the 2009 global recession, fiscal space in EMDEs has narrowed. This makes these economies more vulnerable to economic downturns and sudden spikes in financing costs, and limits their ability to counteract adverse shocks.

Introduction

In many EMDEs, public debt levels have increased and market perceptions of sovereign credit quality have deteriorated. Such developments may limit the budgetary resources available for governments to stimulate demand and activity and boost employment in future economic downturns. They may similarly restrict the ability of government to use fiscal policy as a tool for macroeconomic management in the event of adverse shocks, such as natural disasters. The availability of budgetary resources for the conduct of effective fiscal policy is often called “fiscal space” (Kose et al. 2017; Kose, Ohnsorge, and Sugawara forthcoming).

While fiscal space is difficult to measure, a critical component is debt service capacity. Kose et al. (2017) distinguish four broad components of this capacity: government debt sustainability, balance sheet composition, external and private sector debt, and market perception of sovereign risk. Government debt sustainability captures the longer-term capacity of the government to finance its obligations. The composition of the public sector balance sheet can provide a metric for the government’s exposures to sudden changes in financial market conditions. External and private sector debt may involve contingent liabilities of the government, including debt that is only implicitly government-guaranteed. Finally, market perception of sovereign risks reflects a government’s ability to tap markets and service its obligations.

Using a cross-country database prepared by Kose et al. (2017), this box addresses the following questions:

- How has fiscal space in EMDEs evolved over time?
- How does fiscal space typically behave during episodes of financial stress?
- How can fiscal space be increased?

Evolution of fiscal space over time

Fiscal space increased during 2000-07, but has shrunk around the world since the

Note: This box was prepared by Naotaka Sugawara.
2009 global recession. As illustrative examples, Figure 5.2.1 shows the evolution of some measures of the four components of debt service capacity mentioned above. The measures used are for illustrative purposes but are fairly representative of the concepts. The improving trend before the crisis was widely shared, as virtually all indicators of fiscal space improved in more than half of EMDEs and most indicators improved in more than half of advanced economies. After the global recession, however, debt sustainability indicators, including government debt, have deteriorated in at least three-quarters of all countries. External and private debt stocks have increased in more than half of all countries and market perceptions of sovereign credit risks have also worsened.

Before the global recession, measures of government debt sustainability improved significantly in EMDEs, and to a considerably lesser extent in advanced economies, as rapid growth reduced deficits and helped to reduce debt stocks in relation to
In LICs, debt relief initiatives such as the Heavily Indebted Poor Countries Initiative and Multilateral Debt Relief Initiative helped reduce debt burdens. These improvements contributed to a decline in EMDE general government gross debt by 13 percentage points of GDP over 2001-07, to 36 percent of GDP. By contrast, government debt in advanced economies stabilized at about 70 percent of GDP.

Other trends were less favorable. Although, by 2007, external debt-to-GDP ratios were below the levels of the early 2000s in three-quarters of EMDEs, external debt had become increasingly short-term. While still well below that of advanced economies, on average, private debt in EMDEs rose over 2001-07.

Since the global recession, fiscal space has shrunk in EMDEs. Partly as a result of steep revenue losses in commodity-exporting EMDEs, sustainability gaps and fiscal deficits have widened in EMDEs. Government debt has risen to 54 percent of GDP, on average, in 2018. It now exceeds 2000 levels in more than one-third of EMDEs and is increasingly held by non-residents.

Moreover, external and private sector debt has increased from 2007 levels in the majority of EMDEs. A rapid increase in private sector debt, especially for corporates, since the global recession has been accompanied by weaker corporate solvency and profitability (Alfaro et al. 2017; World Bank 2018b).

**Fiscal space during financial crises**

Figure 5.2.2 illustrates how fiscal space has changed during financial crises. It employs event study analysis to examine the behavior of selected indicators of fiscal space around financial crises since 1990—including banking, currency, and debt crises—and to compare these events against recent developments.

In the run-up to and during these crisis episodes, fiscal space typically deteriorated as government debt increased and fiscal balances weakened. This largely reflects the budgetary cost to support banking systems (Tagkalakis 2013) and the increased cost of foreign-currency-denominated government debt following exchange rate depreciations. Increasing government debt coincide with worsening long-term sovereign debt ratings. However, within two years of financial crises, government debt and sovereign ratings returned to stable paths. This improvement may reflect debt restructuring, and losses of access to financing that forced governments to rein in spending or raise revenues. During crises, deleveraging reduced private debt. Prior to crises, the median ratio of private sector debt to GDP tended to remain stable, but, in the year following crises, median private debt declined by more than 3 percentage points of GDP.

A number of indicators suggest that EMDE fiscal space is more limited than prior to previous crises. In particular, the government debt ratio in the median EMDE
BOX 5.2 Fiscal space and financial crisis (continued)

FIGURE 5.2.2 Fiscal space around financial crises and in 2018

Fiscal space has deteriorated during financial crises in EMDEs. Within two years of such episodes, government debt and sovereign ratings typically return to stable paths.

Policy frameworks to improve fiscal space

Fiscal space is critical for the use of fiscal policy to manage aggregate demand and to reduce vulnerabilities to adverse shocks, such as natural disasters. With fiscal space having narrowed since the global recession, policy measures to shore up fiscal sustainability have become a priority for EMDEs.

Fiscal sustainability could be improved by increasing the efficiency of revenue collection and spending. Measures to strengthen revenue collection could include...
broadening tax bases, removing loopholes for higher-income households or profitable corporations, and strengthening tax administration (Akitoby 2018). In countries with high levels of informality, increasing the revenue raised from the informal sector—for example, by promoting a change in payment methods to non-cash transactions and facilitating collective bargaining and agreement with informal sector associations on taxation—could help increase revenues directly, as well as indirectly, by encouraging informal firms to join the formal sector, which would enhance their growth prospects (Awasthi and Engelschalk 2018; Joshi, Prichard, and Heady 2014).

On the spending side, governments should seek to change the composition of expenditures away from unproductive and inefficient outlays, such as broad-based subsidies, toward productive and growth-enhancing ones, such as public investment and well-targeted income support (Gemmell, Kneller, and Sanz 2016). More efficient public investment management could increase the returns and contain the cost of public investment. Well-designed pension reforms can also support fiscal sustainability.

In addition, credible and well-founded institutional mechanisms can help support fiscal discipline and strengthen fiscal space. Three such mechanisms have been widely introduced: fiscal rules, stabilization funds, and medium-term expenditure frameworks.

Fiscal rules impose numerical constraints on budgetary aggregates or balances—debt, overall balance, expenditures, or revenues. Rules often allow some flexibility in meeting targets to take into account cyclical deviations, estimated, for example, in terms of an output gap, or structural adjustments. Fiscal rules, and in particular cyclically adjusted or structural balance rules, have been increasingly employed in EMDEs, especially since the global financial crisis (Schaechter et al. 2012). Implementation of fiscal rules can be improved by the establishment of a simple enforcement structure and strict limits on off-budget government guarantees. Transparency and oversight arrangements, such as fiscal councils, can allow governments some flexibility to respond to events while maintaining the credibility of the framework (Debrun and Kinda 2017). Chile’s use of a technical fiscal council and fiscal rule with a set target for the structural balance is a good example of a well-designed, credible, and successfully operated fiscal rule system.

Stabilization funds set aside receipts from natural resource revenues, or from other income that might not be long-lasting. Amounts saved during favorable times may be released to cushion revenue shortfalls and to mitigate negative shocks to government expenditures resulting from drops in revenues. Such funds were adopted widely in the 2000s when high oil prices, along with the discovery of oil in a number of EMDEs, swelled government revenues. Many stabilization funds are integrated with the budget, with clear rules to guide the accumulation and
withdrawal of fund resources. The effective use of stabilization funds requires a government commitment to fiscal discipline and macroeconomic management (Gill et al. 2014). Proper design and strong institutional environments that support their operations are crucial factors for their success, as in the cases of Norway and Chile (Schmidt-Hebbel 2012; Stone and Truman 2016).

Medium-term expenditure frameworks are intended to establish or improve credibility in the budgetary process. Such frameworks seek to ensure a transparent budgetary process, where government agencies allocate public resources based on strategic priorities. Robust implementation is closely related to linkages with broader economic and social policy objectives, to the reliability of the relevant data, and to the forecasting capability of the authorities (Allen et al. 2017). In South Africa, such a framework was introduced in the context of high government debt, and a combination of underspending by the central government and overspending by provincial governments. Underspending and overspending were both reduced following the introduction of the medium-term framework (World Bank 2013).

Conclusion

Fiscal space has been shrinking in EMDEs since the global recession, narrowing to levels typically seen before past financial crises. Adequate space is critical for fiscal policy to be available to help manage aggregate demand and to reduce vulnerabilities to adverse shocks. Hence, policy measures to shore up fiscal sustainability are now a priority for EMDEs. Credible and well-designed policy frameworks, with clear objectives, help implement and sustain such measures.

1990s averages, international reserves have fallen relative to external debt in more than two-thirds of EMDEs, and in some EMDEs more than halved, since 2007.

- **Fiscal positions.** On average, EMDE fiscal surpluses of 2.4 percent of GDP in 2007 have turned into deficits of 2.7 percent in 2018 (Figure 5.3). Because of the sharp decline in commodity prices, the deterioration has been particularly severe in commodity exporters, from a surplus of 3.5 percent of GDP in 2007 to a deficit of 3.3 percent of GDP in 2018. EMDE government debt has increased to 54 percent of GDP in 2018, from 45 percent of GDP in 2007; in more than one-third of EMDEs, government debt rose by more than 20 percentage points of GDP. Deteriorating public debt sustainability has also been reflected in sovereign credit rating downgrades.

- **Nonresident exposures.** In some EMDEs, the share of nonresident holdings in local currency bond markets has grown to more than 30 percent, exposing these countries to the risk of sharp market displacements in the event of swings of global risk sentiment (Agur et al. 2018; Figure 5.3).
• **LIC government debt.** In LICs, average government debt relative to GDP is less than it was in 2007. However, it has risen sharply, by 17 percentage points of GDP from a low in 2012 to 51 percent of GDP in 2018 (World Bank 2019b; Figure 5.3). As a result, interest payments have absorbed a growing share of government revenues. Debt has been increasingly owed to non-concessional and private creditors, heightening the vulnerability of LICs to financial market disruptions.

• **Corporate debt.** In non-LIC EMDEs, rapid credit growth fueled an increase in corporate debt, on average by 16 percentage points of GDP since 2007 to 50 percent of GDP in 2018 (Figure 5.3). While the largest corporate debt increase (54 percentage points of GDP) occurred in China, several other EMDEs (Chile, Philippines, Turkey, United Arab Emirates) experienced increases in excess of 30 percentage points of GDP (Borensztein and Ye 2018; Ohnsorge and Yu 2016).

• **Household debt.** EMDE household debt has increased on average by 5 percentage points of GDP since 2007 to 25 percent of GDP in 2018. In some EMDEs (Brazil, Chile, Colombia, Czech Republic, Malaysia, Poland), household debt has risen by more than 10 percentage points of GDP. The largest increases occurred in China and Thailand, where household debt swelled by 32 and 24 percentage points of GDP, respectively.

### Financial sector policies

The crisis triggered a major shift in financial sector policies. Prudential regulation and supervision have evolved from a focus on the stability of individual financial institutions towards a focus on the stability of the financial system as a whole. Restrictions on capital flows, a controversial policy measure before the crisis, have come to be viewed more favorably from a macroprudential perspective.

#### Prudential policies

**Prior to the global recession: stability of individual institutions.** Before the global financial crisis, the financial regulatory framework and supervision practices focused mainly on monitoring prudential risks at individual institutions. For example, in 2006, following this traditional microprudential approach, the U.S. Federal Deposit Insurance Corporation claimed that more than 99 percent of U.S. insured institutions met or exceeded the requirements of the highest regulatory capital standards, giving no indication of the large-scale vulnerabilities that were building up.

The crisis highlighted several shortcomings of this microprudential approach.

• The regulatory perimeter had mainly encompassed banks, with much less attention paid to the buildup of systemic risk in the nonbank sector. In the United States and other advanced economies, lightly regulated non-deposit institutions had steadily grown in size and complexity.

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18 Debt relief under the Heavily Indebted Poor Countries initiative and the Multilateral Debt Relief Initiative helped to reduce average public debt in LICs from a debt-to-GDP ratio of 115 percent in the early 2000s to 35 percent in 2012.
The microprudential regulatory regime tended to have procyclical effects on bank behavior (Gordy and Howells 2006). In particular, the risk-weighted capital requirements of Basel II tended to decline in the expansionary phase of the business cycle as risk ratings improved, and they tended to rise during the contractionary phase. As a result, despite meeting the Basel II requirements, banks in advanced economies and some EMDEs—especially in Europe—had high leverage, which posed risks to financial stability (Bruno and Shin 2015).

Fair-value accounting—using current market values as the basis for valuation—lent a further procyclical impulse since it encouraged balance sheet expansion as asset prices increased in economic upswings, and deleveraging in downswings.

After the global recession: stability of the financial system. The crisis brought about a rethinking of prudential regulation, which led to a rising interest in complementing microprudential policies that regulate the risk of individual institutions with macroprudential policies aimed at minimizing systemwide risk and at ensuring that the financial system does not create or amplify shocks that could lead to economic downturns (Claessens 2014; Zeev 2017; World Bank 2019c). An illustration of this new focus is the rapid increase in the use of the term “macroprudential” since 2008 (Figure 5.4; Cukierman 2013; Ostry et al. 2010). A key objective of macroprudential policy is to minimize systemic risk by limiting boom-bust credit cycles. Several new instruments have been developed under the Basel III framework specifically to promote this objective, such as: countercyclical capital requirements and dynamic provisioning to build up capital or liquidity buffers during good times; maximum leverage ratios to capture both on- and off-balance sheet exposures; and capital surcharges on systemically important financial institutions.

Macroprudential instruments have increasingly become an integral part of the toolkit of many central banks and other financial regulators since the crisis. Macroprudential indexes derived from a dataset for 36 advanced economies and 124 EMDEs suggest that all advanced economies, and about 70 percent of EMDEs, have used these instruments to strengthen the resilience of their financial systems (Cerutti, Claessens, and Laeven 2017). EMDEs have more actively used macroprudential instruments—often on an ad-hoc or experimental basis—partly reflecting the fact that they are more exposed to volatile capital flows and have less liberalized financial systems (Claessens 2014). These instruments have been used to reduce the growth of credit to nonfinancial corporations and households, and to help restrain asset price inflation, especially in the housing sector (Budnik and Kleibl 2018; Kuttner and Shim 2013, Vandenbussche, Vogel, and Detragiache 2015; Zhang and Zoli 2016).

In ECA, more than four-fifths of EMDEs have increased the use of macroprudential tools, while in SSA the share is only about one-half (Figure 5.4). The use of different tools has reflected different structural characteristics among countries. ECA has had relatively high financial integration internationally with a large presence of foreign banks.

Despite the rising interest in macroprudential policies, there are many challenges in designing and implementing them, especially in EMDEs. See details in Dijkman (2015) and Krishnamuti and Lee (2014).
C H A P T E R  5  A  D E C A D E  A F T E R T H E  G L OB A L R E C E S S I O N

that had experienced difficulties, and at the same time high public debt, which reduced the scope for countercyclical fiscal policies. Conversely, SSA, which has less open capital accounts and faced fewer banking sector challenges, has relied less on such tools.

Use of macroprudential tools. Since the global recession, macroprudential measures aimed at borrowers, such as caps on the loan-to-value ratio and the debt-to-income ratio, have been more extensively used in advanced economies. These instruments can be effective in reducing the amplitude of credit cycles, partly because they may be easier to enforce and calibrate than institution-aimed policies (Epure et al. 2018; Fendoğlu 2017). Macroprudential increases in capital requirements have been associated with

FIGURE 5.4 Macroprudential policy since the global recession

The global financial crisis and subsequent global recession led to an increased emphasis on macroprudential policy, which focuses on minimizing systemic risk. Most countries have strengthened the resilience of their financial systems. Advanced economies tend to use macroprudential tools aimed at borrowers, whereas EMDEs favor both borrower- and foreign exchange-related tools.

A. Google search term “macroprudential”

B. Average number of macroprudential tools in EMDEs

C. Use of macroprudential tools

D. Countries that used at least five macroprudential tools between 2007 and 2017


Note: 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, SSA = Sub-Saharan Africa.

A. Google trends data based on worldwide interest relative peak popularity (100) in the observed period. 6-month moving average.

B. Bars show the average number of macroprudential tools per country in each EMDE region for 2017, with diamonds showing the number for 2000 and triangles for 2007.

C. Bars show the percent of countries in each country group that use certain macroprudential tools. Borrower-targeted tools include debt-to-income ratio and loan-to-value ratio; Foreign exchange-related tools include limits on foreign lending and foreign exchange reserve requirements; Capital-related tools include countercyclical capital requirements and dynamic loan loss provisioning.

D. Bars show the number of macroprudential tools in effect in 2017, while diamonds show the number of macroprudential tools in effect in 2007.

Click here to download data and charts.
slower lending in U.K. banks, and dynamic provisioning has been associated with smoother credit cycles in Spain (Aiyar, Calomiris, and Wieladek 2016; Jiménez et al. 2017). In contrast, foreign exchange and liquidity policies, such as limits on foreign currency loans and foreign exchange countercyclical reserve requirements, have been more often used in EMDEs in efforts to reduce exposures to volatile capital inflows (Figure 5.4). This is especially the case in ECA, which had been plagued by currency mismatches in the balance sheets of households and firms (Ben Naceur, Hosny, and Hadjian 2019; Fidrmuc, Hake and Stix 2013; Ranciere, Tornell, and Vamvakidis 2010).

China has implemented a wide range of macroprudential policies since the crisis (Figure 5.4). A priority goal has been to contain the growth of corporate debt, especially of state-owned enterprises, through limits on the exposures of banks. Other macroprudential measures have aimed at curbing real estate speculation through sector-specific lending limits and higher mortgage down payment requirements. In India, macroprudential policy has focused on preventing excessive credit growth by increasing the capital that banks are required to hold against riskier loans and increasing the rate at which banks are required to provision against loan losses for specific sectors. Macropurdential measures have also been used in economic downturns; for example, Brazil lowered reserve requirements in 2017 to help counter its protracted economic slowdown.

**Interaction between financial sector and macroeconomic policies.** The experience of the global financial crisis kindled interest in the impact of monetary and fiscal policy on financial stability and, conversely, the impact of prudential decisions on monetary conditions.20

- **Prudential policies and monetary conditions.** The impact of prudential policies on monetary conditions is explored in a small body of literature that is constrained by prudential data requirements. Among U.K. banks, higher capital requirements have been found to lower bank lending abroad and domestically (Aiyar et al. 2014; Meeks 2017). For large banks, their domestic lending response to capital requirements was stronger than their response to monetary policy (Aiyar, Calomiris, and Wieladek 2016).

- **Monetary policy and financial stability.** The main instrument of monetary policy—the short-term interest rate—is generally a weaker instrument for the promotion of financial stability than regulatory instruments (Lane 2016; Adrian, Laxton, and Obstfeld 2018). The latter can be focused on specific issues in institutions or markets and on lenders or borrowers whereas monetary policy cannot. That said,

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20 Nevertheless, the consensus among central bankers and economists remains that monetary policy is best aimed at controlling inflation and that it cannot take primary responsibility for financial stability (Yellen 2014). There are, however, exceptions to this general proposition (Lane 2016; Mishkin 2011; IMF 2019; Yellen 2014). For example, a large-scale, credit-fueled, asset-price boom may pose an obvious risk to financial and economic stability, and justify an increase in the policy rate beyond the normal requirements of the inflation objective (Gourio, Kashyap, and Sim 2018). An entirely alternative view is that monetary policy should systematically focus on financial stability as well as the macroeconomic goals (Borio 2014; Collard et al. 2017; Stems 2013; Svensson 2016).
sound monetary policy contributes to financial stability. In times of severe stress, such as 2008-09, central banks inject liquidity into the system on a large scale and stand ready to act as lender of last resort. In normal times, central banks provide support to financial stability, for example, through oversight of payment systems, monitoring of risks and vulnerabilities, and the maintenance of foreign reserves to defend their currencies against short-term speculative attacks (Cheung and Qian 2009; Jara, Moreno, and Tovar 2009).

- Fiscal policy and financial stability. Sound fiscal policy also contributes to financial stability. For example, by removing tax incentives to borrowing by the corporate sector, allowing a more balanced tax treatment of equity financing, and reducing tax exemptions of interest payments on mortgages, fiscal authorities can help curb credit growth and increases in housing prices.

Overhauling the regulatory framework. The increase in emphasis on systemic risk and macroprudential policy led to the establishment of the Financial Stability Board (FSB) in 2009, with the endorsement of the G20, to promote the reform of international financial regulation and supervision. Several countries have improved their system-wide regulatory architecture to meet goals set by the FSB. This has included enhancing the capacity to use macroprudential tools, strengthening international coordination among entities that share the financial stability mandate (especially in the cases of potential cross-border spillovers), and improving governance, transparency, and accountability. In general, economies that were harder-hit by the crisis—such as the United States, the United Kingdom, and the EU—have been somewhat more proactive in addressing regulatory weaknesses (Lombardi and Moschella 2017; Lombardi and Siklos 2016).

Since the crisis, several EMDEs with FSB memberships have established national financial stability councils or committees (Brazil, China, India, Mexico, Russia, Turkey), and incorporated new mandates for the central bank to exercise macroprudential supervision (Indonesia, Russia, South Africa; FSB 2018, 2019). Most of these EMDEs have made progress in implementing reforms, especially to meet Basel III capital and liquidity requirements and implement over-the-counter derivatives reforms (FSB 2018). EMDEs that are also members of the Basel Committee on Banking Supervision, including Brazil, China, Russia, and South Africa, have put in place risk-based capital rules, liquidity coverage ratio regulations, and capital conservation buffers (BCBS 2019).

The financial regulatory agenda set out by the G20 has several implications in EMDEs. Regulatory tightening in advanced economies has contributed to the withdrawal of major banks from EMDEs (Chapter 4). The Basel III recommendations are, like their predecessors, calibrated primarily for advanced economies, making some EMDEs hesitant to adopt those regulations to avoid potential new challenges associated with these new standards (Beck and Rojas-Suarez 2019). A recent survey suggests that the financial sector agenda set out by the G20 may have unintended economic costs for individual EMDEs (Briault et al. 2018). For example, the introduction of creditor-funded recapitalization, known as “bail in”, wipes out senior claims on the bank during bank resolution. However, most of the depositors on the liability side of banks in many EMDEs are small depositors. Bailing in those depositors would only intensify a financial
crisis by eroding the credibility of the financial system. Additionally, these EMDEs typically lack sufficiently developed financial markets for banks to issue debt securities that can be bailed in (Feyen and Zuccardi 2019).

**Challenges of macroprudential policy.** Although the importance of macroprudential policy is now widely accepted, it is still not well understood which tools are best suited to different circumstances and how they should be adapted to country characteristics. There are also questions on the appropriate design of policy institutions, in particular whether such policies should be under the purview of the central bank, a new financial stability agency, an existing market supervisory agency, or a committee comprising various institutions.

**Capital flow management policies**

**Prior to the global recession: limited role for capital flow management.** Capital flow management measures (CFMs) were widespread under the Bretton Woods regime of pegged exchange rates, when they provided countries with a degree of independence in monetary policy. After the collapse of the regime in the early 1970s, advanced economies began to shun restrictions on capital flows. They opened their capital accounts and financial markets to the international economy. EMDEs started to open their capital accounts later, during the 1980s and 1990s. This reflected the view that, by liberalizing international capital flows, EMDEs would potentially benefit from access to credit and investment from advanced economies, hence promoting growth and development. However, the experiences of several countries during the 1997-98 Asian financial crisis highlighted the risk of too rapid an opening of the capital account and of the importance of coordinating capital account liberalization with stronger financial regulation and supervision.

**Capital flow management measures during the global recession.** Many EMDEs deployed capital management measures during and following the global recession, mainly in response to capital flow volatility (Gallagher 2011; IMF 2012, 2018a; Rey 2015). Early in the crisis, EMDEs experienced heavy outflows, in a flight to safety (Figure 5.5). The recovery of capital inflows in 2009-11 reflected the widening of interest rate differentials in favor of EMDE assets and was induced by unprecedented monetary policy accommodation in advanced economies. Concerns that heavy inflows might result in currency appreciation, asset bubbles, inflationary pressures, and financial instability more broadly led to the use of capital flow management measures on inflows, while the risk of a resurgence of capital flight underlay increased controls on outflows.

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21 Brazil, for example, imposed a series of capital flow management measures between October 2009 and August 2011. The measures included taxes on inward portfolio investment (2 percent in October 2009, 6 percent in October 2010), taxes on American Depositary Receipts (1.5 percent in November 2009), an increase in reserve requirements on capital inflows (January 2011), taxes on repatriated funds (6 percent in March 2011), and taxes on derivatives (1 percent in August 2011). In advanced economies, Iceland imposed CFMs in November 2008 amid a severe banking crisis. To prevent capital flight, and a collapse of the exchange rate, the Central Bank of Iceland restricted foreign currency outflows and froze offshore holdings of krona-denominated assets. Restrictions on capital outflows were lifted in March 2017, but those on inflows have been tightened, primarily to prevent currency speculation.
Some EMDEs strengthened existing controls while others introduced new measures (Gallagher 2011; Ghosh, Ostry, and Qureshi 2017). These CFMs included a wide range of price-based and quantity-based controls. These included: reserve requirement taxes on foreign investment (Brazil, Ecuador, Indonesia, Peru, Uruguay); taxes on currency outflows (Argentina, Ecuador, Venezuela); taxes on interest earned and capital gains on nonresidents (Thailand); minimum term requirements for holding central bank securities (Indonesia); and limits on foreign currency positions (Philippines). Some of these measures were subsequently eased when the inflow surge abated after 2012 (IMF 2016).

Not all countries responded to the pressures of capital inflows with capital flow management measures—some could not impose CFMs because of bilateral or multilateral trade and investment treaties (Abdelal 2007; Gallagher 2011). For example, the EU enforces open capital accounts across the union (Article 63 of the Lisbon Treaty;
EU 2007), NAFTA considers capital controls an actionable offense, and the OECD has a (although not actionable) code on liberalization of capital movements. Some countries bound by trade and investment agreements reframed capital controls as macroprudential policies or as quasi-controls (Indonesia, Korea, Peru, Uruguay; Grabel 2015).

**After the global recession: rising role for capital flow management.** The crisis triggered a rethinking of the role, benefits, and costs of financial liberalization, especially in light of the role of cross-border capital flows during the financial crises (Reinhart and Rogoff 2008). There is now an emerging consensus that capital flow management measures can play a legitimate role in a framework of rules to promote macroeconomic and financial stability. This has been supported by successes in stabilizing financial markets by reining in large capital flows (Brazil), and by development models built on measured capital account opening (China, India). The institutional views of major international organizations have evolved to admit the possibility of a role for managing capital flows, which can include capital flow management measures as part of broad coordinated policy packages.22

Since 2013, however, global capital flows have been more subdued than in the pre-crisis period. Thus, in practice, despite the increased availability of capital flow management measures, countries that have experienced episodes of large-scale inflows have dealt with the associated concerns about currency appreciation mainly through monetary easing and foreign exchange intervention (Colombia, India, Indonesia, Thailand, Turkey). This indicates that capital flow management measures may play a useful role during capital-inflow surges in certain situations (IMF 2018a).23 During periods of financial stress, capital flow management measures can provide effective support to other instruments (IMF 2016). For example, capital flow management measures have been used complementarily with macroeconomic policies, as well as with structural and financial sector reforms, to moderate financial stress episodes in Belarus, Cyprus, Greece, Iceland, and Ukraine. Outside crisis episodes, capital flow management measures have been employed to address country-specific financial sector vulnerabilities (China, North Macedonia, Peru, Russia). In some cases, macroprudential measures have been used to discourage borrowing in foreign currency (Korea, Peru).

**Challenges of capital flow management.** Whether capital flows are to be welcomed or whether they represent a problem to be tackled may be difficult to determine. Policymakers thus face challenges in understanding the underlying causes, and determining whether the flows will cause undue damage to competitiveness or threaten financial stability. A CFM intended to address a specific component of capital flows could merely shift the composition of flows toward noncontrolled segments of the financial system. Widespread CFMs could have cross-border spillover effects, for example, if they strongly affect exchange rate valuations and trade competitiveness.


23 During capital-inflow surges, capital flow management measures may play a useful role particularly when: 1) the room for adjusting macroeconomic policies is limited; 2) appropriate policies require time to take effect; 3) the inflow surge contributes to systemic financial risks; and/or 4) there is heightened uncertainty about the underlying economic stance due to the capital inflow surge (Adrian 2018; IMF 2018a).
Conclusion

Following the global financial crisis and the 2009 global recession, the largest advanced economies and EMDEs enacted unprecedented and coordinated macroeconomic stimulus. This provided crucial support to the international financial system and staved off a deeper global recession. For the first time during a major crisis, EMDEs were also able to employ a wide range of countercyclical monetary and fiscal policies to stem contagion and boost the post-crisis recovery. Numerous EMDEs lowered policy interest rates, intervened heavily in foreign exchange markets, and implemented fiscal stimulus packages. Three-fifths of EMDEs with floating exchange rates had lowered policy rates by the first quarter of 2009 and made use of other stimulus measures, such as reducing reserve requirements, injecting liquidity into and recapitalizing domestic banks, and channeling lending through development banks.

The crisis also ushered in a rethinking of financial sector policies. The emphasis of prudential regulation and supervision has shifted from the sole focus on the regulation and supervision of individual institutions (involving microprudential tools) toward a more balanced view on containing both individual risks and systemwide risks (involving macroprudential measures). At the same time, the appropriate use of capital controls as part of a package of policies to promote financial stability has gained greater acceptance.

Despite the successful manner in which EMDEs navigated the global financial crisis and its aftermath, as a group, they now appear more vulnerable to external financial or trade shocks than they were in 2007. This could be compounded by other pressures if there is a broader retreat from global cooperation and multilateralism. The crisis-related fiscal stimulus in many EMDEs has still not been fully unwound and, by 2018, fiscal balances have returned to 2007 levels in only one-quarter of EMDEs. Rising external, corporate, household, and government debt stocks, combined with wider fiscal and current account deficits, have increased the vulnerabilities of EMDEs to shocks compared with 2007.

The crisis and its aftermath provide a reminder that countercyclical fiscal and monetary policies can be crucial during periods of severe financial and economic stress. The 2008-09 experience also demonstrates that international cooperation and coordination enhances the credibility, and hence the overall positive impact, of stimulative policies. At the same time, the post-crisis experience illustrates the difficulties of unwinding a large stimulus, and of the danger that this can leave countries with increased vulnerability to future shocks. EMDE policymakers therefore need to develop a coherent framework of policies that address these vulnerabilities and credibly target the objectives of price, output, and financial stability.
References


A DECADE AFTER THE GLOBAL RECESSION

CHAPTER 5

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