CHAPTER 1

Debt: Evolution, Causes, and Consequences

The global economy has experienced four waves of debt accumulation over the past 50 years. The first three ended with financial crises in many emerging market and developing economies. During the current wave, which started in 2010, the increase in debt in these economies has already been larger, faster, and more broad-based than in the previous three waves. Current low interest rates—which markets expect to be sustained into the medium term—appear to mitigate some of the risks associated with high debt. However, emerging market and developing economies are also confronted by weak growth prospects, mounting vulnerabilities, and elevated global risks. A menu of policy options is available to reduce the likelihood of the current debt wave ending in crises and, if crises were to take place, to alleviate their impact.

Motivation

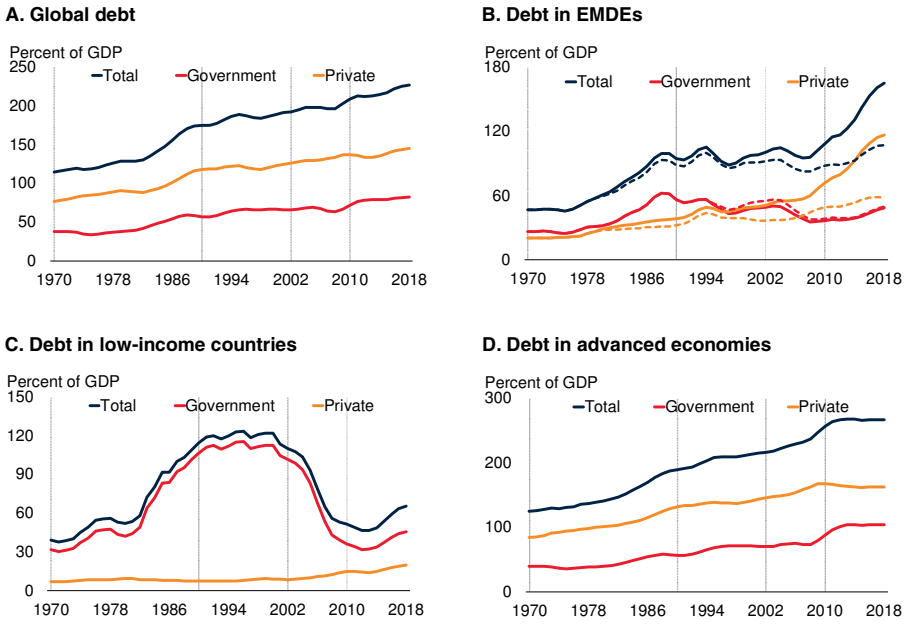
Waves of debt accumulation have been a recurrent feature of the global economy over the past 50 years, involving both advanced economies and emerging market and developing economies (EMDEs). Since the global financial crisis, another wave has been building, with global debt reaching an all-time high of roughly 230 percent of global gross domestic product (GDP) in 2018 (figure 1.1).

Total (public and private) EMDE debt also reached a record high of almost 170 percent of GDP ($55 trillion) in 2018, an increase of 54 percentage points of GDP since 2010. Although China accounted for the bulk of this increase—in part due to its sheer size—the debt buildup was broad-based: In about 80 percent of EMDEs, total debt was higher in 2018 than in 2010. Excluding China (where the rapid debt buildup was mostly domestic), the increase in debt in EMDEs was in almost equal measure accounted for by external and domestic debt. In low-income countries (LICs), following a steep fall between 2000 and 2010, total debt also increased to 67 percent of GDP ($270 billion) in 2018, up from 48 percent of GDP (about $137 billion) in 2010.

In contrast, in advanced economies, total debt has remained near the record levels reached in the early aftermath of the global financial crisis, at about 265 percent of GDP in 2018 ($130 trillion). Whereas government debt has risen, to a high of 104 percent of GDP ($50 trillion), private sector debt has

FIGURE 1.1 Evolution of debt

Global debt has trended up since 1970, reaching about 230 percent of GDP in 2018. Debt has risen particularly rapidly in EMDEs, reaching a peak of about 170 percent of GDP in 2018. Much of the increase since 2010 has occurred in the private sector, particularly in China. Debt in low-income countries has started to rise after a prolonged period of decline following debt-relief measures in the late 1990s and 2000s. Advanced economy debt has been broadly flat since the global financial crisis, with increased government debt more than offsetting a mild deleveraging in the private sector.



Sources: International Monetary Fund; World Bank.
Note: Aggregates calculated using current U.S. dollar GDP weight and shown as a 3-year moving average. Gray vertical lines represent start of debt waves in 1970, 1990, 2002, and 2010. EMDEs = emerging market and developing economies.
B. Dashed lines refer to EMDEs excluding China.

fallen slightly amid deleveraging in some sectors. Total debt has fallen since 2010 in two-fifths of advanced economies.

Debt accumulation in EMDEs has not followed a linear process. Different EMDE regions and sectors have experienced diverse debt developments since 1970. Before the current wave of debt accumulation, EMDEs experienced three waves of broad-based debt accumulation over the period 1970-2009: 1970-89, 1990-2001, and 2002-09. Although each of these waves of rising debt had some unique features, they all shared the same fate: they ended with financial crises and subsequent substantial output losses in many countries.

The current environment of low interest rates, combined with subpar global growth, has led to a lively debate about the benefits and risks of further government debt accumulation to finance increased spending (World Bank 2019).[1] Although the focus of this debate has been mainly on advanced economies, it is also of critical importance for EMDEs. Borrowing can be beneficial for EMDEs, particularly in economies with substantial development challenges, if it is used to finance growth-enhancing investments in areas such as infrastructure, health care, and education. Government debt accumulation can also be appropriate temporarily as part of countercyclical fiscal policy, to boost demand and activity in economic downturns.

High debt carries significant risks, however, particularly for EMDEs because it makes them more vulnerable to external shocks. The rollover of debt can become increasingly difficult during periods of financial stress, potentially resulting in a crisis. High government debt can also limit the size and effectiveness of fiscal stimulus during downturns, and dampen long-term growth by weighing on productivity-enhancing private investment.

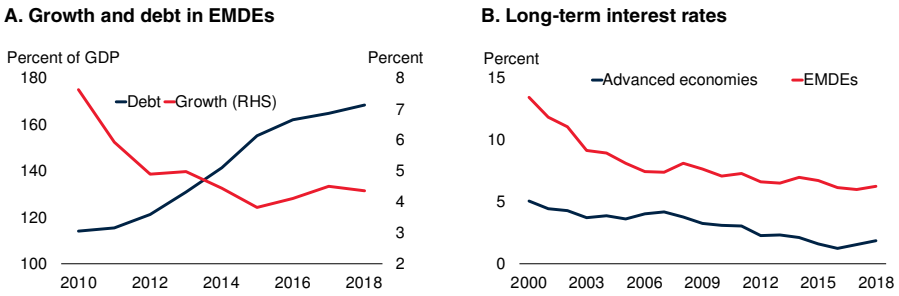
EMDEs have been navigating dangerous waters as the current debt wave has coincided with multiple challenges for these economies (figure 1.2). They have experienced a decade of repeated growth disappointments and are now confronted by weaker growth prospects in a fragile global economy (Kose and Ohnsorge 2019). In addition to their rapid debt buildup during the current wave, these economies have accumulated other vulnerabilities, such as growing fiscal and current account deficits, and a compositional shift toward short-term external debt, which could amplify the impact of shocks. By 2018, the share of EMDE government debt held by nonresidents had grown to 43 percent and foreign currency-denominated EMDE corporate debt had risen to 26 percent of GDP; by 2016, the share of nonconcessional LIC government debt had risen to 55 percent.

Thus, despite current exceptionally low real interest rates, including at long maturities, the latest wave of debt accumulation could follow the historical pattern and eventually culminate in financial crises in EMDEs. A sudden global shock, such as a sharp rise in interest rates or a spike in risk premiums,

[1] Blanchard (2019); Blanchard and Summers (2019); Blanchard and Tashiro (2019); Blanchard and Ubide (2019); Eichengreen et al. (2019); Furman and Summers (2019); Krugman (2019); and Rachel and Summers (2019) discuss reasons for additional borrowing in advanced economies, and the United States in particular. Alcidi and Gros (2019); Auerbach, Gale, and Krupkin (2019); CRFB (2019); Eichengreen (2019); Mazza (2019); Riedl (2019); Rogoff (2019a, 2019b); and Wyplosz (2019) caution against adding to debt.

FIGURE 1.2 Postcrisis debt accumulation, growth, and interest rates

Despite a very fast debt buildup since 2010, EMDE growth has slowed. The current environment of low interest rates mitigates immediate concerns about debt accumulation.



Sources: International Institute of Finance; World Bank.
Note: EMDEs = emerging market and developing economies.
A. Total debt (in percent of GDP) and real GDP growth (GDP-weighted at 2010 prices and exchange rates).
B. Average long-term nominal government bond yields (with 10-year maturities) computed with current U.S. dollar GDP weights, based on 36 advanced economies and 84 EMDEs.

could lead to financial stress in more vulnerable economies. These risks were illustrated by the recent experiences of Argentina and Turkey, which witnessed sudden episodes of sharply rising borrowing costs and severe growth slowdowns. Among LICs, meanwhile, the rapid increase in debt and the shift from concessional toward financial market and non-Paris Club creditors have raised concerns about debt transparency and collateralization. Elevated debt in major EMDEs, including China, could amplify the impact of adverse shocks and trigger a sharp slowdown in these economies, posing risks to global and EMDE growth.

Against this challenging backdrop, this study compares the current wave of debt accumulation to previous episodes, analyzes national episodes of rapid debt accumulation, examines the links between elevated debt levels and financial crises, and offers a menu of policy options.

Contributions to the literature

An extensive literature has explored various aspects of debt accumulation, especially in the context of government and private debt crises. This study adds to this literature in five dimensions.

Analysis of global debt waves. The study provides the first in-depth analysis of the similarities and differences among the four distinct waves of broad-based debt accumulation in EMDEs since 1970. Each wave contains

episodes that have been widely examined in the literature (for example, the Latin American debt crisis and the Asian financial crisis), but they have rarely been put into a common framework. The construct of waves puts national and regional episodes of rapid debt buildup into a common context that takes into account global developments. It also provides a comparative perspective across waves, and facilitates a unified analysis of these episodes that takes into account the interaction of global drivers, such as global growth and financial market developments, with country-specific conditions. Earlier work has typically examined developments in a longer historical perspective and focused mainly on debt developments in advanced economies, usually based on case studies.[2] For EMDEs, previous studies have often analyzed certain periods of debt distress, or crises in individual countries.[3]

Current wave in historical context. Although many studies have documented the recent increase in debt in EMDEs, none has presented developments since the global financial crisis in comparative analysis with previous debt waves. In contrast to other recent work, the study thus puts the current (fourth) wave of debt accumulation in EMDEs into historical perspective.[4]

Detailed study of national episodes of rapid debt accumulation. Spurts of debt buildups are common in EMDEs and, when they coincide, form global waves of debt. The separate analysis of individual episodes offers key insights into the macroeconomic consequences, at the country level, of debt accumulation. The study undertakes the first comprehensive empirical analysis of a large number of individual episodes of rapid government and private debt accumulation in 100 EMDEs since 1970. Earlier work has examined developments in government and private debt markets separately, or focused on a smaller group of (mostly advanced) economies or regions.[5]

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[2] Several studies have examined the impact of mounting government debt in advanced economies (BIS 2015; Cecchetti, Mohanty, and Zampolli 2011; Eberhardt and Presbitero 2015; Eichengreen et al. 2019; Mbaye, Moreno-Badia, and Chae 2018; OECD 2017; Panizza and Presbitero 2014; Reinhart, Reinhart, and Rogoff 2012).

[3] For example, contagion from the Asian crisis has been examined by Baig and Goldfajn (1999); Chiodo and Owyang (2002); Claessens and Forbes (2013); Glick and Rose (1999); Kaminsky and Reinhart (2000, 2001); Kawai, Newfarmer, and Schmukler (2005); Moreno, Pasadilla, and Remolona (1998); and Sachs, Cooper, and Bosworth (1998).

[4] The recent debt accumulation, without the historical context, has been discussed in IMF (2016, 2019) and World Bank (2015, 2016, 2017).

[5] Government debt crises have been discussed in Kindleberger and Aliber (2011); Reinhart, Reinhart, and Rogoff (2012); Reinhart and Rogoff (2011); and World Bank (2019). Private debt accumulation episodes (credit booms) have been examined in Dell'Arricia et al. (2014, 2016); Elekdag and Wu (2013); Jordà, Schularick, and Taylor (2011); Mendoza and Terrones (2008, 2012); Ohnsorge and Yu (2016); and Tornell and Westermann (2005).

Analysis of the links between debt accumulation and financial crises. The study employs an eclectic set of approaches to identify the most frequent triggers of crises and the country-level vulnerabilities that contribute to or exacerbate crises.[6] In addition, it considers selected country cases to illustrate the consequences of rapid debt accumulation that end in crisis.

Menu of policies. Armed with insights from an extensive analysis of the global and national waves of debt accumulation and the empirical links between elevated debt and financial crises, as well as the earlier literature, the study distills lessons and presents a rich menu of policy options that can help EMDEs boost resilience to future crises.

Key findings and policy messages

The book offers a range of analytical findings and policy messages but has three recurring themes.

Unprecedented debt buildup. The postcrisis wave of debt buildup has been unprecedented in its size, speed, and reach in EMDEs. Similar waves in the past half-century led to widespread financial crises in these economies. Accordingly, policy makers must remain vigilant about the risks posed by record-high debt levels.

Precarious protection of low interest rates. Continued low global interest rates provide no sure protection against financial crises. The historical record suggests that borrowing costs could increase sharply—or growth could slow steeply—for a wide range of reasons, including heightened risk aversion and rising country risk premiums. A sudden increase in borrowing costs and associated financial pressures would take place against the challenging backdrop of weak growth prospects, mounting vulnerabilities, and elevated global risks.

Policies matter. Robust macroeconomic, financial, and structural policies can help countries strike the right balance between the costs and the benefits of debt accumulation. Such policies are also critical to help reduce the likelihood of financial crises and alleviate their impact, if they erupt. Although many EMDEs have better policy frameworks now than during previous debt waves, there remains significant room for improvement.

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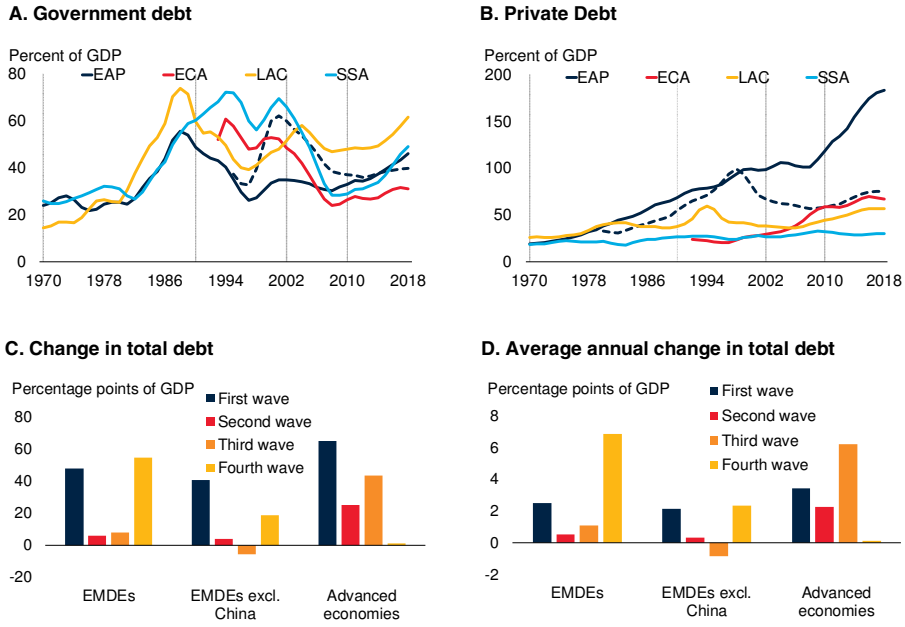
[6] The econometric model builds on an extensive literature on early warning systems. See Chamon and Crowe (2012); Frankel and Saravelos (2012); and Kaminsky, Lizondo, and Reinhart (1998) for reviews of the early warning literature. Berg, Borensztein, and Patillo (2005) review the performance of early warning models.

FIGURE 1.3 Debt in EMDEs

The region and sector of debt accumulation have varied substantially over the four debt waves (1970-1989, 1990-2001, 2002-09, and since 2010). The latest wave of debt began in 2010 and has already seen the largest, fastest, and most broad-based increase in debt in EMDEs. It reached across almost all EMDE regions and encompassed both government and private borrowing.



Sources: International Monetary Fund; World Bank.
Note: EAP = East Asia and Pacific; ECA = Europe and Central Asia; EMDEs = emerging market and developing economies; LAC = Latin America and the Caribbean; SSA = Sub-Saharan Africa.
A.B. Averages computed with current U.S. dollar GDP as weight and shown as a 3-year moving average. Dashed lines for EAP refer to EAP excluding China. Lines for ECA start in 1995 because of smaller sample size before that year. Vertical lines in gray are for years 1970, 1990, 2002, and 2010.
C.D. First wave covered the period 1970-89; second wave from 1990 to 2001; third wave from 2002 to 2009; and fourth wave from 2010 onward. EMDEs includes 147 economies.
C. Change in total debt from the start to the end of each wave.
D. Rate of change calculated as total increase in debt-to-GDP ratios over the duration of a wave, divided by the number of years in a wave.

Previous global waves of debt: Similar yet different

The buildup of EMDE debt to record-high levels in 2018 has not been a linear process. Different EMDE regions and sectors have experienced diverse debt developments. Four waves of broad-based debt buildup have occurred in EMDEs since 1970 (figure 1.3). The first (1970-89) occurred mainly in Latin America and the Caribbean (LAC) and LICs, especially in Sub-Saharan Africa (SSA); the second (1990-2001) was concentrated in East Asia and Pacific (EAP) but also involved some EMDEs in Europe and Central Asia

(ECA) and LAC; and the third (2002-09) occurred chiefly in ECA. The fourth wave (2010 onward), in contrast, has covered all EMDE regions.

The three previous waves displayed several significant similarities. They all began during prolonged periods of very low real interest rates and were often facilitated by changes in financial markets that contributed to rapid borrowing. The three past waves all ended with widespread financial crises and coincided with global recessions (1982, 1991, and 2009) or downturns (1998 and 2001). These crises were often triggered by shocks that resulted in a sharp increase in borrowing cost stemming from either an increase in investor risk aversion and risk premiums or a tightening of monetary policy in advanced economies. These crises typically featured sudden stops of capital flows. They usually led not only to economic downturns and recessions but also to reforms designed to lower external vulnerabilities and strengthen policy frameworks. In many EMDEs, inflation-targeting monetary policy frameworks and greater exchange rate flexibility were introduced, fiscal rules were adopted, and financial sector regulation and supervision were strengthened.

These similarities notwithstanding, the waves differed in some fundamental dimensions. The financial instruments used for borrowing shifted over time as new instruments or financial actors emerged. The nature of EMDE borrowers on international financial markets has changed, with the private sector accounting for a growing share of borrowing through the first three waves. The severity of the economic damage done by the financial crises that ended the first three waves also varied across the waves, and across regions. Output losses were particularly large in the first wave, when the majority of debt accumulation was in the government sector and debt resolution was protracted.

The current wave: Biggest, with vulnerabilities

The debt accumulation in EMDEs since 2010 has already been larger, faster, and more broad-based than in the previous three waves (figure 1.3). Since 2010, EMDE debt has risen by almost 7 percentage points of GDP per year, on average. The debt buildup in China has accounted for the bulk of the average EMDE debt increase, was much faster than that in the third wave, and was predominantly (more than four-fifths of the total debt buildup) in the private sector. Whereas previous waves were considerably more pronounced in some regions than in others, the fourth wave has been global, with total debt rising in about 80 percent of EMDEs and by at least 20 percentage points of GDP in just over one-third of EMDEs. In the current wave, most national episodes of debt accumulation have involved both

government and private debt accumulation, in contrast to the previous three waves, when the buildup was concentrated in one of the two sectors.

In other aspects, the current wave of debt accumulation bears resemblances to the earlier ones. As in the previous waves, interest rates have been very low during the current wave, and the search-for-yield environment has contributed to falling spreads for EMDEs. Some major changes in financial markets have again boosted borrowing: they include a growing role of regional banks, a growing appetite for local currency bonds, and increased demand for EMDE debt from the expanding shadow banking sector. As in earlier waves, vulnerabilities have mounted during the current one, with a shift to riskier debt instruments, including greater reliance on financial markets and non-Paris Club bilateral lenders (particularly in LICs).

National debt buildups: Harbinger of crises?

Spurts of debt buildup are common in EMDEs, and when they coincide they form the global waves of debt discussed previously. Separate from the global waves of debt, the national episodes of debt accumulation offer a wealth of insights into macroeconomic developments during periods of rapid debt accumulation. Since 1970, there have been 519 national episodes of rapid debt accumulation in 100 EMDEs (figure 1.4).[7] The duration of a typical debt accumulation episode is seven to eight years. The median debt buildup from the beginning of the episode to peak debt is twice as large for government debt (30 percentage points of GDP) as for private debt (15 percentage points of GDP).

About half of these national episodes were associated with a financial crisis, with sizeable economic costs. Eight years after the beginning of a *government* debt accumulation episode, output in episodes with crises was about 10 percent lower than in episodes without a crisis, whereas investment was 22 percent lower. Similarly, eight years after the beginning of a *private* debt accumulation episode, output was 6 percent and investment 15 percent lower in episodes with crises than in those without a crisis. Thus, crises associated with rapid *government* debt buildups tended to feature larger output losses than crises associated with rapid *private* debt buildups.

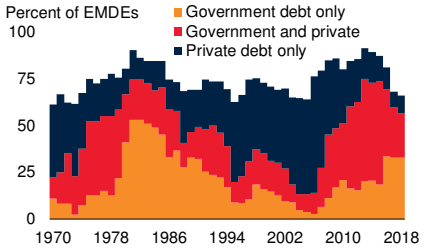
Although financial crises were often triggered by external shocks, such as sudden increases in global interest rates, during rapid debt accumulation

[7] A national episode of rapid debt accumulation is defined as a period during which the government debt-to-GDP ratio or the private sector debt-to-GDP ratio rises from trough to peak by more than one (country-specific) 10-year rolling standard deviation.

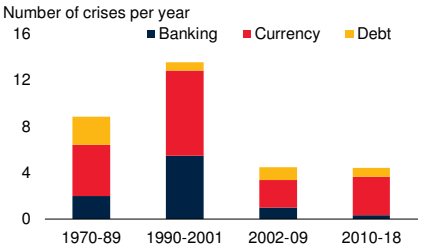
FIGURE 1.4 Debt and financial crises

Financial crises have been a recurrent feature of rapid debt accumulation episodes—in EMDEs, more than half of the episodes have involved a crisis, at substantial macroeconomic cost.

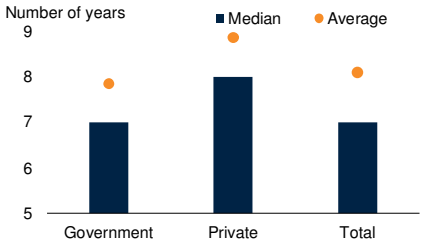
A. Share of EMDEs in rapid debt accumulation episodes



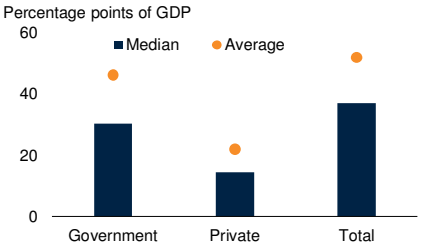
B. Crises during debt waves



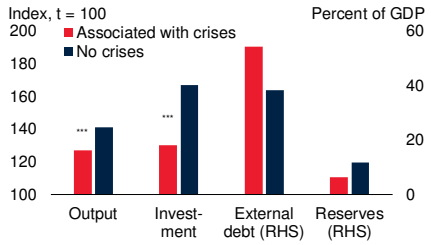
C. Duration of rapid debt accumulation episodes in EMDEs



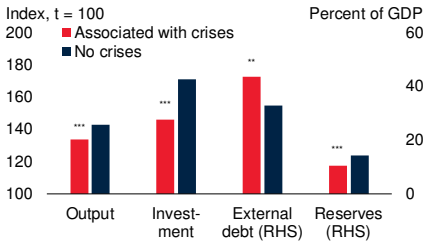
D. Change in debt during rapid debt accumulation episodes in EMDEs



E. Outcomes of rapid government debt accumulation episodes after eight years



F. Outcomes of rapid private debt accumulation episodes after eight years



Sources: Federal Reserve Economic Data; International Monetary Fund; Laeven and Valencia (2018); World Bank.
Note: EMDEs = emerging market and developing economies.
A. Share of EMDEs which are in rapid debt accumulation episodes.
B. Number of crises in a specific wave divided by the number of years in a wave.
E.F. Median based on balanced samples. Year "t" refers to the beginning of rapid government debt accumulation episodes (Appendix A). Episodes associated with crises are those that experienced financial crises (banking, currency, and debt crises) during or within two years after the end of episodes. The information on crises is taken from Laeven and Valencia (2018). "*", "**", and "***" denote that medians between episodes associated with crises and those with no crises are statistically different at 10 percent, 5 percent, and 1 percent levels, respectively, based on Wilcoxon rank-sum tests.

episodes, domestic vulnerabilities often increased the likelihood of crises and amplified their adverse impact. Most countries where crises erupted suffered from unsustainable combinations of inadequate fiscal, monetary, or financial policies. Crises were more likely, and the economic distress they caused was more severe, in countries with higher external debt—especially short-term—and lower levels of international reserves. When both government and private debt rose together—as they have in the current wave—the likelihood of a currency crisis was higher than when government or private debt accumulated individually.

Looking forward: Will history repeat itself?

The current wave has already seen a substantial increase in debt in many EMDEs (figure 1.5). In one-quarter of EMDEs, the buildups of government or private debt in the current wave have already exceeded those of the typical historical episode. In some EMDEs, private debt has risen more than twice as much (by 30 percentage points of GDP) as in the median historical episode.

EMDEs need to chart a course through troubled waters as the current debt wave evolves. They face weaker growth prospects because of multiple structural headwinds. They also have pressing investment needs to achieve development goals and improve living standards. The challenge for EMDEs is to find the right balance between taking advantage of the present low interest rate environment and avoiding the risks posed by excessive debt accumulation.

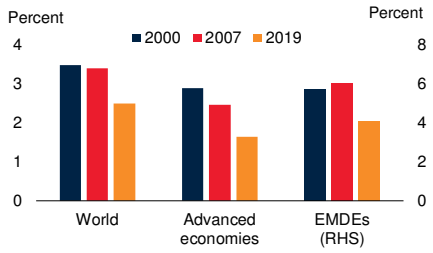
On the upside, the current financial environment appears to alleviate some risks associated with the ongoing debt wave. In particular, global interest rates are very low, and are expected to remain low for the foreseeable future. In addition, many EMDEs have better fiscal, monetary, and financial sector policy frameworks now than they had during the previous debt waves. A wide range of reforms has been undertaken since the crisis to make the global financial system more resilient. The global financial safety net has also expanded over the past decade.

However, in addition to their historically large debt buildup during the current wave, EMDEs have accumulated other vulnerabilities that could amplify the adverse impact of financing shocks and cause debt distress. A sizable number of EMDEs now have not just higher total debt but also higher external debt, higher short-term debt, and lower reserves, as well as wider fiscal and current account deficits, than at the peak of the third wave of debt accumulation.

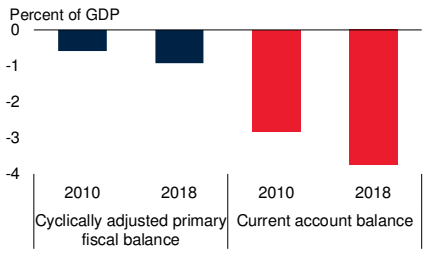
FIGURE 1.5 Prospects and vulnerabilities in EMDEs

Long-term growth prospects have slowed substantially from precrisis rates. Since 2010, fiscal and current account balances have weakened in EMDEs while debt has risen above or near levels in past episodes of rapid debt accumulation.

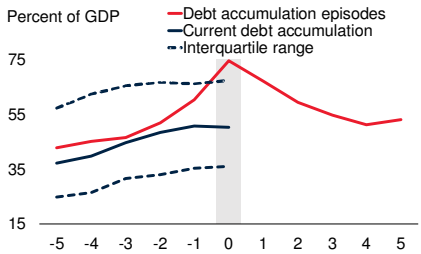
A. Consensus long-term growth forecasts



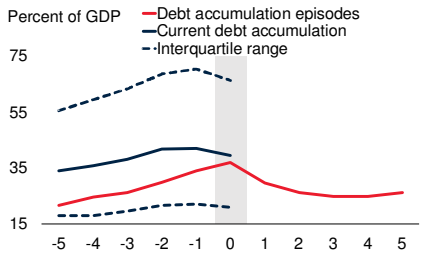
B. Current account and fiscal balances



C. Current levels of government debt versus previous rapid debt accumulation episodes



D. Current levels of private debt versus previous rapid debt accumulation episodes



Sources: Consensus Economics; International Monetary Fund; Laeven and Valencia (2018); World Bank.
Note: EMDEs = emerging market and developing economies.
A. Bars show long-term (10 years ahead) average annual growth forecasts surveyed in respective years. Sample comprises 38 economies—20 advanced economies (AEs) and 18 EMDEs—for which Consensus forecasts are consistently available during 1998-2018. Aggregate growth rates calculated using constant 2010 U.S. dollar GDP weights.
B. Unweighted averages for current account balance and cyclically adjusted primary balance based on data for 152 EMDEs.
C.D. Median levels of debt during debt accumulation episodes, as defined in Appendix A. t=0 indicates the peak of debt accumulation episodes that were completed before 2018. For current debt accumulation, t=0 indicates 2018.

Debt distress could be triggered by unexpected, sustained jumps in global interest rates or in risk premiums. In a highly uncertain global environment, EMDEs face a wide range of risks, including the possibility of disruptions in advanced economy financial markets, steep declines in commodity prices, increased trade tensions, and a sudden deterioration in corporate debt markets in China. If any of these risks were to materialize, they could lead to a sharp rise in global interest rates or risk premiums or weakening growth and, in turn, trigger debt distress in EMDEs. Furthermore, one of the lessons from previous crises is that shocks tend to come from unexpected sources. Thus, low or even falling global interest rates provide only a precarious protection against financial crises.

Although EMDEs have gone through periods of volatility during the current wave of debt accumulation, they have not experienced widespread financial crises. A multitude of factors will determine the future evolution of the current wave. The key unknown is whether the current wave will end in financial crises in many EMDEs, as previous waves did, or whether EMDEs have learned the lessons from the previous waves and will prevent history from repeating itself.

Policies: They matter!

Although no magic bullet of a policy prescription exists to ensure that the current debt wave proceeds smoothly, the experience of past waves of debt points to the critical role of policy choices in determining the outcomes of these episodes. A menu of policy options is available to reduce the likelihood that the current debt wave will end, if crises were to take place, to alleviate their impact.

First, higher government or private debt and a riskier composition of debt (in terms of maturity, currency denomination, and creditors) are associated with a higher probability of crisis. Hence, sound debt management and debt transparency will help reduce borrowing costs, enhance debt sustainability, and contain fiscal risks. Creditors, including international financial institutions, can spearhead efforts in this area by encouraging common standards and highlighting risks and vulnerabilities through timely analytical and surveillance work.

Second, strong monetary, exchange rate, and fiscal policy frameworks can safeguard EMDEs' resilience in a fragile global economic environment. The benefits of stability-oriented and resilient monetary policy frameworks cannot be overstated. Flexible exchange rates can discourage a buildup of large currency mismatches and reduce the likelihood of large exchange rate misalignments. Fiscal rules can help prevent fiscal slippages, ensure that revenue windfalls during times of strong growth are prudently managed, and contain and manage risks from contingent liabilities. Revenue and expenditure policies can be adjusted to expand fiscal resources for priority spending.

Third, robust financial sector regulation and supervision can help recognize and act on emerging risks. Financial market deepening can help mobilize domestic savings that may provide more stable sources of financing than foreign borrowing.

Fourth, in several crisis cases, it became apparent that borrowed funds had been diverted toward purposes that did not raise export proceeds or

productivity or potential output. Apart from effective public finance management, policies that promote good corporate governance can help ensure that debt is used for productive purposes. Sound bankruptcy frameworks can help prevent debt overhangs from weighing on investment for prolonged periods.

Synopsis

Chapter 2 briefly reviews the literature on the costs and benefits of debt accumulation. Chapter 3 presents a global perspective of debt accumulation, examining the three historical waves of broad-based debt accumulation in EMDEs and documenting differences and similarities across these waves. Chapter 4 puts the current wave in historical perspective. Chapter 5 employs multiple approaches to explore the links between debt accumulation and financial crises. Chapter 6 concludes with a discussion of the potential trajectory of the current debt wave, the main lessons and policy messages, and areas for future research.

The remainder of this introductory chapter summarizes each subsequent chapter: it presents that chapter's motivation and contribution to the literature, main questions it explores, and its main findings.

Chapter 2. Benefits and Costs of Debt: The Dose Makes the Poison

Amid record-high global debt, low interest rates and subpar growth have led to an intense debate on whether the recent rapid increase in debt is reason for concern. Some argue that countries, especially those that issue reserve currencies, should take advantage of low interest rates to borrow more to finance priority expenditures.[8] Others caution that high debt weighs on long-term growth, by increasing the risk of crises, limiting the scope for countercyclical fiscal stimulus, and dampening private investment.[9]

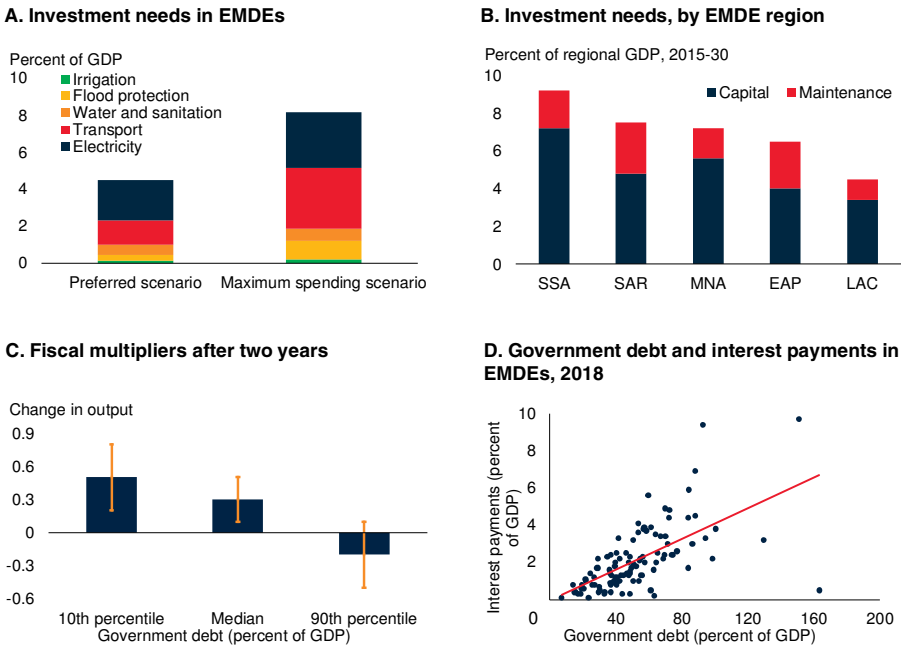
Although the focus of this debate has been mainly on advanced economies, EMDEs face similar issues. Many of these economies have also borrowed heavily and, in many cases, hard-won reductions in public debt ratios before

[8] Blanchard (2019); Blanchard and Summers (2019); Blanchard and Tashiro (2019); Blanchard and Ubide (2019); Eichengreen et al. (2019); Furman and Summers (2019); Krugman (2019); and Rachel and Summers (2019) discuss reasons for additional borrowing in advanced economies, and the United States in particular.

[9] Alcidi and Gros (2019); Auerbach, Gale, and Krupkin (2019); CRFB (2019); Eichengreen (2019); Mazza (2019); Riedl (2019); Rogoff (2019a, 2019b); and Wyplosz (2019) caution against adding to debt.

FIGURE 1.6 Potential benefits and costs of debt

EMDEs have large investment needs to meet development goals, which can be financed by debt; however, high debt levels limit the ability of governments to support economic activity during recessions and blunt the effectiveness of fiscal stimulus. High debt is also associated with high interest payments.



Sources: Huidrom et al. (2019); Rozenberg and Fay (2019); World Bank.

Note: EAP = East Asia and Pacific; EMDEs = emerging market and developing economies; LAC = Latin America and the Caribbean; MNA = Middle East and North Africa; SAR = South Asia; SSA = Sub-Saharan Africa.

A. Bars show average annual aggregate spending needs during 2015-30. "Preferred scenario" is constructed assuming ambitious goals and high spending efficiency, and "maximum spending scenario" assuming ambitious goals and low spending efficiency. Country sample includes low- and middle-income countries.

B. Bars show average annual spending needs during 2015-30. Estimates are generated using policy assumptions that cap investment needs at 4.5 percent of lower-middle-income countries' GDP per year (that is, the "preferred scenario" in panel A).

C. Bars show the conditional fiscal multipliers for different levels of government debt after two years. Fiscal multipliers are defined as cumulative change in output relative to cumulative change in government consumption in response to a 1-unit government consumption shock. They are based on estimates from the interacted panel vector autoregression model, where model coefficients are conditioned only on government debt. X-axis values correspond to the 10th to 90th percentiles in the sample. Bars represent the median, and vertical lines are the 16-84 percent confidence bands.

D. Total (external and domestic) government debt versus total (external and domestic) government interest payments (both in percent of GDP), in 2018.

the global financial crisis have largely been reversed over the past decade. The trade-offs EMDEs face are actually even starker, in light of their histories of severe debt crises even at lower levels of debt than in advanced economies and their more pressing spending needs to achieve development goals and improve living standards (figure 1.6).

Chapter 2 briefly reviews the literature on debt to provide a basis for assessing the merits of additional debt accumulation in EMDEs. Specifically, it addresses three questions:

- What are the benefits of debt accumulation?
- What are the costs associated with debt accumulation?
- What is the optimal level of debt?

The chapter brings together the main themes of theoretical and empirical studies on both government and private debt to provide answers to the three questions. Although it cannot do justice to the rich literature on debt, the chapter sets the stage for the discussion in subsequent chapters that describe the evolution of global waves of debt, puts the current debt wave into historical context, and examines the relationship between debt buildups and financial crises.

Chapter 2 reports two main findings. First, debt accumulation offers both benefits and costs. The benefits depend heavily on how productively the debt is used, the cyclical position of the economy, and the extent of financial market development. The costs of debt include interest payments, the possibility of debt distress, constraints that debt may impose on policy space and effectiveness, and the possible crowding out of private sector investment.

Second, there is no generally applicable optimal level of debt, either for advanced economies or for EMDEs. Optimal levels of debt depend on country characteristics, financial market conditions, the behavior of governments and private agents, and the multiple functions of debt.

Chapter 3. Global Waves of Debt: What Goes up Must Come Down?

Total (domestic and external) debt of public and private nonfinancial sectors in EMDEs has increased dramatically over the past half-century. The trajectory of debt accumulation, however, has not been smooth. Individual countries have frequently undergone episodes of rapid debt accumulation, by either the public sector or the private sector or both. These episodes sometimes ended in financial crises, which were followed by prolonged periods of deleveraging. Similarly, the characteristics of debt have changed over time, with the importance of external debt waxing and waning, and the types of debt instruments used also evolving.

Different EMDE regions and sectors have experienced diverse debt developments since 1970. In some regions, there have been waves of

debt buildups where many countries simultaneously saw sharp increases in debt, often followed by crises and steep declines in debt ratios. For example, government debt increased sharply in LAC and SSA in the 1970s and 80s, but peaked in the late 1980s in LAC and in the late 1990s in SSA, before falling. By contrast, the EAP region (excluding China) saw a buildup in private debt in the 1990s, which unwound from 1997 onward. In the aftermath of the global financial crisis, the EAP region (this time mainly driven by China) has once again seen a rapid accumulation of private debt.

Chapter 3 examines the evolution of debt in EMDEs and identifies "waves" of rising debt—periods in which growth in debt has been broad-based across many countries in one or more regions. The waves of rising debt in EMDEs occurred in the periods 1970-89, 1990-2001, 2002-09, and the current period, beginning in 2010.

The identification of the waves meets some basic criteria. The end of a wave is broadly defined as the year when the total debt-to-GDP ratio in the region or country group concerned peaks and is followed by two consecutive years of decline. The dating of the end of waves is also approximately consistent with the timing of policies to resolve the financial crises that they engendered. In principle, waves could be overlapping (indeed, developments in LIC debt reached across all three waves), but there are visible surges followed by plateaus or declines in regional EMDE debt. The identification of the waves takes these turning points as convenient starting and end points for the episodes.

Using the framework of global waves of debt, the chapter answers the following questions in the context of the first three, completed waves of debt buildup:

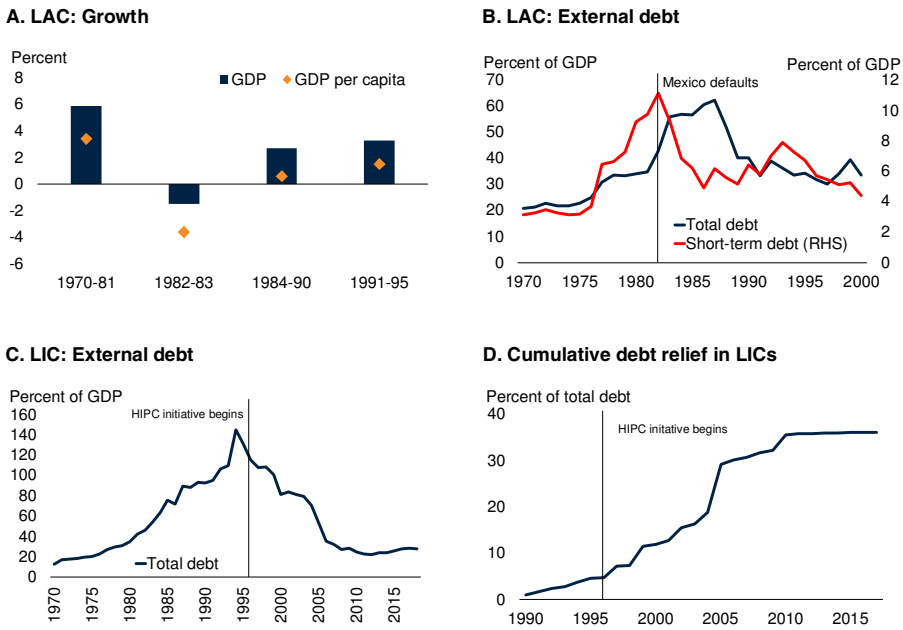
- How did the three historical waves of debt evolve?
- What were the similarities between the waves?
- How did the waves differ?

The chapter provides the first in-depth analysis of the similarities and differences among the three historical waves of broad-based debt accumulation in EMDEs since 1970. It identifies the following debt waves in EMDEs before the current wave.

- The first wave spanned the 1970s and 1980s, with borrowing primarily accounted for by governments in LAC and LICs, especially in SSA. The combination of low real interest rates in much of the 1970s and a rapidly growing syndicated loan market encouraged EMDE governments to

FIGURE 1.7 The first wave of debt

The 1970s were a period of rapid growth for many LAC, but external debt grew sharply to unsustainable levels. The debt-to-GDP ratio in LICs also rose steadily from the 1970s to the early 1990s. As debt levels and interest payments became unsustainable, many LICs fell into arrears and requested rescheduling.



Sources: Haver Analytics; International Monetary Fund; Organisation for Economic Co-operation and Development; World Bank.
Note: HIPC = Heavily Indebted Poor Countries (Initiative); LAC = Latin America and the Caribbean; LICs = low-income countries.
A. GDP weighted average across 32 LAC countries.
B. Short-term debt has maturity of less than 12 months. Sample includes 24 countries.
C. Sample includes 29 LICs, defined as countries with a gross national income per capita of $1,005 or less in 2016.
D. Cumulative debt relief since 1990, as a share of total debt in 1996, when the HIPC initiative began.

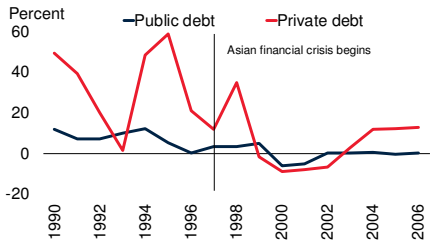
borrow heavily (figure 1.7). This debt buildup culminated in a series of crises in the early 1980s. Debt relief and restructuring were prolonged in this wave, ending with the introduction of the Brady plan in the late 1980s, mostly for LAC countries, and debt relief in the form of the Heavily Indebted Poor Countries initiative and Multilateral Debt Relief Initiative in the mid-1990s and early 2000s for LICs.

- The second wave ran from 1990 until the early 2000s as financial and capital market liberalization enabled banks and corporations in EAP and governments in ECA to borrow heavily; it ended with a series of crises in these regions in 1997-2001 (figure 1.8).

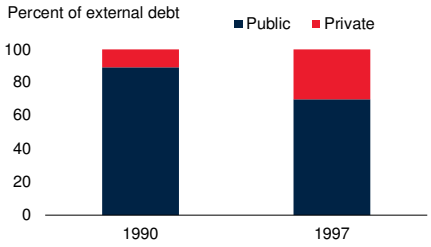
FIGURE 1.8 The second and third waves of debt

In the second wave, external debt soared in EAP in the early to mid-1990s, particularly private sector debt, often at short maturities. In the third wave, benign financing conditions and financial sector deregulation in advanced economies fueled cross-border lending and precrisis credit booms, particularly in ECA.

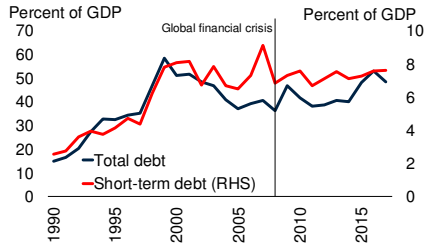
A. EAP: Growth in external debt



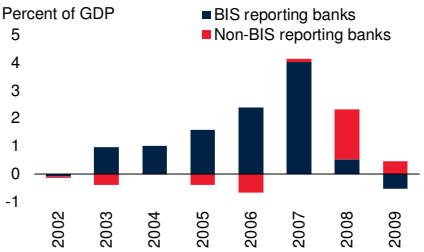
B. EAP: Sectoral distribution of external debt



C. ECA: External debt



D. Cross-border lending to EMDEs



Source: World Bank.

Note: BIS = Bank for International Settlements; EAP = East Asia and Pacific; ECA = Europe and Central Asia; EMDEs = emerging market and developing economies; IMF = International Monetary Fund.

A.B. Includes long-term external debt only.

A. Negative values indicate declining external debt in U.S. dollar terms.

D. Offshore financial centers are excluded. Based on data for 86 EMDEs excluding China. BIS data are from the BIS locational banking statistics and represent changes in stock of claims on EMDEs. Lending by non-BIS banks is calculated as total bank loans and deposits from the IMF Balance of Payment Statistics minus cross-border lending by BIS reporting banks. Cross-border lending flows as a percentage of GDP are shown as total for all countries in the sample divided by their aggregate GDP.

- The third wave was a runup in private sector borrowing in ECA from European Union-headquartered "mega-banks" after regulatory easing. This wave ended when the global financial crisis and the euro area debt crisis disrupted bank financing in 2008-09 and tipped several ECA economies into deep (albeit short-lived) recessions.

The chapter distills similarities among these three debt waves. The three waves of debt began during prolonged periods of low real interest rates, and were often facilitated by financial innovations or changes in financial markets that promoted borrowing. The waves ended with widespread financial crises

and coincided with global recessions (1982, 1991, and 2009) or downturns (1998 and 2001). These episodes were typically triggered by shocks that resulted in sharp increases in investor risk aversion, risk premiums, or borrowing costs, followed by sudden stops of capital inflows. The financial crises were generally costly. They were usually followed by reforms designed to lower financial vulnerabilities and strengthen policy frameworks. In some EMDEs, various combinations of inflation targeting, greater exchange rate flexibility, and fiscal rules were introduced, and financial sector supervision was strengthened.

The chapter also points to important differences among the three completed waves. The financial instruments used for borrowing have evolved as new instruments or financial actors have emerged. The nature of EMDE borrowers in international financial markets has changed, with the private sector accounting for a growing share of debt accumulation through the three waves. The severity of the economic damage done by the financial crises that ended the waves varied among them, and across regions. Output losses were particularly large in the wake of the first wave, when most debt accumulation had been by government sectors.

Chapter 4. The Fourth Wave: Ripple or Tsunami?

The current global wave of debt, which started in 2010, has already seen the largest, fastest, and most broad-based increase in debt in EMDEs in the past 50 years. Despite the recent prolonged period of very low interest rates, there is a risk that the latest wave of debt accumulation may follow the historical pattern of its predecessors and result in widespread financial crises.

Chapter 4 examines the current wave and puts it in historical context by considering the following questions:

- How has debt evolved in the fourth wave?
- What factors have contributed to debt accumulation during the fourth wave?
- What are the similarities and differences between the fourth wave and the previous waves over the past half-century?

In contrast to earlier studies, chapter 4 puts the current wave of broad-based debt accumulation in EMDEs into historical perspective. Earlier work has recognized the steep postcrisis increase in debt in certain regions or groups of countries. For example, some studies have examined mounting government debt in advanced economies. There has also been considerable interest in the

postcrisis increase in debt in EMDEs, including low-income and lower-middle-income countries (Essl et al. 2019; World Bank and IMF 2018a, 2018b). Again, however, these studies have documented the postcrisis growth of debt without the historical lens of the global waves framework.

The chapter reports three major results. First, the latest wave began in 2010 and has already seen the largest, fastest, and most broad-based increase in debt in EMDEs in the past 50 years. The average annual increase in EMDE debt since 2010, of almost 7 percentage points of GDP, has been larger by some margin than in each of the previous three waves. Also, whereas previous waves were largely regional in nature, the fourth wave has been global, with total debt rising in about 80 percent of EMDEs and by at least 20 percentage points of GDP in more than one-third of EMDEs (figure 1.9).

Second, the current wave of debt accumulation bears many resemblances to the three previous waves. Interest rates in advanced economies have been very low since the global financial crisis, and search for yield by investors has contributed to narrowing spreads for EMDEs. Some major structural changes in financial markets have again boosted borrowing, including through a rise of regional banks, growing appetite for local currency bonds, and increased demand for EMDE debt from the expanding shadow banking sector. As in the earlier waves, mounting vulnerabilities have become apparent as the current wave has proceeded, with a shift to riskier debt instruments and an increasing reliance on non-Paris Club bilateral lenders, particularly in LICs. In addition, fiscal and external deficits have increased in many EMDEs since 2010.

Third, the fourth wave has been different from the previous episodes in terms of the size, speed, and reach of debt accumulation in EMDEs. Meanwhile, multiple reforms have increased the resilience of the international financial system, and global financial safety nets have been expanded and strengthened since the global financial crisis. Many EMDEs have improved their macroeconomic and prudential policy frameworks over the past two decades. In contrast to previous waves, the current wave has been set against a backdrop of broadly stable advanced economy debt ratios.

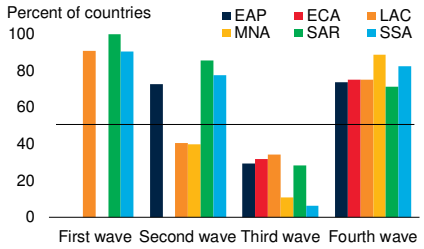
Chapter 5. Debt and Financial Crises: From Euphoria to Distress

EMDEs experience recurrent episodes of rapid debt accumulation. When they take place in tandem in many economies, these national episodes turn into global waves of debt. Whereas the two earlier chapters examined global waves of debt, this chapter turns its attention to the implications of rapid

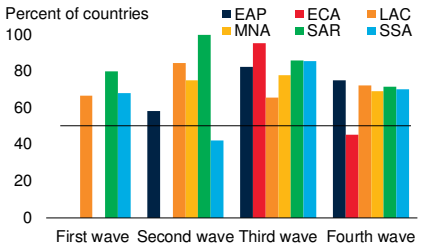
FIGURE 1.9 The fourth wave of debt

The fourth wave has seen the most broad-based increase yet in debt across regions and borrowing sectors. Both government and private debt have shifted toward riskier funding sources. The increase in government debt has been accompanied by a growing share of nonresident investors, whereas corporations increased borrowing in foreign currencies.

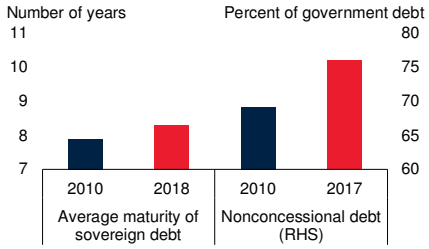
A. Countries with increase in government debt, by region



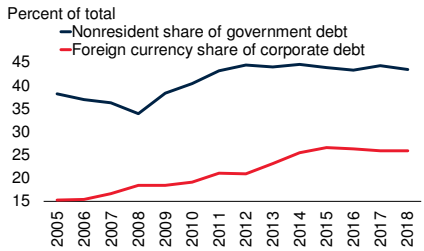
B. Countries with increase in private debt, by region



C. Average maturity and nonconcessional debt in EMDEs



D. Nonresident share of government debt, foreign currency share of corporate debt



Sources: Bank for International Settlements; Institute of International Finance; International Monetary Fund; World Bank.
Note: EAP = East Asia and Pacific; ECA = Europe and Central Asia; EMDEs = emerging market and developing economies; LAC = Latin America and the Caribbean; MNA = Middle East and North Africa; SAR = South Asia; SSA = Sub-Saharan Africa.
A.B. Charts show the share of countries where the debt-to-GDP ratio increased over the duration of the wave. Regions are excluded if available country-level data cover less than one-third of the full region.
C. Median of 35 EMDEs.
D. Nonresident share of government debt is average for 45 EMDEs, with a smaller sample size for earlier years. Foreign currency share of corporate debt of average for 21 EMDEs.

debt accumulation at the country level. Rising or elevated debt levels increase a country's vulnerability to financing shocks, which can culminate in financial crises, with large and lasting effects on economic activity.

Chapter 5 provides a more granular perspective on the causes and consequences of debt accumulation by addressing the following questions:

- What are the main features of national episodes of rapid debt accumulation?
- What are the empirical links between debt accumulation and financial crises?

- What are the major institutional and structural weaknesses associated with financial crises?

The chapter makes several novel contributions to an extensive literature on the links between debt and financial crises, as reviewed in chapter 2. First, the chapter undertakes the first comprehensive empirical study of a large number of national rapid government and private debt accumulation episodes in a large number of EMDEs since 1970. It not only considers what happens during the financial crises associated with rapid debt accumulation episodes but also examines how macroeconomic and financial aggregates evolve over the entire debt accumulation episode.

Second, the chapter expands on earlier empirical studies of the correlates of crises by analyzing the links between debt accumulation and financial crises in a single empirical framework and by extending the horizon of analysis to cover the four global waves of debt accumulation. Finally, it presents a comprehensive review of country case studies of rapid debt accumulation episodes associated with financial crises. Based on a literature review that extracts common themes from a large set of country case studies, this complementary qualitative approach helps identify the major structural and institutional weaknesses associated with financial crises.

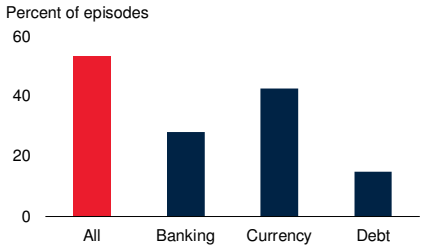
Chapter 5 presents five main results. First, since 1970, there have been 519 national episodes of rapid debt accumulation in 100 EMDEs. These episodes have been common, because three-quarters of EMDEs were in either a government or a private debt accumulation episode or both in the average year. The duration of a typical government debt accumulation episode is seven years and private debt episode is about eight years. The median debt buildup during a government debt accumulation episode (30 percentage points of GDP) tended to be considerably larger than that during a private debt episode (15 percentage points of GDP).

Second, about half of the national debt accumulation episodes were accompanied by a financial crisis (figure 1.10). Crises were particularly common during the first and second global waves: of all episodes that concluded in these two waves, almost two-thirds were associated with crises. National debt episodes that coincided with crises were typically associated with greater debt buildups, weaker economic outcomes, and larger macroeconomic and financial vulnerabilities than were noncrisis episodes. Crises during rapid government debt buildups featured significantly larger output losses than crises during rapid private debt buildups: in the case of government (private) debt, after eight years, the level of GDP in episodes with crises was about 10 (6) percent lower than in episodes without crisis and investment was 22 (15) percent lower.

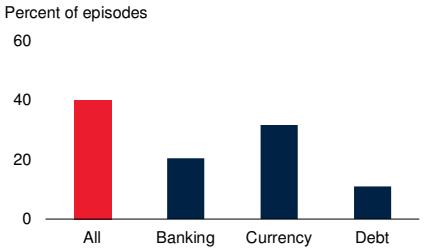
FIGURE 1.10 Debt and financial crises

About half of all episodes of government and private debt accumulation during 1970-2018 were associated with financial crises, typically multiple types of crises. Episodes associated with financial crises featured significantly larger government debt increases (by 4 percentage points of GDP). Eight years after the start of the rapid government debt accumulation episode, episodes associated with financial crises had lower output (by 11 percent).

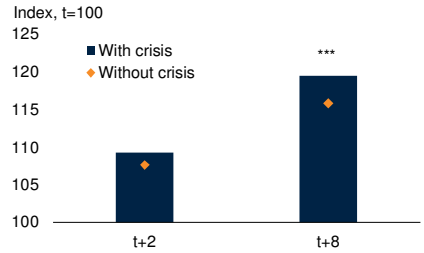
A. Government debt accumulation episodes associated with crises



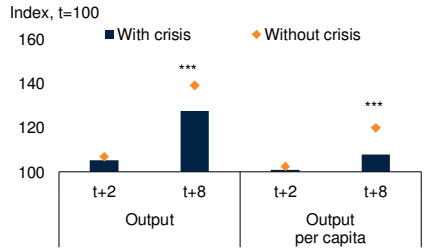
B. Private debt accumulation episodes associated with crises



C. Debt during government debt accumulation episodes



D. Output and per capita output during government debt accumulation episodes



Sources: International Monetary Fund; Laeven and Valencia (2018); World Bank.

A.B. Episodes associated with crises are those that experience financial crises (that is, banking, currency, and debt crises, as in Laeven and Valencia 2018) during or within two years after the end of episodes. For definition of episodes and sample, see Appendix A.

C.D. Medians for pooled government and private episodes with data available for at least 8 years from the beginning of the episode. Year "t" refers to the beginning of rapid private or government debt accumulation episodes. All variables are scaled to 100 at t=0. Episodes associated with crises are those that experience financial crises (that is, banking, currency, and debt crises, as in Laeven and Valencia 2018) during or within two years after the end of episodes. *, **, and *** denote that medians between episodes associated with crises and those with no crises are statistically different at 10 percent, 5 percent, and 1 percent levels, respectively, based on Wilcoxon rank-sum tests.

C. Cumulative change in government debt in percentage points of GDP, rebased to 100 at the start of the government debt accumulation episode (t).

D. Based on cumulative real growth rates for output and output per capita from the start of the government debt accumulation episode.

Third, an increase in debt, either government or private, was associated with a significantly higher probability of crises in the following year. Over and above this increase, combined accumulation of both government and private debt resulted in a higher likelihood of a currency crisis compared to debt increases that were solely government or solely private.

Fourth, although external shocks, such as sudden increases in global interest rates, typically triggered financial crises during national debt accumulation episodes, domestic vulnerabilities often amplified the adverse impact of these shocks. Crises were more likely, or the economic distress they caused was more severe, in countries with higher external debt—especially short-term—and lower levels of international reserves.

Fifth, most EMDEs that experienced financial crises during debt accumulation episodes employed an unsustainable combination of macroeconomic policies, and suffered structural and institutional weaknesses. Many of them had severe fiscal weaknesses, including poor revenue collection, widespread tax evasion, public wage and pension indexing, monetary financing of fiscal deficits, and substantial use of energy and food subsidies. Many of the crisis countries borrowed in foreign currency, employed managed exchange rate regimes, and sustained weakly regulated banks. Debt buildup often funded import substitution strategies or undiversified economies, or borrowed funds were channeled into sectors that were inefficient, did not raise export earnings, or had poor corporate governance. Several of them also suffered from protracted political uncertainty.

Chapter 6. Policies: Turning Mistakes into Experience

As documented in chapter 4, the wave of global debt accumulation since 2010, the fourth during the past 50 years, has already been larger, faster, and more broad-based than the three previous episodes. The preceding three global waves ended with financial crises in many EMDEs, which raises the question of whether the current wave will end in a similar way.

Several factors are likely to shape the trajectory of the current wave of debt, including prospects for global interest rates and economic growth. Although EMDEs are not in full control of some of these factors, they would benefit from using the lessons from their own experiences with rapid debt accumulation to avoid the mistakes of the past.

The previous chapters examined the causes and consequences of global and national episodes of rapid debt accumulation. Chapter 6 focuses on the likely evolution of the current wave and presents a summary of the main lessons and policy messages based on the analysis in earlier chapters. In particular, it addresses the following questions:

- What forces will shape the evolution of the current debt wave?

- What are the lessons to be drawn from previous episodes of rapid debt accumulation?
- What policies can lower the likelihood and cost of future debt crises?

The chapter makes three contributions to an already-rich policy debate. First, it discusses the likely evolution of the current wave of debt accumulation from the perspective of EMDEs. It also considers the recent debate about the merits of debt accumulation in the current era of low interest rates. Previous work has mostly focused on the consequences of debt accumulation for advanced economies, as reviewed in chapter 2. Second, the chapter offers a compilation of salient lessons about the consequences of rapid debt accumulation based on the analysis of the global and national episodes of debt accumulation presented in the earlier chapters.[10] Third, the chapter offers a comprehensive set of policy prescriptions that can help lower the likelihood of debt-related financial crises and mitigate their effects when they materialize.

The chapter presents the following findings.

Striking the right balance. In the current debt wave, many EMDEs have both accumulated a record amount of debt and experienced a persistent growth slowdown. Some of these economies now also share a wide range of external and domestic vulnerabilities that have historically been associated with a higher likelihood of financial crises. In addition, EMDEs are confronted by a wide range of risks in an increasingly fragile global context. As a result, despite currently record-low global interest rates, stronger policy frameworks in some EMDEs, and a strengthened international safety net, the latest wave of debt accumulation could follow the historical pattern and result in financial crises (figure 1.11). The study of past waves shows the critical importance of policy choices in reducing the likelihood of the current debt wave ending in crisis and, if crises were to take place, mitigating their impact.

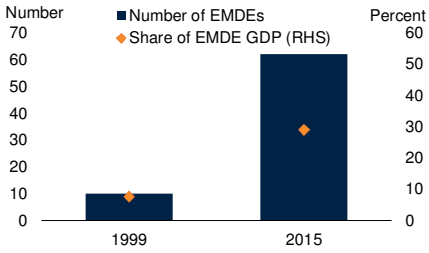
Lessons from experience. Debt accumulation is unlikely to be benign unless it is well-spent to finance truly output-enhancing purposes and it is resilient (in terms of maturity, currency, and creditor composition) to economic and financial market disruptions. These conditions require not only prudent

[10] For studies on general lessons from the global financial crisis, see Dabrowski (2010) and IMF (2018); for specific policy areas such as financial supervision and regulation or corporate governance, see Buiter (2009); Claessens et al. (2010); Claessens, Kose, and Terrones (2010); Dewatripont, Rochet, and Tirole (2010); King (2018); and Liang, McConnell, and Swagel (2018).

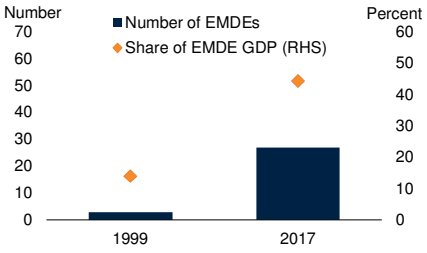
FIGURE 1.11 Risks and policy implications

Since the 1990s, many EMDEs have introduced fiscal rules and inflation-targeting monetary policy regimes and allowed greater exchange rate flexibility and central bank transparency. Policy frameworks that are more resilient may help mitigate some of the risks arising from growing corporate debt and deteriorating sovereign credit ratings.

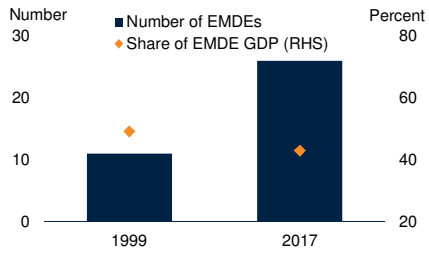
A. EMDEs with fiscal rules



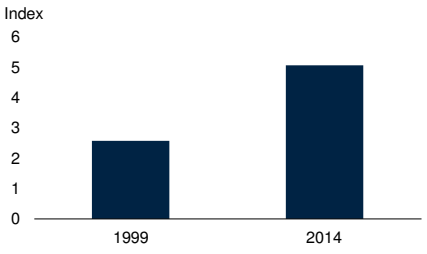
B. EMDEs with inflation targeting



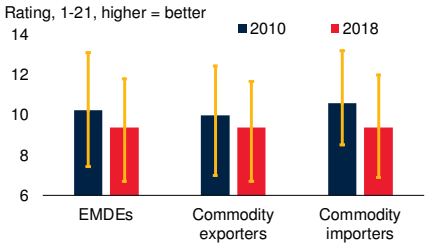
C. EMDEs with flexible exchange rates



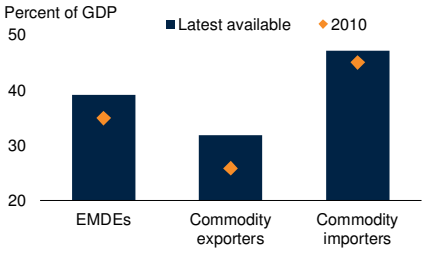
D. EMDE central bank transparency



E. Sovereign credit ratings



F. Nonfinancial corporate debt



Sources: Dincer and Eichengreen (2014); Ha, Kose, and Ohnsorge (2019); Huidrom et al. (2019); International Monetary Fund; Kose et al. (2017); World Bank.

Note: EMDEs = emerging market and developing economies; IMF = International Monetary Fund.

A. EMDE implementing one or more fiscal rules on expenditure, revenue, budget balance or debt.

B. Inflation targeting as classified in the IMF *Annual Report of Exchange Arrangements and Exchange Restrictions*.

C. Flexible exchange rate are defined as those classified as "Floating" or "Free Floating" in the IMF *Annual Report of Exchange Arrangements and Exchange Restrictions*.

D. As classified in Dincer and Eichengreen (2014).

E. Unweighted averages of foreign currency sovereign credit ratings for 49 EMDE commodity exporters and 40 EMDE commodity importers. Whiskers denote interquartile ranges.

F. Based on data for 40 EMDEs. Latest available datapoint is 2019Q2 for Argentina, Brazil, Chile, China, Colombia, Hungary, India, Indonesia, Malaysia, Mexico, Poland, Russian Federation, Saudi Arabia, South Africa, Thailand, and Turkey; 2017 for the rest. Unweighted average of nonfinancial corporate debt in 21 EMDE commodity exporters and 19 EMDE commodity importers.

government debt management but also robust financial system regulation and supervision and sound corporate governance. It is critical to respond effectively to external shocks especially when there are domestic vulnerabilities. Private debt can quickly turn into public debt during periods of financial stress. Once debt distress materializes, prompt resolution is critical to avoid a prolonged period of weak economic activity.

Policy options. Although specific policy priorities depend on country circumstances, four broad strands of policy options can help contain the risks associated with debt accumulation. First, governments need to put in place mechanisms and institutions that help them strike the proper balance between the benefits and costs of additional debt. These mechanisms include sound debt management and high debt transparency. International creditors can support sustainable borrowing by implementing prudent lending standards (including in terms of transparency), appropriately distributing risk, and ensuring the productive use of debt.

Second, the benefits of stability-oriented and resilient fiscal and monetary policy frameworks cannot be overstated. Third, financial sector policies need to be designed to foster responsible private sector borrowing. This design includes robust supervisory and regulatory frameworks as well as corporate and bank bankruptcy frameworks that allow prompt debt resolution to limit the damage from debt distress. Fourth, it is essential to have strong corporate governance practices and effective bankruptcy and insolvency regimes.

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