Chapter 2. Sovereign-Bank Nexus Risks Need to Be Addressed

The close link between the banking sector and the government, a situation known as the sovereign-bank nexus, stands at a decade high in EMDEs. This situation exposes the sector to risks through elevated government debt and fiscal pressures. *A moderate increase of the sovereign-bank nexus can reflect healthy financial sector deepening and support economic growth. However, in just 12 years the exposure of banks to government debt in EMDEs rose by over 35 percent (from 12 to 16 percent of total bank assets on average in 2023) and is 8 percentage points higher in state-owned banks (SOBs) than in private banks. The exposure rose even more—by over 50 percent—in debt-distressed countries. The COVID-19 pandemic further increased EMDE government borrowing, and banking sectors, particularly SOBs, were natural lenders (and were encouraged to acquire government debt through suasion and regulatory policy). The surge in sovereign debt exposure among EMDE banks reached its highest point in the past decade, nearly three times higher than in advanced economies. This escalation reinforced the interconnection between the financial well-being of EMDE governments and that of domestic banks, intensifying the potential for feedback loops that could jeopardize macroeconomic and financial sector stability.*

The sovereign-bank nexus in EMDEs is particularly concerning in countries that face government debt distress and could default, and it has the potential to trigger a joint banking-government debt crisis. *Banking stress has usually affected the sovereign, rather than the other way around, but currently the situation is reversed. The sovereign-bank nexus is even higher in countries already facing government debt distress—the share of government debt held by banks as percentage of assets in these countries is on average 6 percentage points higher than in non-debt-distressed countries. Out of 33 EMDEs with high government exposures of banks (where government debt is more than 20 percent of bank assets), 16 countries face high government debt risks. A deterioration of the value of government debt in these countries caused by debt restructurings could significantly damage banking sectors and might trigger a crisis. World Bank staff analysis indicates that a 5-percent loss on banks' government debt holdings—which is small by historical standards—would cause one-fifth of banks in the sample in debt-distressed countries to become undercapitalized. Moreover, countries with a high sovereign-bank nexus also tend to be less prepared to deal with financial stresses, which can amplify adverse feedback loops. Several countries already face a joint banking-government debt crisis. Historically, such crises are among the costliest, resulting in a reduction in real income per capita of up to 7 percent, on average, compared to pre-crisis levels.*

Regulatory standards designed to capture the risks banks take do not account for the tail risk of a government debt default (including restructuring), which is significant in some EMDEs. *Although banks are required to carry minimum holdings of government securities for liquidity management purposes, they do not face maximum limits on government exposures. Only limited disclosure on their sovereign exposures is required from banks, which renders their balance sheets less transparent and makes it difficult for markets to estimate impacts of various sovereign stress scenarios. In practice, banks also currently are not required to apply capital charges for their sovereign exposures in local currency. As a result, regulatory standards have not limited a sizable buildup of unsustainable government debt on bank balance sheets in some EMDEs.*

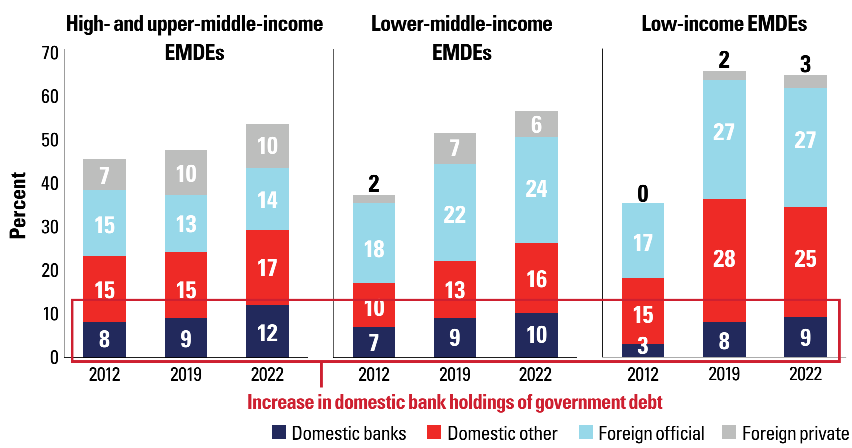
EMDE banking authorities should foster more prudent risk taking by banks and strengthen financial sector resilience, even if they cannot resolve risks posed by the sovereign-bank nexus alone. Sound fiscal and other policies to preserve public debt sustainability and macroeconomic stability are required. *Banking authorities alone will not be able to fully resolve sovereign-bank nexus risks, which will require sound fiscal and macroeconomic policies. However, banking authorities should consider introducing granular disclosure requirements for banks' public exposures to encourage market discipline. Within their individual country contexts,*[31] *banking authorities should explore the benefits and drawbacks of carefully designed capital charges on local currency government debt (such as for exposures that exceed certain thresholds) to strengthen banks' resilience and mitigate excessive buildup of government debt holdings. Authorities also need to encourage stronger bank buffers well in advance of potential crises, implement effective financial safety nets and crisis management frameworks, put in place appropriate institutional arrangements to allow decision makers to coordinate and act decisively, and conduct regular stress-testing for banks that also considers possible impacts of sovereign debt stress. In the medium term, EMDEs should continue to promote the deepening of domestic capital markets and the institutional investor base, which will help mitigate sovereign-bank nexus risks.*

Introduction

The financial sector and the government are closely linked, including in EMDEs. This link increased significantly over the past decade, raising concerns about unintended consequences and rising vulnerabilities. This bank-government connection, which is often called the sovereign-bank nexus, is particularly important in EMDEs.[32] The nexus refers to the interdependence between a country's government and its banking sector, where the financial health of one can significantly impact the other. This relationship carries with it the potential to destabilize the economy and financial markets. As illustrated in figure 2.1, government debt[33] levels across EMDEs have increased substantially.[34] At the same time, the creditor profile of government debt in EMDEs has changed over the past decade to include a larger share of domestic investors—domestic banks in particular—which has increased the nexus. In addition, EMDE banking sectors have grown relative to the economy in recent years, which also contributes to the current situation.

FIGURE 2.1 Debt Levels Are Rising While Domestic Investors Are Gaining Significance, Particularly in Low-Income Contexts

Share of sovereign debt to GDP by sovereign investor types and income group (percent of GDP)



Sources: World Bank staff calculations based on Arslanalp and Tsuda (2014) with data updated in 2023.

Note: Balanced sample consisting of 92 countries (43 high-income countries and upper-middle-income countries, 37 lower-middle-income countries, and 12 low-income countries), taking the country sample mean per year. "Domestic banks" are depository corporations residing in the country (IFS definition). "Domestic other" consists of domestic central banks and domestic nonbanks. "Foreign official" consists of foreign official loans and foreign central bank holdings as reserve assets, "Foreign private" consists of foreign banks, which are BIS reporting banks and bank branches residing outside the country and foreign nonbanks. Foreign nonbanks and domestic nonbanks are imputed from external and total debt. EMDEs = emerging market and developing economies; GDP = gross domestic product.

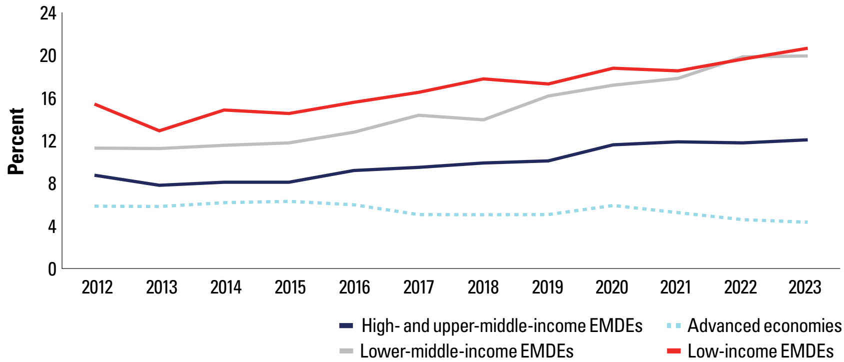
The increase of the sovereign-bank nexus can reflect healthy financial sector deepening that supports economic growth. Historically, the nexus played a mostly virtuous role across countries. Banks support the government in meeting its funding and debt management objectives, facilitate monetary policy transmission, and promote local currency bond market development and liquidity, which is often limited in EMDEs. Moreover, holding government securities helps banks manage their balance sheets, liquidity, and risks as markets become deeper and more liquid. This positive dynamic results in lower fiscal and system-wide financial vulnerabilities and creates lending conditions conducive to economic growth.

However, a shock or series of shocks (such as a rapid tightening of external financial conditions, sharp currency depreciation, and soaring import prices) can also trigger a vicious cycle in which sovereign debt problems spill over onto bank balance sheets, particularly if those balance sheets are weak. This dynamic has been observed in several EMDEs over the past two years and some are already facing a joint banking-government debt crisis. Historically, this vicious cycle has also occurred in Argentina, Ecuador, and the Russian Federation in the 1990s and early 2000s, and in various European countries during the European sovereign-debt crisis of 2011–12.

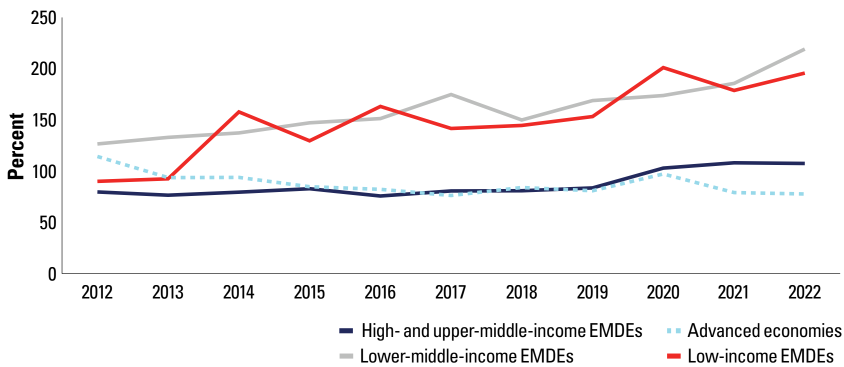
The sovereign-bank nexus accelerated during the COVID-19 pandemic and is now very high in several EMDEs, with some in distress. Although stress originated at the sovereign level, banks' lending support permitted delays of necessary corrective fiscal actions. Foreign investors retrenched from mostly larger EMDE local debt markets during the pandemic, while sovereign debt[35] in EMDEs soared to historic highs, from 49 percent of GDP in 2019 to 54 percent in 2023 (IMF 2024). The burden of financing new government debt fell on banks, and they were encouraged to do so by policy makers through moral suasion and regulatory requirements (figure 2.2, panel a and b), which also resulted in a rapid increase of the nexus. Together with lending to state-owned enterprises, which is frequently guaranteed by the government, such bank actions delayed necessary corrective actions (such as more efficient government spending) and allowed for a further increase of the nexus. Indeed, some governments have a captive market that readily purchases their securities, creating perverse incentives that undermine fiscal prudence in the short term.

FIGURE 2.2 Government Debt Purchases by Domestic Banks in Lower-Income Countries Grew by More Than 30 Percent over the Past Decade and Now Exceed Levels in Advanced Economies by a Factor of Three

a. Government debt to total banking sector assets (percent), 2012–23



b. Government debt to total regulatory capital (percent), 2012–22



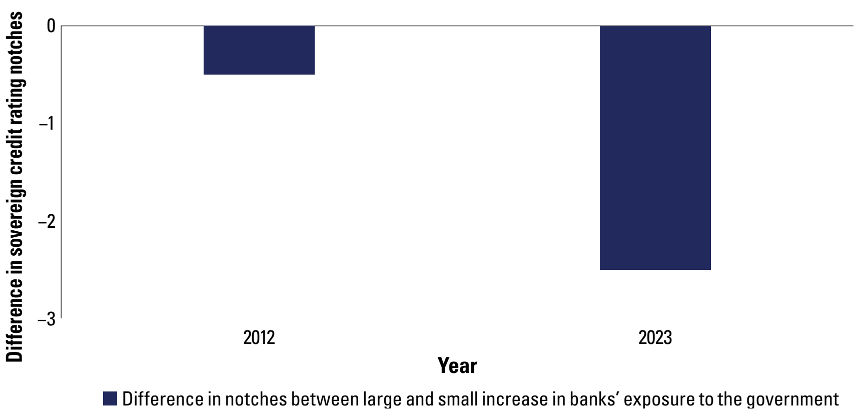
Source: Panels a and b: World Bank staff calculations based on IMF International Financial Statistics data.

Note: Panel a: Balanced sample consisting of 131 countries (57 HIC-UMIC EMDEs, 32 LMIC, 12 LIC, 30 AE), taking the country sample median and latest available monthly data for the year. Panel b: Balanced sample consisting of 87 countries (37 HIC and UMIC EMDEs, 21 LMIC, 5 LIC, 24 AE), taking the country sample median and latest available monthly data for the year. AE = advanced economies; EMDEs = emerging market and developing economies; HIC-UMIC = high-income countries and upper-middle-income countries; IMF = International Monetary Fund; LIC = low-income counties; LMIC = lower-middle-income countries.

In just 12 years, between 2012 and 2023, the exposure of banks to government debt in debt-distressed[36] EMDEs rose by over 50 percent—from 13 to 20 percent of total bank assets on average. The debt exposure among debt-distressed EMDE banks now stands at the highest levels of the past decade. Government debt exposure of domestic banks rose across all EMDEs by over 35 percent between 2012 and 2023, and now stands at 16 percent of bank assets on average, nearly three times higher than in advanced economies. In 10 countries this exposure exceeds 30 percent of their assets, notably in Pakistan, the Arab Republic of Egypt, and the South Sudan (figure 2.4, panel a). The nexus is particularly high in both low-income countries and debt-distressed countries, with banks' median government-debt holdings accounting for 21 percent (figure 2.2, panel a) and 18 percent of their assets, respectively (figure 2.4, panel a). Likewise, EMDEs have the highest government debt-to-total regulatory capital ratio in a decade, at 179 percent in 2022, about double the ratio of advanced economies (figure 2.2, panel b). This poses a risk, as various countries are facing government debt distress and some have both elevated government debt and higher bank exposure to government debt, which contributes to potential vicious-cycle dynamics (figure 2.4, panel a).[37] Indeed, it seems that countries where banks' exposure to the government has increased significantly over the past decade have generally faced larger downgrades in their external sovereign credit ratings compared to countries without such a significant increase (figure 2.3).[38]

FIGURE 2.3 Over the Last Ten Years, Countries with the Largest Increase in Their Sovereign-Bank Nexus Tended to Experience the Largest Sovereign Credit Rating Downgrades

Change in Standard and Poor's external sovereign credit rating (2012-23) and change in banks' exposure to the government (2012-23)



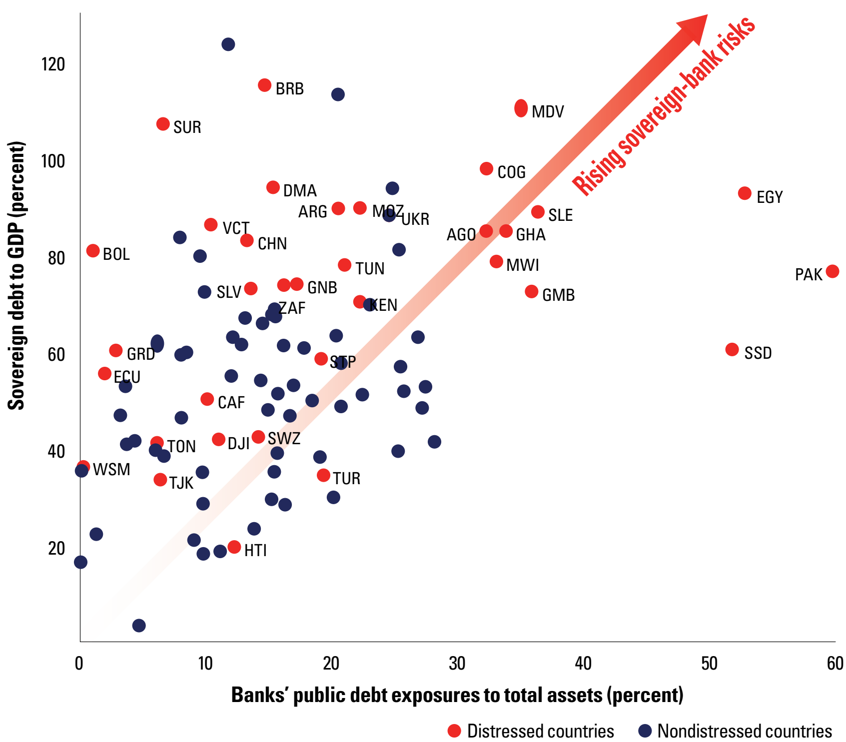
Sources: World Bank staff calculations based on Standard and Poor's and IMF International Financial Statistics data.

Note: Balanced sample consisting of 49 EMDEs, showing the difference in rating notches between the top and bottom tercile of the change in banking sector lending exposure to the government as a share of total assets. This comparison takes the country sample median of sovereign credit ratings within the top and bottom tercile sample of countries with respect to change in banking sector lending exposure for 2012 and 2023. The graph shows the difference in external sovereign credit rating for those countries in 2012 and 2023. The top tercile stands at a change of 5.7 p.p. between 2012 and 2023, the bottom tercile stands at a change of 2.2 p.p. between 2012 and 2023. A decrease in the sovereign credit rating notch signifies a downgrade, where each whole number decrement corresponds to a one-notch reduction in the rating. EMDEs = emerging market and developing economies; p.p. = percentage points.

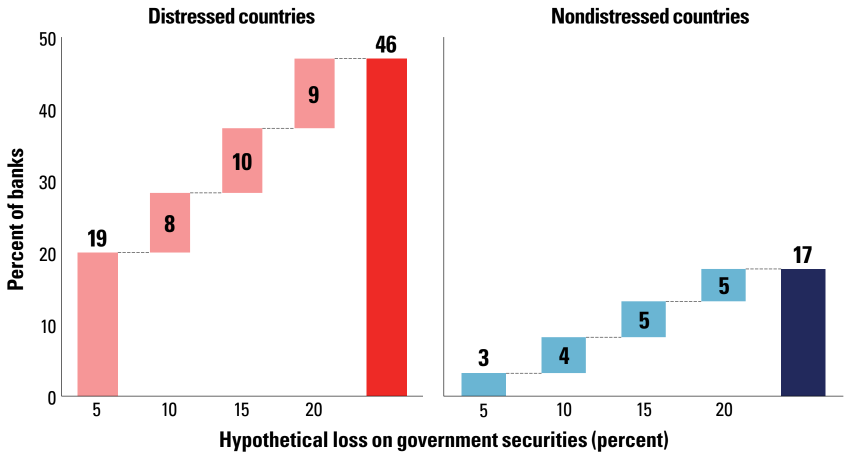
Defaults or debt restructurings of government securities, and even a modest shock by historical standards, can strain a substantial share of banks' balance sheets in countries grappling with (external) debt distress. A high-level analysis conducted on 367 banks in 25 EMDEs suggests that approximately 10 percent of all banks in the sample would become undercapitalized in the event of a loss of just 5 percent on their government debt holdings (see chapter 1, figure 1.6, panel b). A 5 percent loss is considerably smaller than the average loss incurred by creditors between 1980 and 2018.[39] However, banks in debt-distressed countries are even more vulnerable, as a 5 percent loss on their government debt holdings would cause 19 percent of banks in those countries to become undercapitalized. Banks in non-debt-distressed countries appear significantly more resilient to losses on government debt holdings compared with banks in distressed countries (figure 2.4, panel b).

FIGURE 2.4 Banks in Debt-Distressed Countries Have Higher Exposure to Government Debt, While Being Less Well Capitalized

a. Sovereign debt to GDP and government debt to total banking sector assets in 2023 (percent)



b. Share of undercapitalized banks following different amount of losses on banks' government debt holdings (percent of banks)



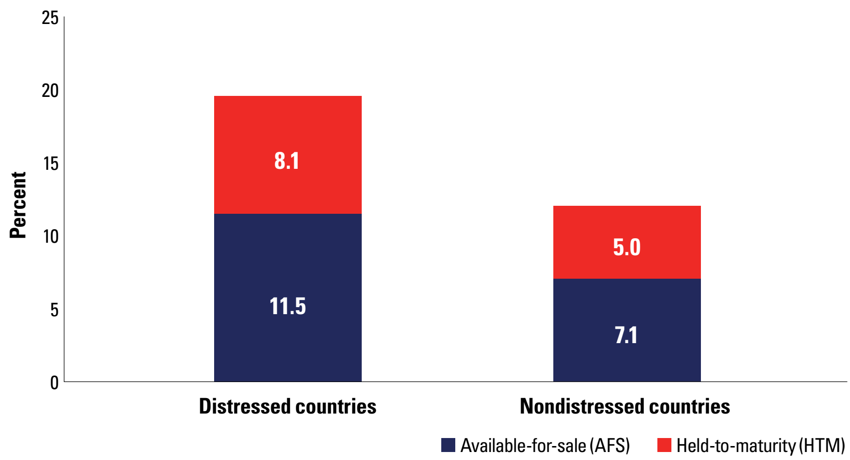
Sources: Panel a: World Bank staff calculations based on IMF International Financial Statistics and WEO data. Panel b: World Bank staff calculations based on Fitch Connect.

Note: Panel a: Sample consisting of 98 countries. Sovereign debt to GDP is based on International Monetary Fund WEO data, encompassing all liabilities requiring future payment of interest and/or principal. Government debt–to–total banking sector assets is calculated by dividing bank claims on the central government, state and local government, and public nonfinancial corporations by total bank assets using IMF International Financial Statistics data. Panel b: The sample consists of 367 banks in 25 countries in June 2023 (145 banks in distressed countries and 222 banks in non-distressed countries). See appendix D for methodological details. Panels a and b: A country is defined as being distressed if either the EMBI spread is above 1,000 or the Debt Sustainability Assessment indicates "high" or "distressed" external debt risk. EMBI = Emerging Markets Bond Index; GDP = gross domestic product; IMF = International Monetary Fund; WEO = World Economic Outlook.

Domestic banks in debt-distressed countries hold more government debt than banks in non-debt- distressed countries. Banks in these countries tend to hold a higher percentage of government securities as a proportion of their total assets (figure 2.5). In some cases, they have stepped up to lend to the sovereign as foreign investors retrenched. However, this in practice also exposes banks to more risk precisely when risks are rising (IMF 2022). Moreover, banks' accounting practices of local currency sovereign debt on their balance sheets can hide potential losses during times of sovereign distress. This is particularly true when a significant portion of sovereign portfolios is recorded not at market value (available-for-sale), but at amortized cost (held-to-maturity).[40]

FIGURE 2.5 Banks in Debt-Distressed Countries Tend to Hold a Higher Share of Government Debt, a Substantial Portion of Which Is Accounted for as Held-to-Maturity, Which Can Mask Potential Losses in Times of Crisis

Median government debt securities (percent of total bank assets)



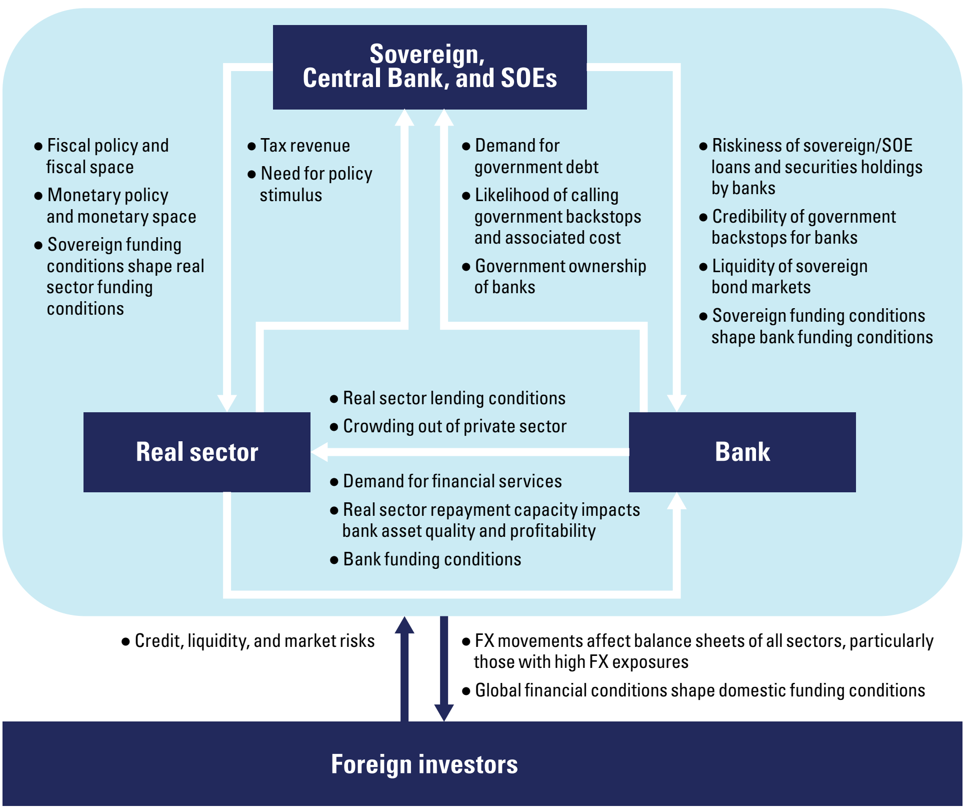
Source: World Bank staff calculations based on Fitch Connect.

Note: The sample consists of 289 banks across 31 countries in June 2023, whereas a country is defined as being debt distressed if either the EMBI spread is above 1,000 or the Debt Sustainability Assessment indicates "high" or "distressed" external debt risk. EMBI = Emerging Markets Bond Index.

How the Sovereign-Bank Nexus Can Spread Risks

The stability of the banking sector and the fiscal sustainability of the sovereign influence each other through multiple transmission channels. Various transmission channels exist through which banks and the sovereign influence each other over multiple iterations (figure 2.6). Causality runs in both directions, and the strength of these channels may vary over time and depends on country-specific circumstances. The sovereign is exposed to banking sector risk both directly and indirectly (Feyen and Zuccardi 2019; Borio, Farag, and Zampolli 2023). Direct exposure occurs through deposit insurance or guarantees and the expectation that the sovereign will support troubled institutions. These backstops can take many forms including liquidity support, debt guarantees, recapitalization or nationalization of failing institutions, and the assumption of bad debts.

FIGURE 2.6 Main Transmission Channels of the Sovereign-Bank Nexus



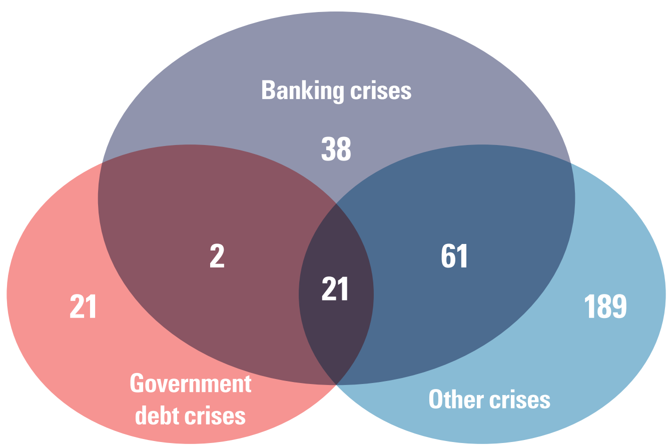
Source: World Bank staff based on Feyen and Zuccardi 2019.

Note: FX = foreign exchange; SOEs = state-owned enterprises.

In recent times, banking stress has usually affected the sovereign, rather than the other way around, but now the situation is reversed. The global financial crisis of 2007–08, which originated in the financial sector because of bad loans made by banks, turned into a sovereign crisis in some cases where governments sustained substantial losses to bail out banks. At present, however, the situation is reversed, and sovereign crises have set the stage for financial sector problems. While less common recently, there are historical examples of this reversal, including the Latin American debt crisis in the 1980s and in Argentina in 2001, when sovereign default, a loss of confidence in the local currency, and bank restrictions were the origins of the crisis.

Banking and sovereign crises have occurred simultaneously in the past, in some cases facilitated or aggravated by the sovereign-bank nexus. Crises can take different forms, including systemic banking crises, currency crises, sovereign or government debt crises, and "sudden stops"[41] of foreign capital inflows (Laeven and Valencia 2020; Forbes and Warnock 2011). Of the 122 banking crises that occurred in EMDEs between 1970 and 2017, the largest number of concurrences were with a currency crisis (69 crises) or a sudden stop (25 crises). Some 23 of the 122 EMDE banking crisis episodes coincided with a government debt crisis, with most of them having some other form of crisis on top (figure 2.7).

FIGURE 2.7 **Frequency of Different Types of Crises in LICs and MICs between 1970 and 2017**



Source: World Bank staff calculation based on Laeven and Valencia 2020 and Forbes and Warnock 2011.

Note: The numbers in the Venn diagram contain all crises between 1970 and 2017 that involve a banking crisis in EMDEs (122), either happening by itself (38) or jointly with a government debt crisis or other crises, including currency crises and sudden stop crises. Figure 2.8, panel a, considers 122 banking crises, which are distinct events. In addition to these, there were 21 instances of government debt crises and 189 other types of crises that occurred independently, without coinciding with any of the banking crises. EMDEs = emerging market and developing economies; LICs = low-income countries; MICs = middle-income countries.

Transmission Channels of Risks from Banks to the Sovereign

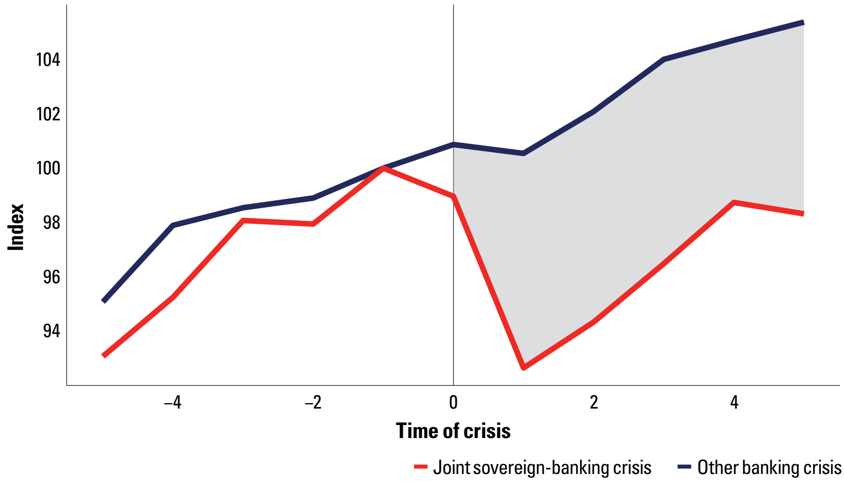
While banking crises are costly for the public sector and the broader economy (Reinhart and Rogoff 2009a, 2009b; Bova et al. 2016; and Laeven and Valencia 2020), combined government debt and banking crises have been the most severe: they are associated with declines in median real GDP per capita of 7 percent, one year from their onset. Domestic debt defaults tend to be costlier for the economy (Malinen and Ropponen 2022) and for investors (Erce, Mallucci, and Picarelli 2024) compared to external debt defaults. Costs may be even higher, however, in cases of combined government debt and banking crises. Figure 2.8, panel a, shows not only that the average duration of such joint crises is longer (by 0.9 years), but also that costs are much higher compared to other types of banking crises. For example, liquidity support to banks and nonperforming loans are 9.9 percent and 3.6 percent higher, respectively, than in other crises. The economic impact of a joint crisis can also be severe. Compared to pre-crisis levels, median GDP per capita falls by 7 percent one year after the start of a joint government debt and banking crisis (figure 2.8, panel b). By contrast, the impact of other crises that involve a banking crisis is less significant, where median GDP per capita is 0.3 percent lower than pre-crisis levels one year after a crisis begins.[42]

FIGURE 2.8 Combined Government Debt and Banking Crises Have Been the Most Severe, with Significant Adverse Impacts on Real GDP per Capita

a. Selected features of banking crises in EMDEs

	All crises involving both a banking and government debt crisis	All other crises involving a banking crisis
Number of crises	23	99
Duration of the crisis (years)	3.7	2.8
Liquidity support to banks (% of deposits)	26.3	16.4
Peak NPLs (% of total loans)	35.9	32.3

b. Median GDP per capita five years before and after a joint public debt and systemic banking crisis event (red) and a banking crisis only (navy) (constant 2015 $; index, t – 1 = 100)



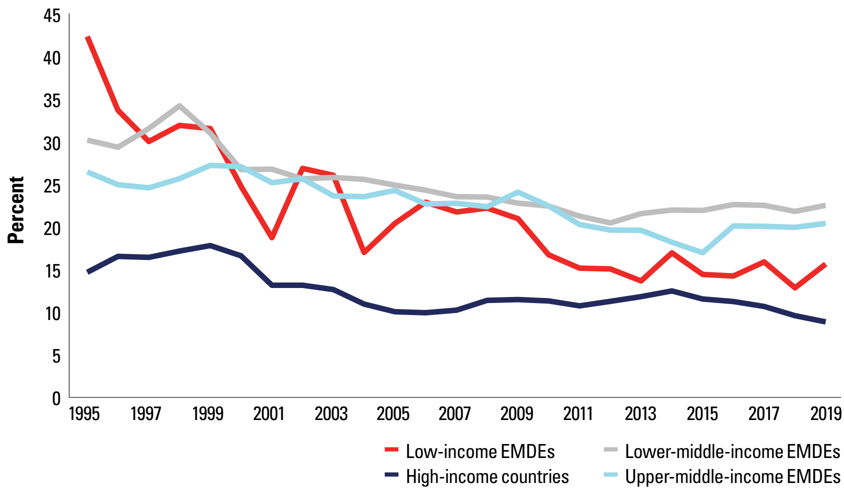
Sources: Panel a: World Bank staff calculation based on Laeven and Valencia 2020. Panel b: World Bank staff calculation based on Laeven and Valencia 2020 and World Bank World Development Indicators.

Note: Panel a: The sample includes global banking crises from 1970 to 2017. Liquidity support is measured as the ratio of central bank claims on deposit money banks and treasury liquidity support to total deposits. Outliers are excluded, and the crisis duration is limited to five years. Panel b: The red line shows joint banking and government debt crises that occurred globally between 1970 and 2017. There were 21 cases within a three-year span. The navy line represents other banking crises during that time span. This sample includes 80 crises. The analysis starts from the first year of any crisis occurrence. Both lines show the median GDP per capita in constant 2015 $, indexed to one year before the crisis over an 11-year period (five years before and after the crisis), across the respective crisis samples. GDP = gross domestic product; LICs = low-income counties; MICs = middle-income countries; NPLs = nonperforming loans.

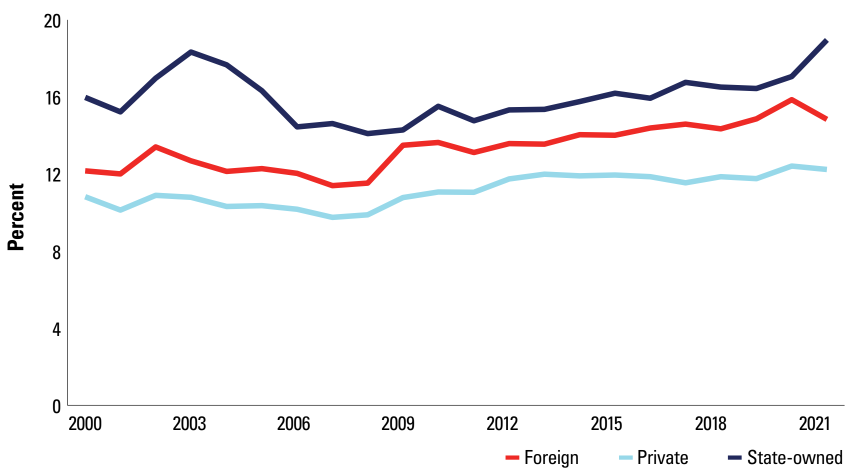
Another direct risk channel is through government ownership of state-owned banks, which tend to hold higher levels of government debt. In middle-income and low-income countries, state-owned banks (SOBs) represent around 20 percent and 16 percent, respectively, of total banking system assets, compared to only 9 percent in high-income countries (figure 2.9, panel a). The government is thus directly exposed to their financial losses and faces significant contingent liabilities, as it may need to recapitalize these institutions if they face distress (Acharya, Drechsler, and Schnabl 2014; Laeven and Valencia 2018). Such exposure may also reduce market discipline as the government may find it easier to use state-owned banks to absorb government debt when fiscal needs rise and private investors' appetite to lend is limited. As a result, state-owned institutions also have disproportionately greater exposures to sovereign entities, including state-owned enterprises, as a share of total assets (on average 19 percent), exceeding foreign owned (14 percent) and domestic privately owned (11 percent) banks' exposures (figure 2.9, panel b). This share has increased since the pandemic.

FIGURE 2.9 In Lower-Income Countries, State-Owned Banks Still Have a Significant Share of the Banking System and Hold the Highest Proportion of Government Debt, Especially since the Pandemic

a. Average share of state ownership in domestic banks (percent of total bank assets)



b. Average holding of government securities (percent of total bank assets)



Source: Panels a and b: World Bank staff calculations based on Fitch Connect and Panizza 2023.

Note: Panel a: Unbalanced sample of 6,365 banks, with a dataset consisting of 24 low-income countries, 49 lower-middle-income countries, 51 upper-middle-income countries, and 57 high-income countries. The country-year percentage of state ownership was calculated first by weighting the assets of each bank by the share of government ownership in a specific bank-year and then by dividing by total banking assets in the same country-year. The simple average of all countries in the same year was then computed. Panel b: Unbalanced sample consisting of 4,761 banks (3,109 private, 1,286 foreign, and 510 public banks), covering 24 LICs, 100 MICs and 57 HICs. There are 144 banks that have changed ownership during the period covered, which explains the difference between the total number of banks and the number of private, foreign, and public banks. A threshold of 20 percent is used to identify public and foreign ownership. If public ownership and foreign ownership are both greater than 20 percent, the attribution is based on the larger value. The holding of government securities by foreign, private, and state-owned banks is computed as a simple average across all banks. EMDE = emerging market and developing economies; LICs = low-income countries; MICs = middle-income countries; HICs = high-income countries.

Indirectly, the sovereign is affected by banking sector conditions through spillovers to the economy, which drive the health of public finances. This phenomenon is currently observed in many EMDEs (see chapter 1). Banks that face balance sheet constraints may respond by restricting lending, which depresses economic activity and reduces tax revenues. The macroeconomic fallout of banking crises can include higher unemployment (Jordà, Schularick, and Taylor 2013) and deteriorating fiscal balances (Laeven and Valencia 2020), with joint government debt and banking crises particularly detrimental for output (figure 2.8, panel b).

Transmission Channels of Risks from the Sovereign to Banks

Transparency is key for gauging banks' exposure to the sovereign, as this exposure is the main crisis transmission channel from the sovereign to the banking sector. These exposures by the banking sector to the sovereign can assume many forms and not all of them may be publicly disclosed. Information on holdings of local currency government securities is generally available and provides valuable insights since these are the main public exposures.[43] However, even when data are available, it is generally difficult to reliably assess the extent to which fair value losses are recognized across banks.[44] Moreover, banks may also have exposures to state-owned enterprises or have exposures on their books that are guaranteed by the government—and these exposures might not be fully disclosed. If market discipline is to play a part in forcing banks to mitigate risks associated with the nexus, their true exposure to the sovereign must be disclosed and transparent.

Banks are directly impacted by sovereign conditions as well as fiscal and monetary policies, while government debt can also crowd out private credit. Banks' asset quality, buffers, and funding conditions are affected by sovereign conditions, monetary policy, and fiscal policy, as these impact interest rates, risk premiums, financial conditions, the exchange rate, and economic activity. Banks with large net open foreign exchange positions are likely to be disproportionately affected by exchange rate depreciation associated with sovereign stress or restructuring. Likewise, bank lending to sovereign and state-owned enterprises reduces banks' capacity to lend to households and private companies, which negatively affects the resilience and growth potential of the private sector. Regression analysis, encompassing 1,692 banks in EMDEs, indicates that a one-percent increase in a bank's sovereign debt holdings as a share of its total assets reduces gross loan growth by 0.1 percent (see appendix E).[45]

Stylized Sequencing of a Vicious Sovereign-Bank Nexus: Recent Lessons from Countries' Experiences

The sovereign-bank nexus unfolds in unique ways that depend on country-specific conditions, but this unfolding tends to follow three stylized phases (figure 2.10). Recent country experiences[46] suggest these are (a) an *accumulation* phase in which domestic banks' holdings of government debt rise as domestic public financing needs increase and signs of vulnerabilities gradually emerge; (b) a *deterioration* phase in which vulnerabilities turn into realities such as acute government-debt stress and default, the sovereign's loss of access to international capital markets, and an acceleration of domestic financing needs; and (c) a *crisis* phase around (and after) the point of government default to stabilize the situation and create conditions conducive to recovery. From a financial stability perspective, the crisis phase is typically divided between (a) containment and stabilization, (b) restructuring and resolution, and (c) dealing with distressed assets (Dobler, Moretti, and Piris 2020). The focus here is on containment and stabilization only, as insights from country crises are too recent to cover other aspects.

FIGURE 2.10 Sequencing of the Sovereign-Bank Nexus—Selected Stylized Features and Key Financial Sector Policy Implications

	ACCUMULATION	DETERIORATION	CRISIS
Stylized features	• Building fiscal pressures and higher deficits • Tightening financial conditions for both the public and financial sectors • Retrenchment of foreign investors • Public debt accumulation by domestic banks, supported by moral suasion	• Unsustainable fiscal policies and rising expectations of sovereign default • Erosion of fiscal and monetary policy space • Erosion of credibility of government backstops and guarantees • Sharp decline in external conditions, with reduced market access • Acute liquidity and solvency challenges for the financial sector	• Resolution of uncertainty around debt sustainability challenges • Recognition and allocation of losses in the financial sector • Policy measures to mitigate the socioeconomic fallout • Potential external support from international financial institutions
Key financial sector policy implications	• Consider topping up international standards for sovereign exposures (counterparty risk) • Ensure effective governance and operational independence of authorities • Diversify domestic financial intermediation	Where domestic debt restructuring is considered • Consider financial stability implications alongside direct fiscal benefits • Coordinate among key public stakeholders	• Implement institutional set-up fostering credible objective setting and decisive actions • Establish effective and operational financial safety nets • Perform swift viability assessments informing priorities

Source: World Bank staff

Accumulation Phase

The accumulation of government debt, driven by unbalanced fiscal policies, has been at the root of recent sovereign-bank nexus crises. Several of the crisis countries utilized ill-conceived tax policies such as unsustainably low tax rates, broad tax exemptions, nontargeted subsidies, and inefficient tax collection. At the same time, expenditures grew rapidly, particularly during the pandemic, which was a major exogenous shock that required fiscal and monetary responses. In some cases (such as Pakistan), natural disasters contributed to the growth of government spending (also see chapter 3).[47] These factors have resulted in raising government debt to unsustainable levels. Recent tightening of monetary policy also triggered market losses on government bond portfolios.

Some countries relied on nonresident investors and had sizable portions of their government debt denominated in foreign currency, exposing them to external shocks. As a result, when the sovereign outlook deteriorated, countries found it more difficult to borrow in international markets on favorable terms. Debt refinancing also became more expensive because of rising global interest rates, particularly for those middle-income countries for which concessional borrowing (loans with below-market rates from donors and multilateral development banks) was gradually replaced in recent years by high-cost foreign borrowing. Several economies eventually lost access to international capital markets at an early stage (such as Ghana, Lebanon, and Sri Lanka). Economies with limited foreign exchange reserves faced currency devaluation and heightened vulnerability to sudden stops of foreign currency inflows, resulting in an acute decline of the government's debt-servicing capacity as the debt burden rose in local currency terms. In some cases, countries continued to repay their foreign currency and depleted their international reserves which became unsustainable. This practice resulted in a shortage of foreign currency in these countries, and they became unable to pay for essential imported goods such as food, fuel, and medicine.

Faced with tighter international financial conditions coupled with growing needs to respond to shocks, governments became increasingly reliant on domestic financial sectors for financing, which accelerated the increase of the sovereign-bank nexus. Domestic financial sectors became heavily exposed to the government through holdings of public debt instruments and, in some cases, loans to poorly performing SOEs (such as in the energy sector in Sri Lanka). A retrenchment of foreign investors from domestic markets also required local financial sector participants to step in (figure 2.1; IMF 2022; Feyen and Zuccardi 2019), which further increased the nexus while unsustainable fiscal policies continued. Banks—and state-owned banks in particular—increasingly financed government needs (figure 2.2, panel a; figure 2.9, panel b; Ongena, Popov, and Van Horen 2019), often as a result of moral suasion. In some countries the central bank played a crucial role in encouraging bank lending to the government through quasi-fiscal operations, in addition to taking direct exposures to government debt. For example, in Pakistan, where the government cannot monetize debt by borrowing directly from the central bank, the expansion of banks' exposure to the government has been facilitated by liquidity injections from the State Bank of Pakistan (SBP) through open market operations. In some cases, banks borrowed abroad to finance the government (see box 2.1 for examples).

Box 2.1 Case Studies: Accumulation Phase

In *Sri Lanka*, central government debt increased to unsustainable levels because of high government expenditures that further increased during the elections of 2019 and around the COVID-19 pandemic. In addition, tax revenues were low, at about 11.2 percent of GDP in 2018, and have fallen further since the elections of 2019, following several tax cuts. As a result, central government debt grew rapidly, from 78 percent of GDP in 2018 to 113.8 percent in 2022, with close to one-half of it foreign-owned. The banking sector absorbed most of the debt, with its exposure to the government roughly doubling since 2018. State-owned banks' exposures to the sovereign and state-owned enterprises (SOEs) exceeded 50 percent of their total assets. State-owned banks were the main creditors for SOEs, providing more than 95 percent of credit.

Ghana's public finances have been characterized by chronic imbalances, partly linked (a) on the spending side, to political cycles as well as large financial shortfalls in the power sector, and (b) on the revenue side, to low levels of tax mobilization. Access to the Eurobond market provided new financing opportunities (Ghana made eight issuances averaging $1.8 billion over the past decade), but also heightened vulnerabilities, including to sudden stops. These risks and vulnerabilities materialized in 2020 and in the immediate aftermath of the pandemic, with government debt soaring from 63 percent of GDP in 2019 to 88 percent by the end of 2022. Direct sovereign exposures of banks are around 40 percent of their total assets, with exposures high across all types of banks, particularly domestic banks.

In *Lebanon*, Banque du Liban (BdL) played a crucial role in intensifying the sovereign-central-banking sector nexus, with its interventions becoming more unorthodox as balance-of-payment pressures rose. These operations culminated in the intensification of special financial operations in 2016, where BdL offered Eurobonds to banks in exchange for US dollar reserves. To incentivize banks to make new subscriptions of Eurobonds, BdL loaned to banks in local currency at a relatively low interest rate, on the condition that these funds would subsequently be placed in a long-term facility at BdL earning a high return. As a result, banks' placements with BdL rose from 27 percent of total assets in 2006 to 72 percent as of August 2022 (64 percent in deposits with BdL and 8 percent in government securities). Banks enjoyed very high returns on BdL placements during times of exceptionally low global interest rates, resulting in high profits, which were distributed to shareholders as dividends.

Deterioration Phase

The growth and costs of government debt in EMDEs contributed to a deterioration in debt-servicing capacity and a rise in the expectation of a sovereign default—which eventually materialized in some countries. Countries suspended payment on foreign-currency debt when refinancing of government debt became unfeasible. In some countries (such as Sri Lanka), delays in developing an international agreement for debt restructuring impeded the stabilization of financial sector conditions. In other countries, restructuring of foreign debt was not sufficient to restore debt sustainability. As a result, the authorities decided to restructure domestic debt, affecting primarily the domestic banking sector, which is the major holder (such as in Ghana). Pension funds and other financial institutions, as well as central banks, also held sizable sovereign-debt exposures and took a hit on their balance sheets.

The immediate impact of sovereign stress on banks was a tightening in foreign-currency liquidity conditions. Some banks experienced a sharp decline in foreign exchange inflows from abroad (such as remittances circumventing the banking sector or exporters settling directly abroad), a reduction of foreign exchange deposits, and stricter requirements from correspondent banks, all of which impeded their ability to settle transactions in foreign exchange. To address this issue, countries introduced formal (as in Sri Lanka) and informal (as in Lebanon[48]) capital controls. In some cases, severe shortages of foreign exchange liquidity spilled over into liquidity pressures in local currency for some banks. Commercial banks experienced an outflow of deposits, prompting banks to maintain larger-than-usual precautionary liquidity buffers and to raise deposit rates. There was often also a "flight to quality" as depositors reallocated funds to banks that were perceived as more stable (as in Sri Lanka).

Sovereign stress—and an eventual default—also negatively impacted banks' solvency. And banks' accounting practices often failed to reflect at an early stage the true value of local currency government debt and the risks involved with holding it. Even when sovereign creditworthiness deteriorated, sovereign debt in local currency was often considered riskless. When banks failed to provide for expected losses on sovereign debt, as was often the case (as in Ghana and Sri Lanka), capital was overestimated.[49] Moreover, government debt exposures to ailing SOEs were not adequately reflected in bank capital requirements because they benefited from government guarantees, which often were not credible. In addition, banks experienced solvency pressures from shocks to the economy (including through a decrease in timely payments and cash-flow amounts from government and state-owned enterprises as buyers of goods and services) and a subsequent rise in nonperforming loans.

All these pressures adversely affected banking intermediation and created headwinds for the economy. Because in some cases the government became the dominant borrower in the banking system (as in Pakistan), private credit was essentially crowded out. In addition, tighter liquidity conditions and a reduction of banks' net worth constrained their desire and capacity to lend to private companies and individuals, compounding adverse feedback loops. These constraints were sometimes amplified by tightening of monetary policy, which decreased credit demand. As a result, private credit growth was subdued in crisis countries, which affected economic recovery. Box 2.2 details other countries that experienced these dynamics.

Box 2.2 Case Studies: Deterioration Phase

In April 2022, the government of *Sri Lanka* announced a standstill on certain categories of its external debt payments and spillover effects were felt by banks. Prudential indicators did not reflect financial vulnerabilities in the banking sector since banks recognized most of the exposures to the sovereign at a fixed cost over time, rather than at the current market value, and they also failed to provide for potential losses resulting from debt distress. Restructuring of foreign-currency debt resulted in substantial losses to the banking sector, and some banks became undercapitalized. Losses related to state-owned enterprise (SOE) exposures also went largely unrecognized and were not prepared for because SOE loans were guaranteed by the government despite long-standing repayment challenges by SOEs. In addition, banks faced foreign-currency and rupee liquidity pressures. Because of financial stability concerns, banks were excluded from domestic-debt restructuring.

In *Ghana*, banks were included in the Domestic Debt Exchange Program (DDEP), the first phase of which was completed in February 2023. The DDEP significantly eroded the capital buffers of financial institutions. Audited financial statements published in April 2023 show a reduction in banks' capital net worth due to the recognition of impairments of their domestic bond holdings and some other exposures to the government. The second phase of the DDEP was completed in September 2023. The Bank of Ghana has granted regulatory relief to banks with the objective of rebuilding capital buffers up to the minimum required before the shock, as soon as possible and no later than the end of 2025.

In *Lebanon*, a sovereign bank–central bank nexus materialized into a full-fledged crisis which continues to date. After experiencing bank runs, and in the absence of uniform capital controls set by the regulator, banks unilaterally and selectively blocked withdrawals and transfers of the deposits because they cannot access their dollar deposits at the central bank, which has significant negative net reserves. Currently, the Lebanese banking sector is not functioning beyond minimum transactional activity. Banks sold a major share of their Eurobonds with a large discount of 80 percent, accepting huge losses. The consolidated capital base of commercial banks has been effectively wiped out. In broader terms, the loss of savings and a massive reduction in access and usage of financial services gave rise to a dollarized cash-based economy estimated at half the current GDP.

Crisis Phase

Resolving a financial crisis requires a complex, government-wide policy approach, in some cases with support from international financial institutions. Policies depend on country-specific conditions and available policy space, but broadly include (a) monetary and exchange rate policy, (b) fiscal and socioeconomic policy, and (c) financial sector policy.[50] These policies are often combined with debt restructuring. Over 1979–2018, 177 external or domestic sovereign debt defaults occurred in 64 EMDEs, with domestic law debt defaults becoming more frequent in recent years (World Bank 2023b; Erce, Mallucci, and Picarelli 2022; Asonuma and Trebesch 2016). It is worth mentioning that in countries that defaulted on their debt, fiscal space is limited and the government is often not in a position to bail out banks that have become insolvent as a result of a sovereign default. Box 2.3 details several case studies of mitigation approaches.

Box 2.3 CaseStudies: Crisis Phase

In *Sri Lanka*, to alleviate the immediate pressures on the financial sector, in mid-2022 the Central Bank of Sri Lanka (CBSL) adopted several forbearance measures, including for micro, small, and medium enterprises and individuals affected by adverse macroeconomic conditions. Apart from restricting discretionary payments (cash dividends and repatriation of profits), CBSL allowed banks to draw down their countercyclical capital buffers, extended the deadline for enhancement of capital requirements to the end of 2023, allowed the delayed recognition of losses on government securities, and relaxed liquidity requirements. The CBSL also excluded banks from domestic debt restructuring. Central bank holdings of T-bills will however be considered for debt restructuring. In March 2023, the International Monetary Fund (IMF) Extended Fund Facility (EFF) arrangement was approved with structural benchmarks on governance, macroeconomic stability, financial stability, and debt sustainability. Based on the Asset Quality Review, banks would require recapitalization that was partially budgeted for 2024. Ownership of the two large state-owned banks (SOBs) will be diversified by giving shares to strategic investors or the public. Around the time of the first IMF review, the domestic debt restructuring was finalized, and the authorities reached agreements in principle with official creditors and engaged in discussion with private creditors on foreign debt restructuring.

In *Ghana*, all financial sector supervisors were tasked with conducting stress tests to assess liquidity and solvency impacts ahead of the domestic debt restructuring. The regulators also granted regulatory relief, including phased recognition of debt restructuring-related losses for capital adequacy calculation purposes. The Financial Stability Council (FSC) coordinated this exercise in addition to efforts to improve crisis preparedness across the financial sector. The authorities also announced the establishment of the Ghana Financial Stability Fund (GFSF), with a focus on solvency provision. The GFSF is expected to provide solvency and possibly limited liquidity support to viable financial institutions that participate fully in the domestic debt restructuring and need support. Restoring fiscal and debt sustainability, lifting long-term growth, significantly lowering inflation, and rebuilding fiscal and external buffers are now urgent policy priorities for the government.

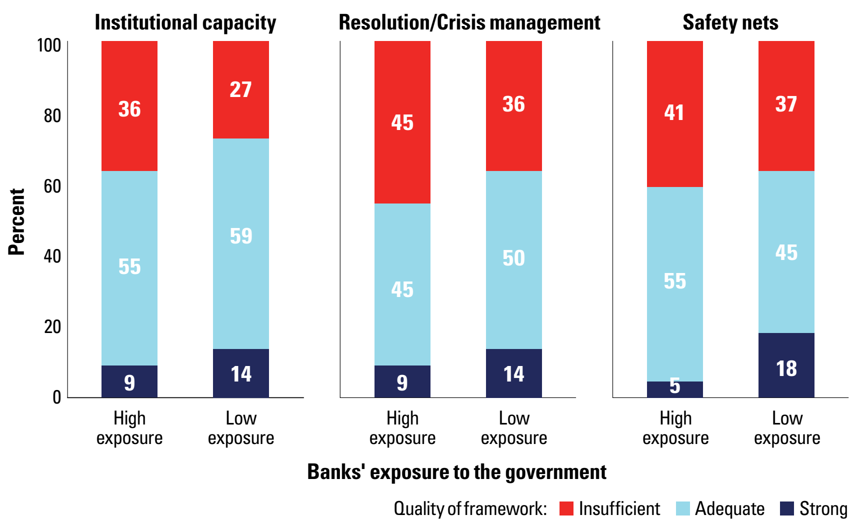
In *Lebanon*, in the absence of policy action, deleveraging in the financial sector happened by de facto redenomination in local currency (“lirafication”) of assets and liabilities labelled in hard currency, with significant haircuts on both. This has led to triple-digit inflation rates. The absence of deliberate policies to protect smaller depositors who lack other sources of savings has been highly regressive (the local labor force, which was paid in local currency, and smaller businesses). Such measures are costly, lack transparency, and are unlikely to address the root of the problem. At the same time, no substantial actions have been taken yet in response to the crisis owing to complex political economy environment.

Financial Sector Policy Implications

EMDE banking authorities should take various steps to address the sovereign-bank nexus, but they are not sufficient. Sound fiscal and other policies to preserve public debt sustainability and macroeconomic stability are critical.[51] The following policy recommendations focus on what banking authorities can do to address key challenges in the sovereign-bank nexus accumulation, deterioration, and crisis phases. Nevertheless, authorities must account for unique country conditions and tailor their responses accordingly, as no single approach applies to all cases. For example, countries that have high bank exposures to the government tend to have weaker institutional frameworks to deal with financial stress compared to those with smaller exposures (figure 2.11).

FIGURE 2.11 Countries Where Banks' Exposure to the Government Is High Tend to Have Weaker Frameworks to Deal with a Financial Crisis

Quality of frameworks in countries with high versus low banks' exposure to the government (percent of countries in sample by level of exposure)



Sources: World Bank staff calculation based on based on IMF International Financial Statistics data and World Bank staff assessment (see chapter 1).

Note: Sample includes 50 EMDEs. Figures may not equal 100 because of rounding. See appendix B for specific countries. "High sovereign-bank nexus" is defined as countries that have a banking sector lending exposure to the government as percent of total assets above the median (standing at 16.5 percent) across the sample. "Low" is defined as countries that have a banking sector lending exposure to the government as percent of total assets below the median across the sample.

Accumulation Phase

Financial sector policies to avoid an excessive buildup of the sovereign-bank nexus and better prepare the banking system to weather sovereign stress

Bank prudential requirements largely ignore the fact that local currency sovereign exposures carry default risk.[52] This treatment reflects, among other considerations, the foundational benefits of a safe asset in a domestic financial system and capital market, in terms of price discovery, price reference (benchmark yield curve), collateral, and so on. The prudential regimes of EMDEs replicate provisions set by the Basel Committee on Banking Supervision for internationally active banks only. These require banks to hold a minimum amount of domestic sovereign exposures for liquidity purposes and do not otherwise constrain their holdings: (a) banks have to hold minimum buffers of High-Quality Liquid Assets, largely in the form of government bonds; (b) banks do not have to hold any capital against the risk of default of local currency sovereign exposures;[53] and (c) banks do not have to aggregate and limit all exposures connected to the sovereign. Only limited disclosure on their sovereign exposures is required from banks, which renders their balance sheets less transparent (BCBS 2017, 2021). Moreover, stress tests and other forward-looking risk-monitoring efforts have been rarely used to set higher requirements well ahead of potential sovereign stress. The International Accounting Standards Board's International Financial Reporting Standards (IFRS) treat sovereign exposures as any other exposure for impairment purposes—that is, require booking losses as they are identified. However, in practice, accounting valuations are often aligned with prudential ones (in other words, material impairments often occur only at the point of default, which is too late to affect risk taking and build buffers).

Prior to acute sovereign stress, prudential regulations can encourage banks to take on more, rather than less, risk. Government financing needs and domestic issuance tend to rapidly grow in the period preceding sovereign stress. Banks that change the composition of their assets in favor of domestic sovereign bonds will reduce their capital requirements[54] and improve their apparent liquidity situation in the process. By contrast, more prudent banks will exhibit relatively lower capital buffers and profitability, generating pernicious competitive pressures. Behaviors still vary significantly across banks as capital requirements are not the only driver of their risk appetite.[55] Prudential regulations set by policy makers should not diverge so dramatically from actual risks in times of crisis.

Key policy considerations for the accumulation phase include:

- **Banking authorities in EMDEs need effective governance and operational independence to decisively step in at an early stage to mitigate financial stability risks.** Rigorous implementation of Basel Committee on Banking Supervision (BCBS) standards (including reliable risk measurement, prudent capital and liquidity buffers, and effective risk management and governance) is an essential part of the policy response to better address sovereign risks. In addition, institutional setups (including mandates, operational independence, decision-making processes, and resources) are a key foundation to enable necessary actions. However, IMF/World Bank Financial Sector Assessment Programs (FSAPs) regularly observe weaknesses in these areas in EMDEs (see chapter 1 for details). Moreover, the supervisory culture is also often too bureaucratic and insufficiently risk- and action-oriented. Institution-specific and system-wide stress tests based on multiple severe worst-case scenarios should be used to take a forward-looking view of banks' resilience in the context of a possible domestic debt restructuring operation. Reverse stress tests, which can measure the intensity of a sovereign stress event that might cause banks to collapse (irrespective of the probability of such event), should also be part of the toolkit. Other simulations including case studies and crisis simulation exercises can also be useful to encourage out-of-the-box thinking and identify blind spots. These various exercises should be regularly updated and improved, and their outcomes used to affect banks' risk taking. Key findings should also be communicated with fiscal authorities so they can consider the financial stability aspects of their policies.

- **EMDEs should consider judiciously topping up international standards for sovereign exposures to foster more prudent risk taking by banks, including by introducing granular disclosure requirements for banks' exposures to the government to strengthen market discipline and exploring the benefits and drawbacks of introducing capital charges for local currency exposures.** Initiatives launched in the wake of the 2010–12 sovereign debt crisis in the euro area to revisit international standards provide a well-designed variety of options (ESRB 2015; Véron 2017; BCBS 2017). Some of these proposals have been (and still are) under discussion and debate, given their potential negative impact on the role of government securities in the functioning and development of domestic capital markets as well as on the cost of debt for sovereign issuers, among other issues. Given their specific circumstances, EMDEs should explore whether some of these proposals could complement their own regimes. There are two main regulatory aspects to consider:[56] (a) setting harmonized definitions of each type of government exposure (by type of instrument and counterpart, for direct and indirect exposures) with associated periodic reporting and disclosure requirements, and (b) exploring capital charges for local currency sovereign exposures with a range of possible options, including low capital charges for all banks irrespective of sovereign creditworthiness (such as a 5–10 percent risk weight) or only when the creditworthiness is poor[57] (with a challenging task to find reliable indicators for such a purpose), as well as possible incremental increases in capital charges only for banks with excessive sovereign exposures (such as gradually increasing risk weights for exposures that exceed certain shares of capital, as noted in ESRB (2015), Véron (2017),[58] and BCBS (2017)). Considering capital charges that go beyond international standards is particularly relevant for jurisdictions that have experienced past episodes of sovereign debt distress (or currently face significant risks of debt distress) and have bank-dominated financial sectors—these tend to be lower-income EMDEs. So far, such measures have not been implemented, given their potential negative impact (as mentioned earlier), and they are in no way a panacea. Such measures may, however, help defuse the common perception that sovereign exposures are risk free, better align prudential metrics with actual risks, and incentivize more prudent risk taking. More broadly, such measures can also show that the authorities are willing to tackle the financial sector implications of sovereign risk and buttress their credibility. Whether this benefit outweighs the risks associated with implementing such measures requires a close analysis that authorities in EMDEs should initiate on a case-by-case basis. This is particularly relevant for jurisdictions that experienced past episodes of sovereign debt distress (or currently face significant risks of debt distress) and whose financial systems are bank dominated. The introduction of such measures also should include appropriate phasing in and communication, to avoid pro-cyclical effects.

- **In the medium and long term, EMDEs should continue to promote the diversification of domestic financial investors and deepen capital markets, which will also help mitigate sovereign-bank nexus risks.** Well-regulated and well-supervised local capital markets play a vital role in enhancing financial stability—including through promoting their deepening and liquidity and providing investment opportunities beyond sovereign bonds for the banking sector to diversify its asset holdings. In turn, developing local institutional investors is also important for diversifying the holders of sovereign bonds—which also has the beneficial effect of deepening government bond markets and reducing funding costs (World Bank 2020). In addition, well-developed capital markets ensure that institutional investors do not suffer from the same sovereign bond portfolio concentration as the banking sector (Stewart, Despalins, and Remizova 2017).

Deterioration Phase

Consideration of financial stability risks when designing and implementing measures involving domestic debt restructuring to restore debt sustainability

Key policy considerations for the deterioration phase include:

Where the authorities are contemplating a domestic debt restructuring (DDR) to restore debt sustainability, financial stability implications need to be carefully considered at an early stage. When implemented, DDRs need to be (a) sufficiently deep in terms of net present value reductions to restore government debt sustainability while (b) avoiding triggering acute financial sector losses. The higher the sovereign-financial sector nexus (and the higher the share of outstanding government debt in the domestic financial sector), the more difficult it is to reconcile these two objectives. Possible capital shortfalls[59] and options to address them should be discussed among authorities (including banking supervisors, central banks, and fiscal authorities) to inform the DDR design, prepare the authorities' response, and minimize financial stability risks.

Crisis Phase

Mitigation of financial sector stress in the most acute phases of sovereign stress by navigating trade-offs[60]

The response to sovereign stress that wipes out most of a banking system's capital[61] entails difficult trade-offs. The more severe the shock, the higher fiscal resources will be required to preserve core banking services. The response requires an unwelcome re-prioritization of resources from core public services toward bank stabilization and should be minimized by having in place clear objectives, appropriate financial sector tools, and a structured decision-making process. However, where an entire banking system is insolvent, public resources and difficult decisions to allocate losses and clean up the sector (by exiting some institutions) will be needed.

Key policy considerations for the crisis phase include the following:

- **The introduction and operationalization of financial safety nets require urgent attention in many EMDEs (also see chapter 1).** These policy changes require sustained, long-term efforts to achieve completely, but significant progress focused on immediate risks is achievable and should be aggressively pursued and practiced (including drafting key legal amendments to enable swift adoption and implementation, establishing doctrine for decision-making, information gathering, and so on). The key building blocks of financial safety nets are (a) resolution arrangements to orderly exit failed banks and preserve key functions, (b) deposit insurance to protect covered deposits and preserve depositor confidence in the banking system, (c) Emergency Liquidity Assistance (ELA) to provide short-term liquidity to viable banks, and (d) effective and proportionate supervision to ensure that all banks meet safety and soundness requirements or are intervened (Dobler, Moretti, and Piris 2020; FSI 2021).[62] Despite progress, FSAPs still frequently recommend significant improvements, including legal powers (such as, appropriate safeguards in valuation and allocating of losses and robust legal protection for officers taking action) and even more important, operational readiness of the supervisory and resolution authority (see chapter 1 analysis).[63]

- **Credible objectives, which are the foundation of an effective response to financial stability risks triggered by sovereign stress, must be identified.** Such objectives should aim to minimize the impact of the shock and preserve key banking services to facilitate a countercyclical response (at the lowest cost to public finances). These goals should be realistic and agreed upon by fiscal, monetary, and financial sector authorities so that public actions and communications can be well-coordinated (within each authority's mandate). These are difficult tasks, even where there is established coordination among authorities. The credibility of a crisis response is still often initially weakened by excessive ambitions disconnected from actual means (such as expecting all banks to continue to operate as they did prior to the shock) and a lack of specifics.

- **Policy makers must be willing to act decisively despite challenging circumstances.** One important risk lies in delaying loss recognition and leaning excessively on forbearance and (uncertain or unavailable) public resources rather than on implementing necessary resolution actions.[64] Key elements to overcome such challenges are (a) preparedness (including clear guiding principles for decisions), (b) effective collaboration across authorities,[65] (c) robust institutional setup, and (d) having the right key individuals in charge (a decisive factor in many cases, which sometimes impedes the crisis response).

- **A rapid viability assessment of all individual banks should guide crisis responses.** Unlike in normal times, this assessment cannot be done simply by looking at prudential and financial indicators, as they do not adequately reflect actual and forward-looking risks (such as capital adequacy or profitability indicators). There is a high degree of uncertainty around the point of default regarding immediate losses for banks, as well as around second-round losses and the future environment in which banks will operate (such as credit demand, interest rates, systemic liquidity, government debt market, growth, and defaults). Authorities should rapidly conduct viability assessments to ascertain the ability of banks to sustain their operations (based on multiple scenarios informing quantitative projections of cash flows to determine the banks' economic values and assess their business models in the new environment). This should allow for a triage among banks between (a) those that appear viable on their own, (b) those that can be viable if supported by their shareholders, (c) those that are systemic and can only be viable with public support, and d) those that are clearly no longer viable. These measures should inform public action accordingly, including monitoring recapitalization plans, activity reductions, or closures. Because ministries of finance and financial sector authorities often operate too much in silos, policy coordination is key. The authorities should also contemplate an independent system-wide asset quality review, especially once second-round effects have played out, to ensure figures are reliable and no "zombie" banks continue to operate, thereby further strengthening trust in the banking system and confidence in the resolve of the authorities.

- **The immediate crisis response should consider medium-term implications, including setting sound incentives for the development of banking intermediation.** In times of crisis, policy makers naturally tend to (a) focus on the immediate (such as avoiding any bank failure) and neglect the medium-term implications (such as ultimate fiscal costs, credit availability, and a competitive environment with "zombie" banks) and (b) adopt an all-hands-on-deck approach that can blur delineations of responsibilities among institutions, potentially creating negative long-term impacts on financial sector governance and the credibility of financial sector authorities. Well-considered objectives and crisis preparedness can help alleviate such risks. Moreover, SOBs are often directly instructed (including through moral suasion) to support government financing needs as sovereign stress intensifies, which jeopardizes hard-won progress in the relationship between the government and the banks it controls. As part of the crisis response, authorities should ensure that their relationships with SOBs are guided by good governance and sound commercial practices, rather than directing institutions to meet urgent public needs without proper attention to risks and medium-term implications on banks' viability.

Notes: Chapter 2

31. This is particularly relevant for jurisdictions that have experienced past episodes of sovereign debt distress (or currently face significant risks of debt distress) and have bank-dominated financial sectors.
32. While they are often underdeveloped in EMDEs, nonbank financial institutions such as pension funds or investment vehicles also often accumulate government debt holdings, which can be sizable relative to their balance sheets. These institutions fall outside the scope of this chapter.
33. Government debt is defined as bank claims on central government debt, claims on state and local government debt, and claims on public nonfinancial corporations, following International Monetary Fund (IMF) International Finance Statistics definitions.
34. See also World Bank (2022), which discusses the proactive management and reduction of sovereign debt.
35. Here, "sovereign debt" refers to general government gross debt consisting of all liabilities (foreign and domestic) that require payment or payments of interest, the principal, or both by the debtor to the creditor at a date or dates in the future. This includes debt liabilities in the form of special drawing rights (SDRs), currency and deposits, debt securities, loans, insurance, pensions and standardized guarantee schemes, and other accounts payable.
36. A country is defined here as being distressed if either the EMBI spread is above 1,000 or the Debt Sustainability Assessment indicates "high" or "distressed" external debt risk.
37. Out of 33 EMDEs with high government exposures of banks (where government debt is more than 20 percent of bank assets), 16 countries face high government debt risks.
38. This observation is silent on the direction of causality. Credit rating downgrades may lead to an increase in banks' exposures to the government as foreign investors retrench, and vice versa (also see figure 2.6).
39. The database of Erce, Mallucci, and Picarelli (2024) contains 68 domestic default episodes from 116 domestic restructuring events, where the authors focus exclusively on events involving bonds or bank loans. Domestic debt is hereby defined as the jurisdiction of the market of issuance of the debt instruments involved. Maturity extension is the most common amendment during both domestic and external restructurings, while face value reductions are rare, particularly in domestic debt restructurings. The rarity of face value reductions can be attributed to financial stability considerations. This results in 32 domestic sovereign bond restructuring events between 1980 and 2018 where the average net present value (NPV) loss associated with those events is at 40 percent for investors.
40. Held-to-maturity (HTM) portfolios are not considered risk-free and are subject to impairment testing and charges. However, market value changes and interest rate fluctuations do not affect them.
41. A sudden stop crisis refers to a sharp decrease of gross capital inflows (driven by foreigners), as defined by Forbes and Warnock (2011).
42. This examination of the combined effects of government debt and banking crises builds upon earlier studies by Kaminsky and Reinhart (1999) and Cerra and Saxena (2008), which identified a significantly greater impact from a "twin crisis" involving both financial and currency turmoil.
43. Banks' government exposures consist of loans, securities, and other commitments (including lines of credit, guarantees, and swaps) to the central government, state-owned enterprises (SOEs), and other public sector entities. Information on many of these is generally not available (including on SOE exposures, which can be large). There is also limited information on the composition of this debt regarding the maturity profile and currency composition. Moreover, banks' government exposures often turn out to be much larger after crises unfold, which calls for caution when analyzing the limited quantitative information available at a point in time.
44. In jurisdictions that apply International Financial Reporting Standards (IFRS), securities are usually split between Available for Sale (with recognition of fair value gains and losses) and Held to Maturity (without such recognition). Where there are no deep active markets, fair valuation judgments can be subjective and may diverge significantly across banks. Moreover, for prudential purposes, some jurisdictions require banks to comprehensively deduct fair value losses, while others do not.
45. These findings are in line with the literature (such as World Bank 2023b; Palmén 2020; Williams 2018; CGFS 2011).
46. In Ghana, Lebanon, Pakistan, and Sri Lanka.
47. See Baskaya et al. (2023) for an analysis of implications of biophysical extreme events, such as the 1999 Turkish earthquake, on sovereign risk and bank balance sheets.
48. In the absence of regulatory action, banks in Lebanon unilaterally imposed selective controls on deposits.
49. This inflated the numerator of the capital adequacy ratio. In addition, local currency exposures received a 0 percent risk weight, reducing the risk-weighted assets that constitute the denominator of the capital adequacy ratio.
50. Factors (a) and (b) are outside the scope of this chapter, and (c) is discussed in the next section.
51. See Kose et al. (2022) for a review of different options for governments to reduce the government debt burden.
52. Other risks (in particular interest rate, liquidity, and foreign exchange risks) are treated similarly for sovereign and for other exposures (that is, no specific approach). These factors are not treated in this section, but the 2023 failures of three US regional banks were a stark reminder that these risks also require prudent regulatory and supervisory approaches.
53. The standardized approach for credit risk for sovereign exposures essentially differentiates between (a) the sovereign (and central bank) with local currency exposures receiving a 0 percent risk weight (as this discretion is widely implemented) and foreign currency exposures receiving a risk weight based on external credit rating (0 percent for AAA to AA- ratings down to 150 percent when below B-) and (b) claims on noncentral government public sector entities (PSEs), which are risk weighted as exposures to banks (with discretion to treat certain PSEs as claims on the sovereign). Claims on state-owned enterprises (SOEs) are treated as corporate exposures (BCBS 2017).
54. As a simple illustration, a bank with capital of $10 and assets consisting of $75 of credit (100 percent risk weighted) and $25 of government securities (0 percent risk weighted) has a capital adequacy ratio (CAR) of 13.3 percent. When it shifts $25 away from credit and toward government securities (with each portfolio now of $50), its CAR increases to 20 percent. If the bank decides to keep its regulatory capital

buffer constant, it can return a third of its capital to its shareholders (or use it for other purposes).

55. The ownership of a banking system matters in this context as subsidiaries of foreign financial institutions may be less inclined or able to grow domestic sovereign exposures (owing to prudential requirements at a group level as well as parent and home supervisors' views on associated risks).
56. Other aspects that can be considered include the liquidity and the concentration regimes, which are not discussed here.
57. Including the possibility of macrofinancial buffers, which are only activated in such cases.
58. For example, capital charges could have unintended consequences if they are not carefully calibrated or introduced in a well-sequenced manner.
59. Rigorous forward-looking analyses and coordination among key public stakeholders are needed to consider financial stability dimensions at the design stage of any DDR. Complementing prudential metrics (which do not adequately capture such risks), these efforts should build on the analytical and stress-testing capacities of the banking supervision and (central bank) financial stability departments. In addition to updating bank-by-bank information on capital and liquidity buffers, this effort requires granular analyses of NPV reductions for each instrument covered by DDRs (using various discount factors to compute NPVs), complemented by forward-looking risk analyses (such as other expected defaults, exchange rate fluctuations, and so on.). Such exercises are challenging because information collection and computation are cumbersome and staffing is often constrained (especially as analysis must be accomplished under tight deadlines and repeated to consider various DDR parameters and updated data).
60. This paragraph covers only the financial sector component of such response, notwithstanding the importance of other macroeconomic responses that affect losses and liquidity strains (including in foreign currencies).
61. As a simplified illustration, for a banking system with a leverage ratio of 5 (that is, $1 in capital for $20 in non-risk-weighted assets) and 20 percent of assets in the form of sovereign securities, a 25 percent markdown of such securities (to recognize lower expected cash flows) wipes out the entire banking system's capital. This is a credible scenario, with some recent shocks being much more severe.
62. A detailed discussion of each of the components of financial safety nets falls beyond the scope of this piece.
63. For example, detailed risk exposures, detailed deposit and liability structure, recovery plans, measurement of interconnections, and linkages with critical infrastructures. Cross-border banking groups and financial conglomerates, including regional ones, play a decisive role in some countries. Stresses in some of their entities, or across groups / conglomerates, are particularly challenging to manage and require ex ante well-developed financial safety nets that address their specifics and ensure effective collaboration across key national authorities.
64. Where banks become effectively undercapitalized after a sovereign-stress episode and bank owners will not support them, authorities are left with three main options: (a) practice forbearance (that is, permit temporary noncompliance with some prudential requirements), including possibly allowing a bank to temporarily operate with insufficient buffers until it can make enough profits to generate new ones (often with negative impacts on risk taking, ultimate losses, and credit availability); (b) aim to mobilize scarce public resources to support a bank (with reduced resources for other government priorities beyond the financial sector and a difficult negotiation where existing owners are diluted); and (c) wipe out owners before using resolution tools to take over a bank and restructure or liquidate its activities (with the challenge that owners who supported the government may now lose their investments in banks, possibly in favor of the government). Where a crisis affects a large portion of the banking system, some combination of these options can be appropriate.
65. Including to avoid that they primarily aim to pass final costs to another authority.

References: Chapter 2

Acharya V., I. Drechsler, and P. Schnabl. 2014. "A Pyrrhic Victory? Bank Bailouts and Sovereign Credit Risk." Journal of Finance 69 (6): 2689–739.

Arslanalp, S., and T. Tsuda. 2014. "Tracking Global Demand for Emerging Market Sovereign Debt." IMF Working Paper 2014/39, International Monetary Fund, Washington, DC.

Asonuma, T. and C. Trebesch. 2016. "Sovereign Debt Restructurings: Preemptive or Post-Default." Journal of the European Economic Association 14 (1), 175–214.

Baskaya, Y. S., B. Hardy, S. Kalemli-Ozcan, and V. Yue. 2023. "Sovereign Risk and Bank Lending: Evidence from 1999 Turkish Earthquake." BIS Working Paper 1093, Bank for International Settlements, Basel, Switzerland.

BCBS (Basel Committee on Banking Supervision). 2017. "The Regulatory Treatment of Sovereign Exposures." Discussion Paper, Bank for International Settlements, Basel, Switzerland.

BCBS (Basel Committee on Banking Supervision). 2021. "Voluntary Disclosure of Sovereign Exposures." Bank for International Settlements, Basel, Switzerland.

Borio C., M. Farag, and F. Zampolli. 2023. "Tackling the Fiscal Policy-Financial Stability Nexus." BIS Working Papers 1090, Bank for International Settlements, Basel, Switzerland.

Bova, E., M. Ruiz-Arranz, F. Toscani, and H. Ture. 2016. "The Fiscal Costs of Contingent Liabilities: A New Dataset." IMF Working Paper 2016/14, International Monetary Fund, Washington, DC.

Cerra, V., and S. Saxena. 2008. "Growth Dynamics: The Myth of Economic Recovery." American Economic Review 98 (1): 439-57.

CGFS (Committee on the Global Financial System). 2011. "The Impact of Sovereign Credit Risk on Bank Funding Conditions." CGFS Papers 43, Bank for International Settlements, Basel, Switzerland.

Dobler M., M. Moretti, and A. Piris. 2020. "Managing Systemic Banking Crises: New Lessons and Lessons Relearned." IMF Working Paper 2020/05, International Monetary Fund, Washington, DC.

Erce, A., E. Mallucci, and M. Picarelli. 2024. "Sovereign Defaults at Home and Abroad." CEPR Discussion Paper 18739, Centre for Economic Policy Research, Paris and London.

ESRB (European Systemic Risk Board). 2015. ESRB Report on the Regulatory Treatment of Sovereign Exposures. Frankfurt, Germany: ESRB.

Feyen, E., and I. Zuccardi. 2019. "The Sovereign-Bank Nexus in EMDEs: What Is It, Is It Rising, and What Are the Policy Implications?" Policy Research Working Paper 8950, World Bank, Washington, DC. Forbes, K. J., and F. E. Warnock. 2011. "Capital Flow Waves: Surges, Stops, Flight, and Retrenchment." NBER Working Papers 17351, National Bureau of Economic Research, Cambridge, MA.

FSI (Financial Stability Institute). 2021. "Managing Banking Crises in Emerging Market Economies." FSI Insights on Policy Implementation 38, Bank for International Settlements, Basel, Switzerland.

IMF (International Monetary Fund). 2022. "The Sovereign-Bank Nexus in Emerging Markets: A Risky Embrace." Global Financial Stability Report, chapter 2. Washington, DC: IMF.

IMF (International Monetary Fund). 2024. World Economic Outlook: Steady but Slow: Resilience amid Divergence. Washington, DC: IMF.

Jordà, Ò., M. Schularick, and A. M. Taylor. 2013. "When Credit Bites Back." Journal of Money, Credit and Banking 45 (2): 3–28.

Kaminsky, L., and C. Reinhart. 1999. "The Twin Crises: The Causes of Banking and Balance-of-Payments Problems." American Economic Review 89 (3): 473–500.

Kose, A., Ohnsorge, F., Reinhart, C., and K. Rogoff. 2022. "The Aftermath of Debt Surges." Annual Review of Economics 14 (1): 637–63.

Laeven, L., and F. Valencia. 2018. "Systemic Banking Crises Revisited." IMF Working Paper 2018/206, International Monetary Fund, Washington, DC.

Laeven, L., and F. Valencia. 2020. “Systemic Banking Crises Database: A Timely Update in COVID-19 Times.” CEPR Discussion Paper DP14569, Centre for Economic Policy Research, Paris and London.

Malinen, T., and O. Ropponen. 2022. “To Default or Not? The Aftermath of Sovereign Defaults and IMF Austerity Programs during Economic Crises.” World Economy 45 (7): 2052–83.

Ongena, S., A. Popov, and N. Van Horen. 2019. “The Invisible Hand of the Government: Moral Suasion during the European Sovereign Debt Crisis.” American Economic Journal: Macroeconomics 11 (4): 346–79.

Palmén, O. 2020. “Sovereign Default Risk and Credit Supply: Evidence from the Euro Area.” Journal of International Money and Finance 109 (C).

Panizza, U. 2023. “State-Owned Commercial Banks.” Journal of Economic Policy Reform 26 (1): 44–66.

Reinhart, C. M., and K. S. Rogoff. 2009a. This Time Is Different: Eight Centuries of Financial Folly. Princeton, NJ: Princeton University Press.

Reinhart, C. M., and K. S. Rogoff. 2009b. “The Aftermath of Financial Crises.” American Economic Review 99 (2): 466–72.

Stewart, F. E., R. Despalins, and I. Remizova. 2017. “Pension Funds, Capital Markets, and the Power of Diversification.” Policy Research Working Paper 8136, World Bank, Washington, DC.

Véron, N. 2017. “Sovereign Concentration Charges: A New Regime for Banks’ Sovereign Exposures.” Bruegel & Peterson Institute for International Economics report for the European Parliament, Brussels, Belgium.

Williams, T. 2018. “Financial Repression and Bank Lending: Evidence from a Natural Experiment in an Emerging Market.” All About Finance (blog), June 11, 2018. https://blogs.worldbank.org/allaboutfinance/.

World Bank. 2020. Capital Markets Development: A Primer for Policymakers. Washington, DC: World Bank.

World Bank. 2022. World Development Report 2022: Finance for an Equitable Recovery. Washington, DC: World Bank.

World Bank. 2023a. South Asia Economic Focus: Expanding Opportunities: Toward Inclusive Growth. Spring. Washington, DC: World Bank.

World Bank. 2023b. South Asia Development Update: An Ounce of Prevention, a Pound of Cure: Averting and Dealing with Sovereign Debt Default. Washington, DC: World Bank.

ICMA (International Capital Market Association). 2021. “Overview and Recommendations for Sustainable Finance Taxonomies.” ICMA, Zurich, Switzerland.

IMF (International Monetary Fund). 2022. “Mexico: Financial Sector Assessment Program—Technical Note on Climate Risk Analysis.” IMF Country Report 2022/360, IMF, Washington, DC.

Khatkhate, D. 1991. “The Central Bank’s Role in Financial Sector Development.” In The Evolving Role of Central Banks, edited by P. Downes and R. Vaez-Zadeh, 16–29. Washington, DC: International Monetary Fund.

Köberle, A. C., T. Vandyck, C. Guivarch, N. Macaluso, V. Bosetti, A. Gambhir, M. Tavoni, and J. Rogelj. 2021. “The Cost of Mitigation Revisited.” Nature Climate Change 11: 1035–45.

Mahul, O., and C. J. Stutley. 2010. Government Support to Agricultural Insurance: Challenges and Options for Developing Countries. Washington, DC: World Bank.

Miguel, F., A. Pedraza, and C. Ruiz-Ortega. 2022. “Climate Change Regulations: Bank Lending and Real Effects.” Policy Research Working Paper 10270, World Bank, Washington, DC.

NGFS (Network for Greening the Financial System). 2019. “A Call for Action: Climate Change as a Source of Financial Risk.” NGFS First Comprehensive Report, April.

NGFS (Network for Greening the Financial System). 2021. “Adapting Central Bank Operations to a Hotter World Reviewing Some Options.” NGFS Technical Document, March.

NGFS (Network for Greening the Financial System). 2023a. “Stocktake on Financial Institutions’ Transition Plans and Their Relevance to Micro-prudential Authorities.” NGFS Technical Document, May.

NGFS (Network for Greening the Financial System). 2023b. “Micro-prudential supervision of climate-related litigation risks”

NGFS (Network for Greening the Financial System). 2023c. “Compound risks: Implications for physical climate scenario analysis.” November.

Nie, O., N. Dunz, H. Pollitt, and R. Brazil-De Vera. 2024. A Climate Transition Risk Assessment for the Banking Sector of the Philippines. EFI Insight-Finance. Washington, DC: World Bank

OECD (Organisation for Economic Co-operation and Development). 2022. Global Outlook on Financing for Sustainable Development 2023: No Sustainability Without Equity. Paris: OECD Publishing.

Pesme, J., N. Verma, and J. Zhao. 2023. “New Pathways towards Mobilizing Private Capital.” Private Sector Development (blog), October 26, 2023. https://blogs.worldbank.org/psd/.

Pigato, M. A., ed. 2019. Fiscal Policies for Development and Climate Action. International Development in Focus. Washington, DC: World Bank.

Ranger, N., O. Mahul, and I. Monasterolo. 2022. Assessing Financial Risks from Physical Climate Shocks: A Framework for Scenario Generation. Washington, DC: World Bank.

Reinders, H. J, M. G. J. Regelink, P. Calice, M. E. Uribe. 2021. Not-So-Magical Realism: A Climate Stress Test of the Colombian Banking System. Washington, DC: World Bank

Ritchie, H. 2020. “Sector by Sector: Where Do Global Greenhouse Gas Emissions Come From?” Our World in Data. https://ourworldindata.org/ghg-emissions-by-sector.

Rockefeller Foundation and Boston Consulting Group. 2022. Climate Finance Funding Flows and Opportunities: What Gets Measured Gets Financed. New York: Rockefeller Foundation.

Rozenberg, J., and Fay, M. 2019. Beyond the Gap: How Countries Can Afford the Infrastructure They Need While Protecting the Planet. Washington, DC: World Bank.

Schnabel, I. 2020. “When Markets Fail: The Need for Collective Action in Tackling Climate Change.” Speech at the European Sustainable Finance Summit, Frankfurt, Germany, September 28.