

Emerging markets have shown remarkable resilience to risk-off shocks in recent years. While favorable external conditions—good luck—contributed to this resilience, improvements in policy frameworks—good policies—played a critical role in bolstering the capacity of emerging markets to withstand risk-off shocks. Evidence suggests that monetary policy implementation and credibility have improved, with central banks becoming less sensitive to fiscal pressures and relying less on foreign exchange interventions. Central banks also hold sway over domestic borrowing conditions, although spillovers from US monetary policy remain influential. On the fiscal side, countercyclicality and responsiveness to sustainability concerns have increased, though borrowing costs remain elevated in high-debt environments. Looking ahead, emerging markets with strong frameworks are better positioned to navigate risk-off shocks because they benefit from easier policy trade-offs and face a lower risk and severity of capital flow reversals. In contrast, countries with weak frameworks should avoid delaying monetary tightening when sustained price pressures emerge, as doing so typically results in de-anchoring of inflation expectations and larger output losses. Foreign exchange interventions provide temporary relief, but they are costly. Strong policy frameworks lessen both reliance on—and the need for—such measures. Given uneven cross-country progress and the erosion of fiscal buffers in some cases, continued efforts to strengthen policy frameworks, safeguard central bank independence, and rebuild fiscal space remain essential, as the external environment could deteriorate rapidly.

Introduction

Emerging markets have historically been vulnerable to global financial shocks, often experiencing significant economic and financial instability during periods of heightened risk aversion—commonly referred to

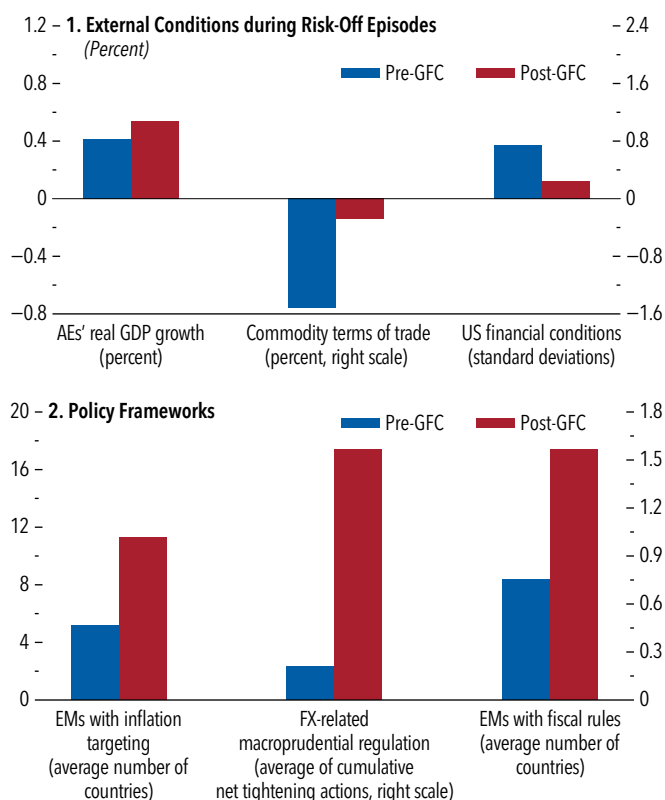
as “risk-off” episodes (Caballero and Kamber 2019; Miranda-Agrippino and Rey 2020a). These shifts in the risk appetite of global investors have typically triggered capital outflows, leading to currency depreciations that tightened financial conditions, owing to currency mismatches and increased borrowing costs (Chari, Dilts Stedman, and Lundblad 2020; Goldberg and Krogstrup 2023). As a result, risk-off shocks have been akin to supply shocks because they ultimately cause output losses and inflation surges, complicating policy trade-offs. These dynamics have defined the dilemma faced by emerging markets, which generally could not react to a shock leading to a capital outflow that depreciates the currency with monetary policy easing, because of price and financial stability concerns. Instead, policymakers often needed to tighten policies, exacerbating output losses and preventing currencies from depreciating, thereby fueling “fear of floating” (Ghosh, Ostry, and Qureshi 2017).

Recent experience marks a departure from this historical pattern, with many emerging markets displaying remarkable resilience—both in terms of financial and economic conditions—to external shocks (Hardy, Igan, and Kharroubi 2024).¹ Two hypotheses have emerged to explain this improved performance. One is simply that emerging markets got lucky: Steady growth in advanced economies, favorable terms of trade, and easier financial conditions after the global financial crisis helped mitigate external pressures (Figure 2.1, panel 1).² Emerging markets also benefited from spillovers from China’s sustained growth and its increasing integration in the global economy (Chapter 4 of the April 2024 *World Economic Outlook*). Moreover, despite rapid and sizable monetary tightening by major

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¹For a more general assessment of emerging markets’ performance in sustaining expansions and recovering from downturns, see Kose and Prasad 2010; Cerra, Panizza, and Saxena 2013; Abiad and others 2015; and Aizenman and others 2024, among others. Compared with this literature, the chapter focuses on emerging markets’ performance in response to risk-off shocks.

²This chapter uses a sample of 26 emerging markets—covering about 88 percent of GDP of emerging markets and middle-income economies—and 30 advanced economies (see Online Annex 2.1). All online annexes are available at www.imf.org/en/Publications/WEQ.

Figure 2.1. Changes in External Conditions and Policy Frameworks

Sources: Cobham 2025; Federal Reserve Board; IMF, Fiscal Rules Dataset; Gruss and Kebhaji 2019; Haver Analytics; IMF, Integrated Macroprudential Policy Database; and IMF staff calculations.

Note: Risk-off episodes are identified using an extended version of the RORO Index of Chari, Dilts Stedman, and Lundblad (2023)—see Online Annex 2.2 for details. The FX-related macroprudential regulation metric is calculated as the cross-country average of the cumulative net tightening actions related to capital requirements for banks; limits on foreign currency lending and rules or recommendations on foreign currency loans; and limits on net or gross open FX positions, FX exposures and funding, and currency mismatch regulations. Countries are classified as inflation targeting regimes according to Cobham (2025). External conditions are calculated as the weighted change in real GDP for AEs, the commodity price-based terms of trade index for EMs, and the average of the US FCI-G index, measured six months following the start of a risk-off episode. The pre-GFC period is 1997–2009, and the post-GFC period is 2010–24. AEs = advanced economies; EMs = emerging markets; FCI-G index = Financial Conditions Impulse on Growth index; FX = foreign exchange; GFC = global financial crisis; RORO Index = Risk-On Risk-Off Index.

central banks, the postpandemic global financial environment remained broadly accommodative, allowing many emerging market sovereign and corporate bond issuers to obtain long-term financing at historically low rates (Chapter 1 of the April 2025 *Global Financial Stability Report*).³ Finally, the relatively strong US recovery after the pandemic and the soft landing

³By contrast, prior to the global financial crisis, emerging markets were more vulnerable to currency, banking, and sovereign default crises (Gourinchas and Obstfeld 2012).

following the Federal Reserve's tightening cycle likely further dampened spillovers to emerging markets (Chen and Tillmann 2025).

Another, yet complementary, explanation is the “good policies” argument. This attributes resilience to adverse shifts in investor sentiment to changes in emerging markets' monetary, macroprudential, and fiscal frameworks (Figure 2.1, panel 2). While different frameworks and exchange rate regimes may be appropriate according to country circumstances, the adoption of inflation targeting and greater exchange rate flexibility has enhanced emerging markets' capacity to absorb external shocks (Obstfeld, Ostry, and Qureshi 2019) and stabilize macroeconomic conditions. As monetary policy frameworks matured, long-term inflation expectations became better anchored, reducing the pass-through of currency depreciation to domestic prices and the persistence of inflation (Campa and Goldberg 2005; Bems and others 2021; Carrière-Swallow and others 2021). Meanwhile, tighter macroprudential policies contributed to reducing foreign exchange mismatches, allowing countries to move away from “original sin” (currency mismatch) and facilitating more countercyclical monetary responses to external shocks (Bergant and others 2024).⁴ And enhanced fiscal credibility—through, for example, the implementation of fiscal rules—lessened fiscal dominance concerns and supported a trend toward de-dollarization of debt, containing sovereign risk premiums (Gomez-Gonzalez, Valencia, and Sánchez 2022; Apeti and others 2024). Stronger policy frameworks enabled better policies while also providing access to IMF precautionary instruments, which helped countries navigate recent shocks by containing capital outflows and limiting the rise in borrowing costs (Box 2.1).⁵

⁴Improvements in governance and institutional capacity, particularly in debt management, have also contributed to greater resilience, supporting domestic borrowing at longer maturities and fostering the development of deeper local currency bond markets. An increase in the share of local currency debt and in domestic investors' participation in emerging markets with strong policy frameworks have reduced the risks stemming from both “original sin” (currency mismatch) and “original sin redux” (nonresident outflows)—see Chapter 3 of the April 2025 *Global Financial Stability Report*. Similarly, evidence suggests that advances in foreign exchange hedging instruments in some emerging markets have improved the currency composition of sovereign balance sheets (Alfaro, Calani, and Varela 2021) and enhanced monetary policy transmission (Erel and others 2023; Liang, Sampaio, and Sarkisyan 2024).

⁵Das, Gopinath, and Kalemli-Özcan (2022) show that preemptive capital flow measures can also lower external finance premiums in the aftermath of risk-off shocks, enabling countries' continued access to international capital markets during troubled times.

The severity of the COVID-19 shock and the postpandemic inflation surge put policy frameworks to the test. Many central banks in emerging markets—especially those with stronger policy frameworks—responded to postpandemic inflation with swifter and more forceful monetary tightening than in previous cycles and, in many cases, earlier than their advanced economy counterparts, pointing to increased monetary policy autonomy. In some cases, unconventional monetary policy tools were also deployed (Acosta-Henao and others 2024; Chapter 4 of the April 2021 *World Economic Outlook*) without causing notable movements in exchange rates and capital flows. While concerns about capital outflows and currency stability remained relevant, policy decisions were more clearly driven by domestic inflation considerations than in the past, when tightening was often motivated by the need to defend exchange rates.⁶ In some cases, foreign exchange reserves were also deployed to counter excessive currency pressures, yet reserve buffers have remained at historically robust levels (Adrian, Natalucci, and Wu 2024). The picture is more nuanced, however, when it comes to fiscal policies. The fiscal stance in emerging markets—measured as the primary-balance-to-GDP ratio—has been relatively restrained, marking a notable shift from past crises, when consolidation was often delayed. However, the presence of fiscal rules did not guarantee improvements in policy implementation—as unwarranted deviations from fiscal rules are common (Alonso and others, forthcoming)—leading to the buildup of debt vulnerabilities, especially in Latin America (see the October 2024 *Regional Economic Outlook* for the Western Hemisphere). Similarly, although domestic investors have increased their participation in local currency debt markets, financial stability risks are still salient, especially in countries with weaker policy frameworks (Chapter 3 of the October 2025 *Global Financial Stability Report*).

This chapter takes stock of emerging market performance in output and inflation stabilization during risk-off episodes over almost three decades. It examines the evolution of monetary, macroprudential, and fiscal policy frameworks along different dimensions, and it quantifies the gains from improved policy trade-offs. The analysis seeks to determine the extent to which emerging market resilience is structural and sustainable—rooted in enhanced policy frameworks—or the result of favorable, yet changing, external

conditions. As emerging markets prepare for a potentially more challenging global financial landscape (see Chapter 1), a clearer understanding of these underlying drivers is crucial for designing future policy strategies to mitigate risks.

To achieve these objectives, the chapter addresses the following questions:

- *How did emerging markets fare during risk-off episodes?* How have emerging markets performed during risk-off shocks? Have they been more resilient during recent episodes, both according to real and financial indicators, compared with earlier ones?
- *How have policy frameworks evolved in emerging markets?* Has the conduct of monetary policy shifted from a focus on exchange rates and inflation toward addressing domestic demand shortfalls as a result of better-anchored inflation expectations? Has monetary policy become more credible? Does monetary policy steer domestic financial conditions or do these remain driven largely by US monetary policy? Have improved frameworks reduced the need for foreign exchange interventions? Has fiscal policy become more countercyclical? Have fiscal frameworks gained credibility and strengthened debt sustainability?
- *To what extent can recent emerging market resilience be attributed to good luck (that is, benign external conditions) instead of good policies?* How large is the contribution of improved policy frameworks to the better output and inflation performance of these economies during risk-off episodes? How does it compare with the contribution of external factors?
- *How should emerging markets deal with future risk-off shocks?* What gains in policy trade-offs do improved policy frameworks accrue? What is the appropriate mix and timing of policy responses for countries with weaker policy frameworks during episodes of global financial stress?

To answer these questions, the chapter first compiles stylized facts about the performance of emerging markets during risk-off episodes and contrasts this performance before and after the global financial crisis.⁷ It then sheds light on the improvements in policy

⁶Concerns about capital flight in the postpandemic period may have been lessened by the synchronized nature of the inflation surge.

⁷The choice of the global financial crisis as the date to split the sample is driven by data considerations. Since for many countries in the sample data coverage begins in the early 2000s, the global financial crisis allows for an equal number of risk-off episodes in the two subperiods. However, this does not imply that the crisis represents a structural break in emerging markets' performance in response to risk-off shocks. Rather, improvements in the policy framework are understood to have evolved gradually over time.

frameworks by moving beyond the de jure definition and focusing on their implementation, credibility, and outcomes. Finally, the chapter uses a quantitative version of the IMF's Integrated Policy Framework (IPF) to show how these improvements are reflected in better policy trade-offs and explores appropriate policy responses, depending on country-specific characteristics.

The chapter's main findings are as follows:

- *Emerging markets have historically been vulnerable to global risk-off events, but recent evidence points to increased resilience.* While the magnitude and duration of risk-off shocks have not meaningfully changed—nor have the underlying financial factors leading to these shocks—most emerging markets have displayed a remarkable degree of resilience to these episodes since the global financial crisis, experiencing smaller output contractions and negligible inflationary pressures.
- *The implementation and credibility of monetary policy have gradually improved over time, with emerging markets equipped with strong policy frameworks relying less on foreign exchange interventions.* In general, central banks in emerging markets have increasingly focused on output stabilization rather than exchange rate management, reflecting better-anchored inflation expectations. Financial markets' expectations also align more closely with actual policy decisions, signaling improved credibility. At the same time, emerging markets with better-anchored inflation expectations intervene less in foreign exchange markets in response to risk-off episodes, as the exchange rate pass-through tends to be lower and fear of floating is reduced. Similarly, more stringent macroprudential regulation limits the share of foreign currency debt, mitigating financial stability concerns and reducing the need for foreign exchange interventions.⁸
- *Central banks are less sensitive to fiscal pressures and retain traction over domestic borrowing conditions.* Before the global financial crisis, higher government spending often led to looser monetary policy and rising inflation expectations, but postcrisis spending shocks have been met with rate hikes, and long-term inflation expectations have remained anchored, as central banks have become more independent. Domestic monetary policy shocks transmit

effectively to short-term yields; however, US monetary policy still influences longer-term yields and riskier asset classes.

- *Emerging markets have made significant strides in implementing more effective fiscal policies, but borrowing costs remain sensitive to high debt levels.* Compared with the period before the global financial crisis, stronger fiscal frameworks have allowed fiscal policy to react more to slack—helping stabilize output during global downturns—and to debt sustainability pressures, improving countries' ability to stabilize debt, although sovereign spreads remain sensitive to debt burdens.
- *The resilience to risk-off shocks observed in recent years not only reflects benign external conditions, but it is also rooted in improved policy frameworks.* Comparing typical risk-off episodes after the global financial crisis with those before, the analysis estimates that improved policy frameworks accounted for 0.5 percentage point higher growth and 0.6 percentage point lower inflation. In contrast, favorable external conditions supported faster growth, contributing another 0.5 percentage point, but did not ease inflationary pressures.
- *Dilemma or trilemma?* Resilience to risk-off episodes, the diminished need for foreign exchange interventions in the presence of strong policy frameworks, and evidence of autonomy of domestic monetary policy are suggestive of a progressive transition toward a world that, while unequal across countries, appears to be characterized by the trilemma of the classic Mundell-Fleming framework and less by the dilemma described in Rey (2015), in which monetary policy independence is limited unless capital controls are used.

The chapter offers some policy recommendations to deal with future risk-off shocks:

- *Looking forward, efforts to strengthen policy frameworks should be sustained, as these enhance emerging markets' ability to withstand risk-off shocks by easing policy trade-offs and reducing the likelihood of sudden stops.* Model simulations suggest that strong policy frameworks reduce the extent of monetary policy tightening required to contain inflation, allowing a shift in focus toward output stabilization. In response to a 10 percent nominal exchange rate depreciation triggered by a risk-off shock, economies with strong policy frameworks—as in the period after the global financial crisis—experience 85 percent smaller output contractions in the

⁸Consistent with this development, the use of capital flow management measures also declined. For a broader discussion, see Bergant and others (forthcoming).

following year than economies with weak policy frameworks, as in the period before the crisis. In addition, improved balance sheets cut in half the risk of sudden stops—abrupt reversals of capital inflows into an economy—and reduce their severity.

- *Emerging markets with weak policy frameworks should avoid delaying monetary tightening.* Faced with risk-off and persistent cost-push shocks—as in the postpandemic environment—emerging markets with weak frameworks that hesitate to tighten the monetary stance encounter steeper costs later. In response to a 10 percent nominal exchange rate depreciation and a 0.5 percentage point increase in inflation, policy rates need to rise by as much as 1.4 percentage points more than in comparable emerging markets that follow a standard Taylor rule to eventually bring inflation back to target, resulting in output contractions that are 0.7 percentage point larger five quarters after the shocks.
- *Foreign exchange interventions help contain inflation and limit output losses associated with monetary tightening in countries with weak policy frameworks, but they are needed less when policy frameworks are strong.* In emerging markets with weak frameworks, foreign exchange interventions help contain the exchange rate depreciation triggered by the risk-off shock and reduce the need for rate hikes, ultimately lowering output losses by 0.9 percentage point two years after the shock compared with a no-intervention scenario. However, the benefits of foreign exchange interventions are marginal in countries with strong frameworks, where inflation expectations are already well anchored and the exchange rate supports net exports. These results validate the notion that foreign exchange interventions are a useful policy tool, but not a substitute for improved policy frameworks. In countries with strong policy frameworks, foreign exchange interventions become less relevant, repositioning policymakers in the trilemma, a world where they can opt for a flexible exchange rate and an independent monetary policy.

Despite significant progress, emerging markets' resilience will continue to be tested. While policy frameworks have strengthened, risks lie ahead: External conditions can quickly deteriorate, fiscal space is limited by high debt following recent global shocks, and policy backsliding undermines hard-won credibility. As improvements have been uneven across countries, maintaining and building on these gains will require a steadfast commitment to improving frameworks,

including by safeguarding central bank independence when inflation is low and fiscal pressures mount.

Emerging Market Resilience to Risk-Off Episodes

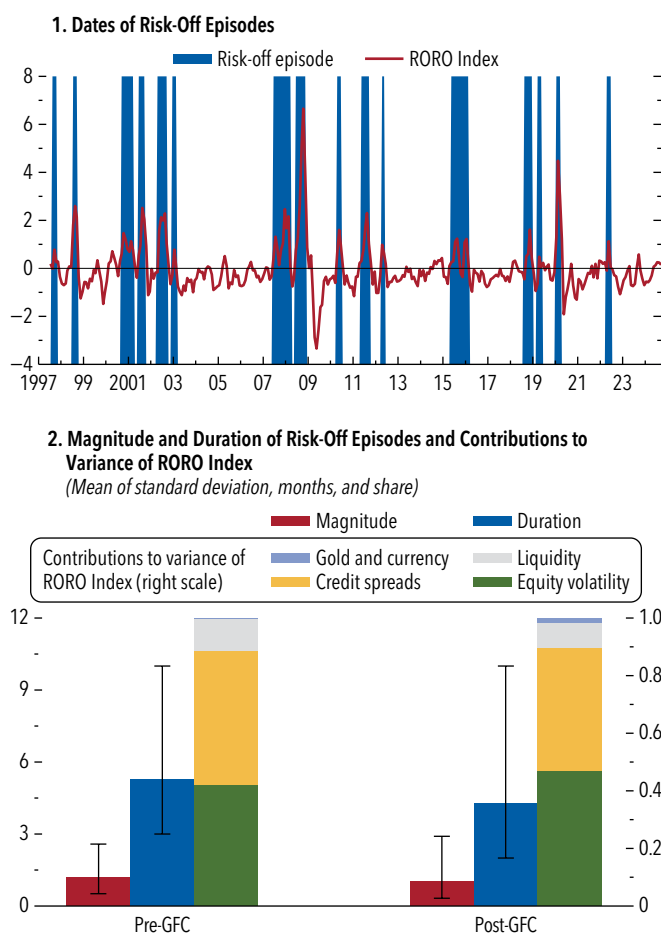
The global search for yield can generate destabilizing outcomes in emerging markets when risk appetite declines, leading to capital flight (Hofmann, Shim, and Shin 2016; Chari, Dilts Stedman, and Lundblad 2021, 2022). The sophistication of international capital markets results in a multitude of factors that can affect risk appetite. The Risk-On Risk-Off (RORO) Index of Chari, Dilts Stedman, and Lundblad (2023) is a multifaceted measure of these factors—encompassing equity volatility risks, credit risks, liquidity risks, and currency risks—that describes investors' willingness to take on, retain, or offload risky assets in advanced economies.

This chapter extends the original index starting in 1997 up to the end of 2024 and deploys an algorithm-based approach to date risk-off episodes.⁹ The 16 risk-off episodes identified by the algorithm are evenly split between the period before and after the global financial crisis. They correspond to well-known events, including the dot-com crash, the global financial crisis, the European sovereign debt crisis, and the COVID-19 pandemic (Figure 2.2, panel 1).¹⁰

On average, episodes before and after the global financial crisis are broadly comparable. The average risk-off episode registered an increase of about one standard deviation and lasted about five months in both periods (Figure 2.2, panel 2). The largest episodes were the global financial crisis itself and the pandemic; the longest were the subprime crisis starting in June 2007 and the global growth scare starting in May 2015 (both lasted 10 months). Moreover, an analysis of the proportion of the RORO's variation explained by each

⁹See Online Annex 2.2 for details about the algorithm used to date the episodes. Applying the algorithm to other indices of shifts in global risk aversion (for example, Bekaert, Engstrom, and Xu 2022) yields similar results.

¹⁰Similar to other risk-off episodes, the COVID-19 pandemic was characterized by heightened volatility and a widespread sell-off of risky assets. However, supply-side disruptions coupled with the outside policy response made the episode somewhat atypical. The 2013 taper tantrum is not identified as a risk-off episode because financial variables in advanced economies that feed into the RORO Index increased only modestly. In contrast with typical risk-off episodes, US bond yields increased sharply, consistent with a shock to US monetary policy rather than to an increase in risk aversion in advanced economies (Harikrishnan, Silk, and Yoldas 2023). However, the results are robust to the exclusion of the COVID-19 episode and the inclusion of the 2013 taper tantrum.

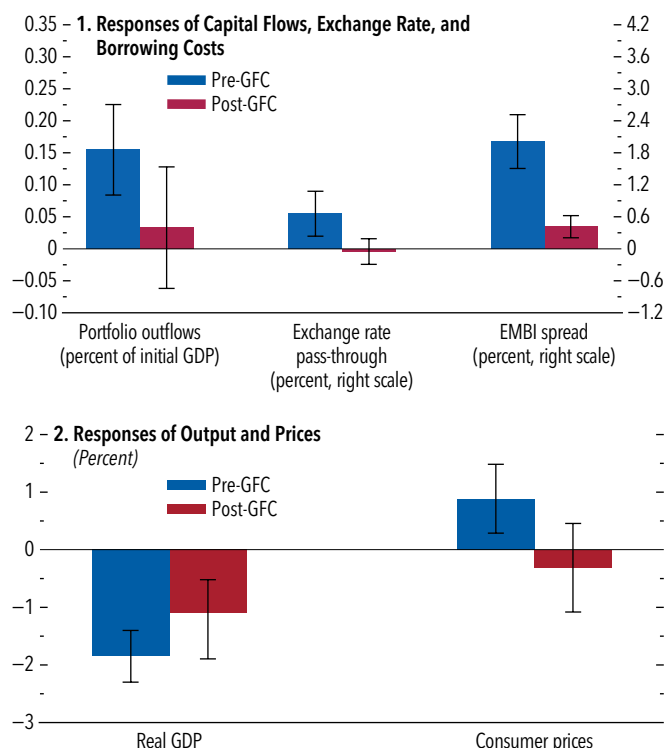
Figure 2.2. Dates and Features of Risk-Off Episodes

Sources: Bloomberg Finance L.P.; Federal Reserve Board; Haver Analytics; J.P. Morgan; and IMF staff calculations.

Note: Panel 1 shows risk-off episodes identified using an extended version of the RORO Index of Chari, Diltz Stedman, and Lundblad (2023). The figure plots the standardized three-month sum of the RORO Index—see Online Annex 2.2 for details. Panel 2 shows the magnitude and duration of risk-off episodes and the variance decomposition of the RORO Index into key contributing factors. The first two bars denote the mean of the RORO Index (in standard deviations) during risk-off episodes and the length of the episodes (in months) in the pre-GFC (1997–2009) and post-GFC (2010–24) periods. The whiskers denote the range from minimum to maximum. GFC = global financial crisis; RORO Index = Risk-On Risk-Off Index.

subcomponent indicates that—in both periods—about 45 percent of the RORO's variation during risk-off episodes is explained by credit spreads (Figure 2.2, panel 2), just above 40 percent by equity volatility, about 10 percent by liquidity risks, and the remainder by currency risks.

Comparing the responses of emerging markets' capital flows, exchange rate pass-through, and credit spreads during risk-off episodes points to an increased resilience to surges in risk aversion in the postcrisis period. Since the global financial crisis, risk-off episodes have not been accompanied by outsized portfolio

Figure 2.3. Effects of Risk-Off Shocks

Sources: Bloomberg Finance L.P.; Federal Reserve Board; Haver Analytics; J.P. Morgan; and IMF staff calculations.

Note: The bars denote the change in variables six months after the start of risk-off episodes compared with similar time windows with no risk-off episodes. The specifications control for past real GDP growth, consumer price inflation, and country fixed effects. The whiskers denote 90 percent confidence intervals. Risk-off episodes are identified using an extended version of the RORO Index of Chari, Diltz Stedman, and Lundblad (2023). The pre-GFC period is 1997–2009, and the post-GFC period is 2010–24. EMBI = J.P. Morgan Emerging Market Bond Index; GFC = global financial crisis; RORO Index = Risk-On Risk-Off Index.

outflows, the exchange rate pass-through has become muted, and the increase in sovereign spreads is about one-fifth of what it used to be before the global financial crisis (Figure 2.3, panel 1). This greater resilience is reflected in easier policy trade-offs: Six months after the start of a risk-off episode, output losses are smaller in the postcrisis period (1 percent of GDP) compared with the precrisis period (1.8 percent of GDP), while the precrisis 0.9 percent price increase disappeared after the crisis (Figure 2.3, panel 2).¹¹

¹¹Economic crises in emerging markets typically have been associated with large output costs because they often represented declines in the trend growth rather than fluctuations around a trend (Aguar and Gopinath 2007; Cerra and Saxena 2008). Replicating the exercises of Aguiar and Gopinath (2007) for 1997–2024 confirms that the business cycles of the emerging markets in the sample began to resemble more those of advanced economies after the global financial crisis, although differences remain. See Online Annex 2.8 for details.

The Evolution of Policy Frameworks in Emerging Markets

The increased resilience of emerging markets to risk-off shocks after the global financial crisis corresponds to a period with a substantially larger number of countries adopting inflation-targeting regimes and fiscal rules and tightening macroprudential regulations. However, ascribing such resilience to de jure changes in policy frameworks can be misleading as de facto policy frameworks vary substantially across countries (Levy-Yeyati and Sturzenegger 2005; Carare and Stone 2006). This section describes progress achieved in the implementation of monetary, macroprudential, and fiscal frameworks—benchmarking it to the experience of advanced economies—and quantifies the role of improved policy frameworks as opposed to changing external conditions.¹²

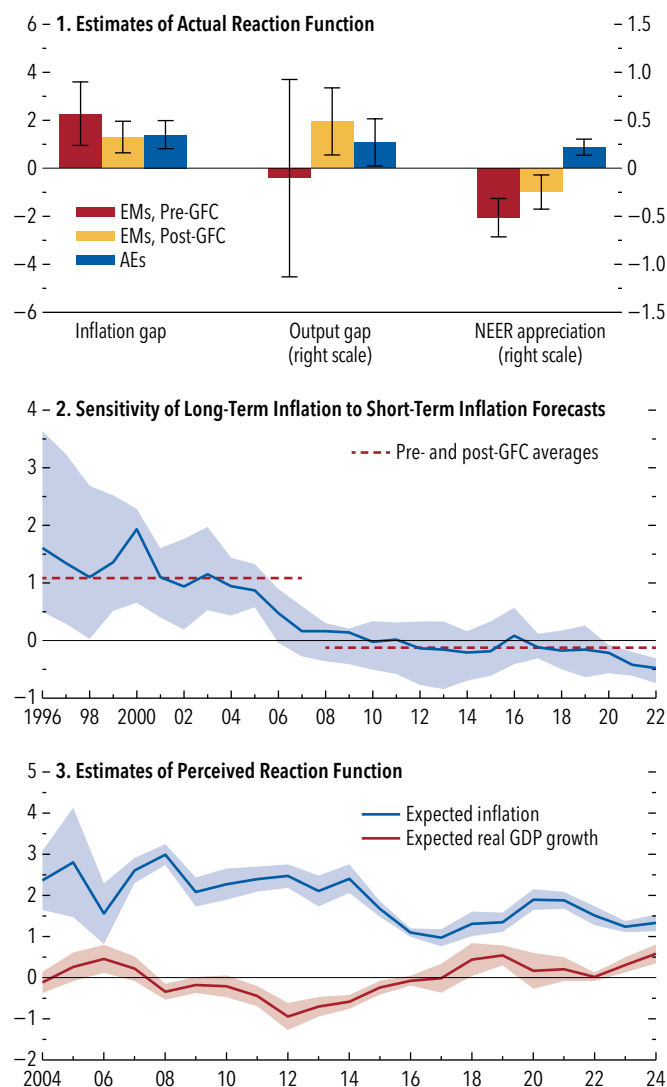
Monetary Policy

Improvements in monetary policy frameworks can be assessed in several dimensions (Box 2.2 describes the milestones in the improvements of monetary policy implementation among emerging market central banks). The chapter first studies changes in the monetary policy reaction function by estimating Taylor rule coefficients from a monthly regression that includes the deviation of one-year-ahead expected inflation from the inflation target and the real-time output gap, augmented with nominal effective exchange rate depreciation to capture fear of floating. The results show that in the postcrisis period policymakers are less concerned about exchange rate fluctuations, consistent with smaller pass-through to prices and a shift toward inflation as the economy's nominal anchor.¹³ At the same time, the weight associated with deviations of inflation expectations from the target declined, likely because of improved central bank credibility and more strongly anchored long-term inflation expectations (that is, beyond the monetary policy horizon) (Figure 2.4, panel 1). Consistent with this evidence, long-term inflation expectations became better anchored over time, as the sensitivity of three-year-ahead inflation

¹²See Online Annexes 2.3–2.5 for details on the exercises on policy frameworks.

¹³The Taylor rule coefficients are obtained from the ordinary least squares estimates of the monetary policy reaction function, in line with the discussion in Carvalho, Nechio, and Tristao (2021), see Online Annex 2.3. Estimates should be interpreted with caution, however, as the size of monetary policy shocks tends to be larger in emerging markets than in the US.

Figure 2.4. Monetary Policy Reaction Function (Percent)



Sources: Consensus Economics; Haver Analytics; and IMF staff calculations.

Note: Panel 1 shows the Taylor rule coefficients from a regression of the policy rate on its lag, the deviation of one-year-ahead inflation expectations from the target, the real-time output gap, the NEER appreciation, and country and time fixed effects. Panel 2 shows the sensitivity of long-term expected inflation to short-term inflation forecasts, based on a regression of changes in the three-year-ahead inflation expectations on changes in current year forecasts, following the methodology of Chapter 4 of the October 2018 *World Economic Outlook* and Bems and others (2021). Panel 3 shows the Taylor rule coefficients from a regression of the one-year-ahead forecast of the three-month saving rate on next year inflation expectations, next year real GDP forecast, and forecaster fixed effects; the figure is plotted for years with at least 1,000 observations. The sample excludes EMs with fixed exchange rate regimes, and Argentina, Türkiye, and Ukraine. In panel 1, the bars denote the point estimates, and the whiskers denote 90 percent confidence intervals. In panel 2, the line denotes the cross-country average, and the shaded area denotes the interquartile range. In panel 3, the lines denote the point estimates, and the shaded areas denote 90 percent confidence intervals. The pre-GFC period is 1997–2009, and the post-GFC period is 2010–24. AEs = advanced economies; EMs = emerging markets; GFC = global financial crisis; NEER = nominal effective exchange rate.

forecasts to changes in one-year-ahead expected inflation declined substantially after the global financial crisis (Figure 2.4, panel 2). With better-anchored inflation expectations, central banks in emerging markets can shift attention to curbing output fluctuations. The estimates capture this desirable countercyclical bias in the postcrisis reaction function and are close to those of advanced economies (Figure 2.4, panel 1).

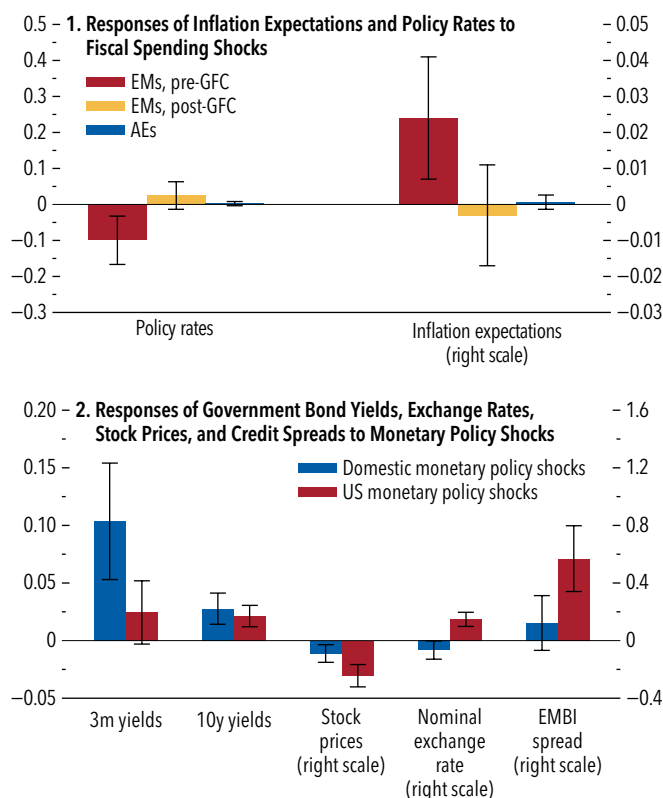
When monetary policy is credible, professional forecasters are expected to align their perceptions of the central bank's reaction function with its actual conduct. Financial markets, however, may take longer to internalize such shifts, since credibility builds over time. Survey data combining the interest rate expectations of individual forecasters with the corresponding macroeconomic projections make it possible to estimate time-varying Taylor rule coefficients (Bauer, Pflueger, and Sunderam 2024). Results show a progressive decline in the magnitude of the Taylor rule coefficient on expected inflation over time and a marginal increase in the size of the output gap coefficient, pointing to gains in monetary policy credibility (Figure 2.4, panel 3).

A crucial aspect of monetary policy frameworks is the extent of central banks' independence from fiscal pressures. (Box 2.3 shows that undermining central bank independence by removing governors for political reasons leads to currency depreciation and higher inflation.) Emerging markets have traditionally been plagued by fiscal dominance. When a central bank is not independent, the government has an incentive to rely on the central bank to finance its expenses, which, in turn, limits the monetary authority's ability to raise interest rates to control inflation, weakening inflation-expectation anchoring.¹⁴ To assess how much fiscal dominance continues to challenge central bank independence in emerging markets, the analysis examines the response of policy rates and long-term inflation expectations—beyond the monetary policy horizon—in the year after an unexpected increase in military spending (Figure 2.5, panel 1).¹⁵ The results are suggestive of fiscal dominance prior to the global

¹⁴Monetary financing is not the only channel through which governments may exert pressure on central banks. For instance, governments may also seek to ease financial conditions ahead of elections to stimulate economic activity and improve electoral prospects (Dinç 2005).

¹⁵Military spending tends to be more exogenous to economic conditions than other spending categories, but it is relatively small in some emerging markets. However, the results are broadly consistent with those obtained using primary spending in a structurally identified vector autoregression, as in Blanchard and Perotti (2002) and Ilzetzki, Mendoza, and Végh (2013).

Figure 2.5. Central Bank Independence and Autonomy (Percent)



Sources: Bloomberg; Consensus Economics; Haver Analytics; J.P. Morgan, SIPRI Military Expenditure Database; and IMF staff calculations.

Note: Panel 1 shows the coefficients of regressions of the two-year-ahead inflation expectations and next year policy rates on previous year military spending growth, controlling for lags of inflation, exchange rate, GDP growth, inflation forecasts, policy rate, government-debt-to-GDP ratio, government expenditure growth, military spending growth, and country and year fixed effects. The pre-GFC period is 1997–2009, and the post-GFC period is 2010–24. Panel 2 shows the responses of government bond yields, nominal exchange rates, stock prices, and EMBI spreads to one-standard-deviation domestic and US monetary policy shocks one day after the shock. Domestic monetary policy shocks are identified as in Checo, Grigoli, and Sandri (2024), and US monetary policy shocks are identified as in Bauer and Swanson (2023). The sample varies by country according to data availability for domestic monetary policy shocks, which for most countries cover only the post-GFC period. The bars denote the point estimates, and the whiskers denote 90 percent confidence intervals. AEs = advanced economies; EMs = emerging markets; EMBI = J.P. Morgan Emerging Market Bond Index; GFC = global financial crisis; m = month; y = year.

financial crisis, when increases in spending were followed by monetary easing and higher expected inflation. Unlike before the global financial crisis, central banks since then no longer accommodate fiscal spending, leaving long-term inflation expectations close to target, similarly to advanced economies.

Another key dimension of the implementation of monetary policy is the extent to which it retains autonomy with respect to US monetary policy actions. The literature has widely documented the powerful financial spillovers of US monetary policy to the rest of the

world (Miranda-Agrippino and Rey 2020b; Chapter 4 of the April 2021 *World Economic Outlook*). Following Grigoli, Sandri, and Schrimpf (forthcoming), the analysis in this chapter examines the impact of US and domestic monetary policy shocks on emerging market financial variables the day after a monetary policy announcement (Figure 2.5, panel 2). Domestic shocks transmit strongly to government bond yields, especially at the short end of the yield curve, indicating that monetary policy retains traction on borrowing conditions. A one-standard-deviation domestic monetary policy shock raises the three-month yield by about 10 basis points, whereas US monetary policy shocks show a considerably smaller—and not statistically significant—pass-through to domestic borrowing conditions. However, the effects on 10-year yields—whose risk premiums are more sizable—are broadly comparable. US monetary policy shocks, on the other hand, have larger effects on riskier asset classes, including stock prices, exchange rates, and credit spreads. A one-standard-deviation US monetary policy shock leads to a 24 basis point decline in stock prices, a 15 basis point exchange rate depreciation, and a 57 basis point widening of credit spreads. In contrast, a one-standard-deviation domestic monetary policy shock appreciates the currency by 7 basis points and lowers stock prices by 9 basis points.

Foreign Exchange Interventions

Emerging markets have historically exhibited fear of floating, owing to concerns over balance sheet mismatches, pass-through to inflation, and financial instability (Calvo and Reinhart 2002). Resistance to letting the exchange rate float, in turn, has hindered the development of hedging instruments and constrained the depth of domestic financial markets. As a result, many emerging markets' central banks continued to engage in substantial exchange rate management even after adopting inflation-targeting frameworks.

While there is a case for foreign exchange interventions even within an inflation-targeting regime, the benefits from deploying this policy tool diminish as policy frameworks mature and financial frictions ease (IMF 2023a).¹⁶ By leveraging cross-country variation

in the degree of anchoring of inflation expectations, the analysis shows that emerging markets with well-anchored inflation expectations intervene less in foreign exchange markets in response to uncovered interest parity deviations—differences between the change in the exchange rate and what is predicted by interest rate differentials—triggered by risk-off episodes, as the exchange rate pass-through tends to be lower (Figure 2.6, panel 1). Similarly, when macroprudential regulation effectively limits the share of foreign currency debt, financial stability concerns are reduced, and the need for foreign exchange intervention is diminished (Figure 2.6, panel 2).¹⁷ Thus, emerging markets with strong policy frameworks are more likely to allow deviations from uncovered interest parity to play out rather than counteracting them by selling foreign currency.

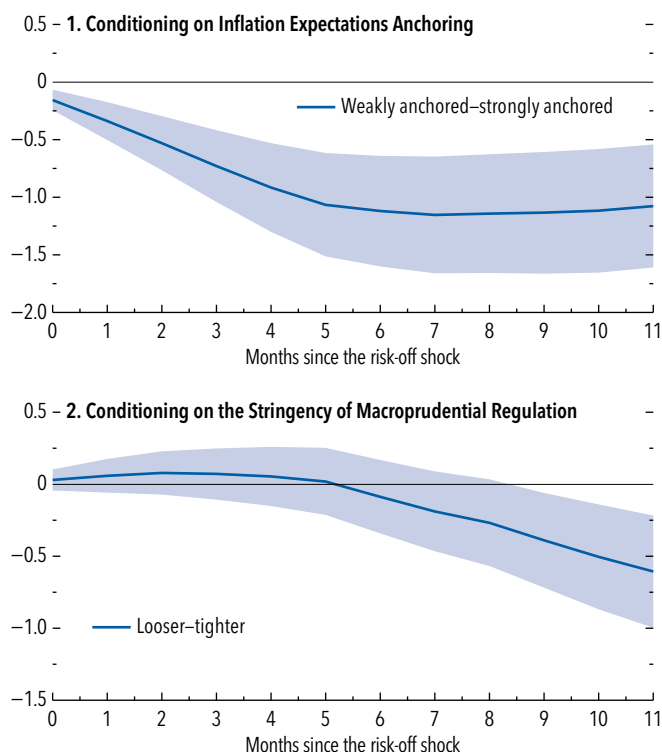
Fiscal Policy

This section first examines the design of fiscal rules and the predictability of public finances. The IMF's Fiscal Rule Strength Index shows a continued improvement in the legal basis, monitoring, enforcement, and flexibility of fiscal rules in emerging markets (Figure 2.7, panel 1). However, progress has been uneven, with emerging markets on average still lagging advanced economies. In particular, countries often struggle to balance the flexibility and resilience of fiscal rules against the complexity of design while ensuring that escape clauses are reserved for events beyond the control of policymakers (Eyraud and others 2018). Strong fiscal frameworks and fiscal rules can strengthen the credibility of official projections, helping to anchor private sector expectations of future fiscal policy (End and Hong 2022; End 2023). Consistent with improvements in the predictability of fiscal policy in emerging markets, professional forecasters have increasingly aligned their expectations of budget deficits with official projections (Figure 2.7, panel 2).

An important dimension through which fiscal policy can contribute to output stabilization is its degree of countercyclicality. Emerging markets have historically implemented procyclical fiscal policy (Gavin and Perotti 1997; Ilzetzki and Végh 2008; Frankel, Végh, and Vuletin 2013), driven by limited access to

¹⁶Foreign exchange interventions can be warranted in the presence of financial market imperfections—such as shallow markets or currency mismatches—provided they are transparent, rules-based, and do not undermine monetary policy credibility. Specifically, such interventions can be used to counter destabilizing premia from foreign exchange market frictions, counter financial stability risks from foreign exchange mismatches, and prevent potential de-anchoring of inflation expectations.

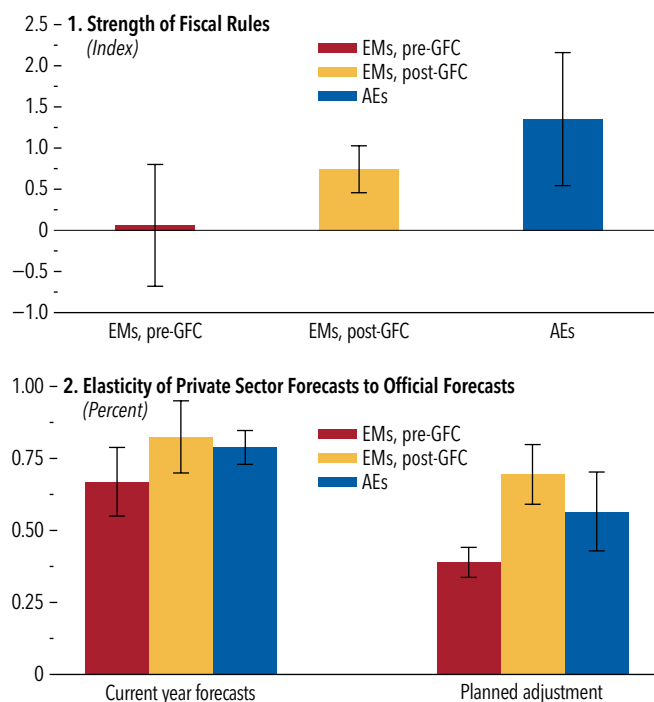
¹⁷Similar regressions examining net tightening of capital flow measures introduced in response to uncovered interest parity deviations caused by risk-off shocks suggest that emerging markets also rely on capital flow measures relatively less when their inflation expectations are strongly anchored.

Figure 2.6. Use of Foreign Exchange Interventions in Response to Uncovered Interest Parity Deviations*(Percent of GDP)*

Sources: Bloomberg Finance L.P.; Foreign Exchange Intervention Dataset (Adler and others 2024); Haver Analytics; IMF, Integrated Macroprudential Policy Database; J.P. Morgan; and IMF staff calculations.

Note: The figure shows the cumulative foreign exchange interventions (measured as net purchases) in response to a 1 percentage point increase in the UIP deviation instrumented with the RORO Index, conditional on inflation expectation anchoring or the stringency of macroprudential regulation. Percentiles 10 and 90 of the corresponding distributions are used to plot the figures. The regressions control for lagged inflation, exchange rate, UIP deviation, foreign exchange interventions, capital flow management measures, and country and time fixed effects. Inflation expectation anchoring index is measured as in Bems and others (2021). The stringency of macroprudential regulation is measured as the net cumulative tightening in foreign exchange related capital requirements, loan restrictions, and other position restrictions. The sample excludes EMs with fixed exchange rate regimes. The lines denote the point estimates, and the shaded areas denote 90 percent confidence intervals. EMs = emerging markets; RORO Index = Risk-Off Index; UIP = uncovered interest parity.

international credit markets during downturns and institutional weaknesses that encouraged loose fiscal policy during upswings (Végh 2015). However, since the global financial crisis, some emerging markets have graduated from procyclical to countercyclical fiscal policy (bottom-right quadrant of Figure 2.8). For several others, the co-movement of government expenditures and slack is more negative than it was in the precrisis period. On average, the degree of countercyclicality

Figure 2.7. Strength of Fiscal Frameworks

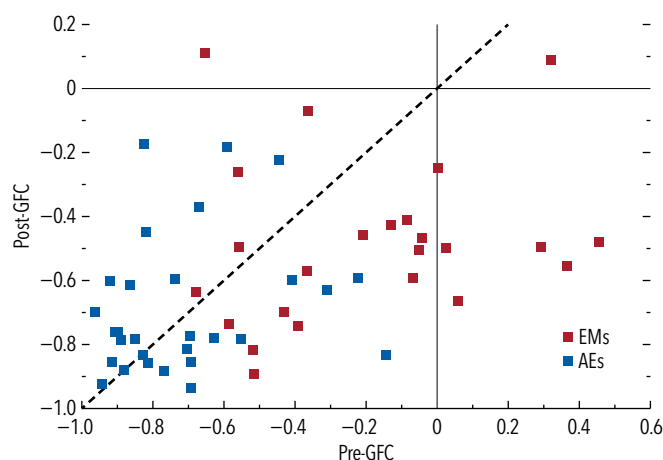
Sources: Alonso and others, forthcoming; Consensus Economics; and IMF staff calculations.

Note: In panel 1, the bars denote the strength of fiscal rules in EMs and AEs during the pre-GFC period and post-GFC period. The index of the strength of fiscal rules is constructed based on four institutional criteria: (1) legal basis, (2) presence of a monitoring mechanism, (3) enforcement and correction mechanism in place, and (4) flexibility and resilience against shocks. Higher values correspond to stronger fiscal rules. In panel 2, the bars denote the weight of private sector forecasts for budget deficits in official forecasts, obtained as regression coefficients of private sector forecasts on official forecasts captured in *World Economic Outlook* projections, controlling for country fixed effects. "Current year forecasts" refer to the current year fiscal balance, and "planned adjustment" refers to the expected change in the fiscal balance between the current year and next year, both submitted in April. The whiskers denote 90 percent confidence intervals. The pre-GFC period is 1997–2009, and the post-GFC period is 2010–24. AEs = advanced economies; EMs = emerging markets; GFC = global financial crisis.

has moved closer to that of advanced economies. Improvements in countercyclicality are most pronounced in the years following downturns in the global business cycle, suggesting that emerging markets increasingly use fiscal policy to shield their economies from external shocks.¹⁸

¹⁸Online Annex 2.5 confirms that the change in primary expenditures has become more negatively correlated with the change in output gaps, controlling for initial debt burdens and country fixed effects. More countercyclical fiscal policy is also present across commodity exporters, although fiscal policy in these countries is still less countercyclical than in commodity importers.

Figure 2.8. Cyclicalities of Government Expenditures
(Correlation coefficients)



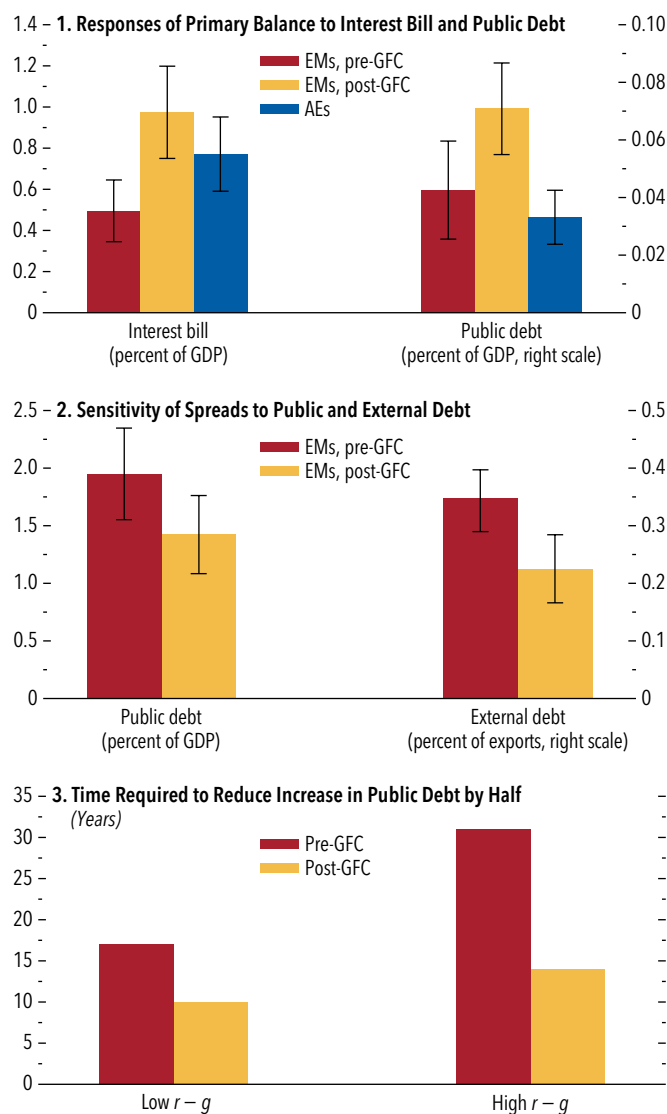
Sources: IMF, *World Economic Outlook*; World Bank, Cross-Country Database of Fiscal Space; and IMF staff calculations.

Note: Squares denote the correlation between the change in the ratio of primary government expenditures to GDP and the change in the output gap for the pre-GFC period (1997–2009) and the post-GFC period (2010–24). Primary government expenditures are constructed as the difference between government revenues and the primary balance. AEs = advanced economies; EMs = emerging markets; GFC = global financial crisis.

Finally, prudent fiscal policy that responds to debt sustainability pressures is critical to keep interest expenditures in check, contain sovereign spreads, and ensure that maturing debt can be rolled over. To assess whether increases in debt and interest expenditures lead to higher primary balances, this section estimates a fiscal reaction function in the spirit of Bohn (1998) and Mauro and others (2015), among others. The sensitivity of the primary balance to debt levels and interest expenditure in emerging markets has increased since the global financial crisis (Figure 2.9, panel 1).¹⁹ Meanwhile, the sensitivity to the interest bill has become close to 1 and exceeds that of advanced economies. This stronger response may reflect a greater reliance of emerging markets on fiscal consolidation to avoid losing market access or experiencing an increase in borrowing costs (Mendoza and Ostry 2008). In fact, while improvements in fiscal frameworks have translated into a greater capacity to manage higher public and external debt with the same external borrowing costs—suggesting a reduction in emerging markets’ debt intolerance (Reinhart,

¹⁹The greater sensitivity of the primary balance to debt sustainability pressures is particularly pronounced in countries with fiscal rules in place (Online Annex 2.5).

Figure 2.9. Fiscal Policy and Debt Sustainability



Sources: IMF, *World Economic Outlook*; J.P. Morgan; World Bank, Cross-Country Database of Fiscal Space; and IMF staff calculations.

Note: Panel 1 reports the elasticities of the primary balance to the lagged values of the interest bill and of public debt, all expressed in percent of GDP. The elasticities are obtained using regressions of the primary balance on the lagged values of the interest bill and public debt, and country and year fixed effects, jointly estimated for the pre-GFC period (1997–2009) and the post-GFC period (2010–24) using period dummies and interactions with the variables of interest while controlling for the output gap and unemployment rate. The whiskers denote 90 percent confidence intervals. Panel 2 reports the elasticities of sovereign EMBI spreads to public debt and external debt, expressed in percent of GDP and percent of exports. The elasticities are obtained using regressions of the logarithm of the sovereign spread on public debt and external debt and country fixed effects, jointly estimated for the pre-GFC and post-GFC periods using period dummies and interactions with the variables of interest while controlling for the output gap and unemployment rate. The whiskers denote 90 percent confidence intervals. Panel 3 plots the results of an illustrative simulation using coefficients from the estimated reaction function for public debt. The exercise assumes a stable initial public-debt-to-GDP ratio coupled with a shock that sends debt higher in a single year. The simulation assumes a low interest-growth differential ($r - g$) of 0 and a high interest-growth differential of 2 percent. AEs = advanced economies; EMs = emerging markets; EMBI = J.P. Morgan Emerging Market Bond Index; GFC = global financial crisis.

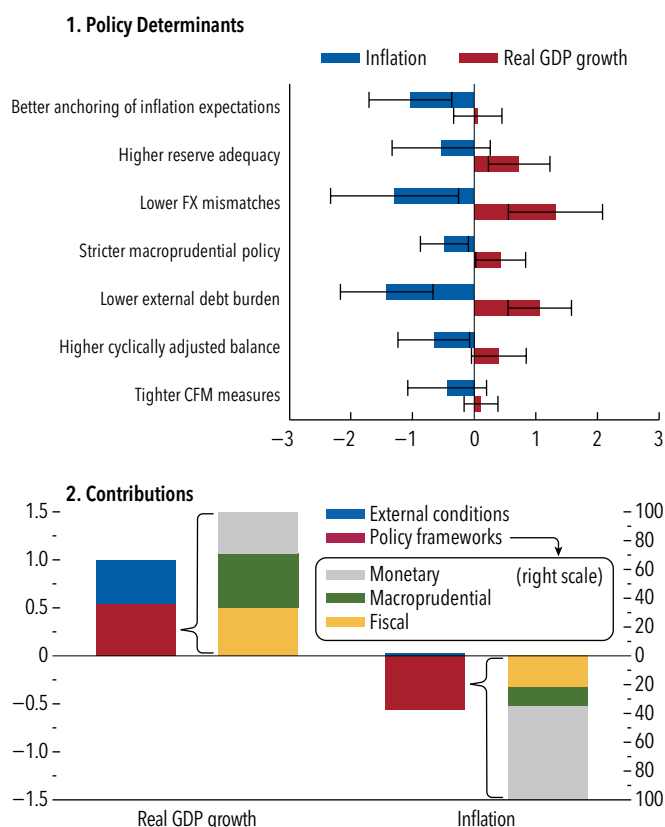
Rogoff, and Savastano 2003)—sovereign spreads remain sensitive to debt burdens (Figure 2.9, panel 2), especially during periods of financial stress (Presbitero and Wiriadinata 2022). In addition, even with a more aggressive response, the estimated reaction functions imply that the speed at which debt is brought back down after an adverse shock is still relatively slow (Figure 2.9, panel 3).

The Contribution of Policy Frameworks to Macroeconomic Stabilization

To answer the question of the chapter's title, “good luck or good policies?”—as posed by Easterly and others (1993) in the context of drivers of economic growth—this section quantifies the contribution of policy frameworks relative to the contribution of benign external conditions in boosting emerging market resilience to risk-off shocks. The analysis proceeds in two stages.

The first stage explores the extent to which proxies for the quality of policy frameworks predict growth and inflation in emerging markets during the 12 months following the start of a risk-off episode. Specifically, the analysis considers a set of predetermined policy variables that capture monetary, macroprudential, and fiscal policy frameworks and, using episode-specific fixed effects, compares the resilience of emerging markets with the varying quality of policy frameworks while holding the impact of external conditions constant.²⁰ The results indicate that stronger policies predict better performance and that countries benefited to an extent consistent with the strength of policy frameworks at the onset of the risk-off episodes. For example, an emerging market that entered a risk-off episode at the 75th percentile of lower foreign exchange mismatches is expected to experience 1.3 percentage point higher growth than an emerging market that enters the same risk-off episode at the 25th percentile (Figure 2.10, panel 1). Similarly, an emerging market at the 75th percentile in terms of

Figure 2.10. Factors Contributing to Emerging Markets' Resilience during Risk-Off Episodes (Percent)



Sources: Allen and Juvenal 2025; Consensus Economics; Haver Analytics; IMF, *World Economic Outlook*; IMF, Integrated Macroprudential Policy Database; World Bank, Cross-Country Database of Fiscal Space; and IMF staff calculations.

Note: Panel 1 reports the predicted change in real GDP growth and inflation during risk-off episodes for a country moving from the 25th to the 75th percentile of the distribution of a set of policy variables. See Online Annex 2.6 for details. The whiskers denote 90 percent confidence intervals. Panel 2 plots the contributions of policy frameworks and external conditions for the median emerging market in the post-GFC period (2010–24) relative to the pre-GFC period (1997–2009). Variables proxying for external conditions include real GDP growth in advanced economies, commodity terms-of-trade shocks, and US FCI-G index. Anchoring of inflation expectations and reserve adequacy account for monetary contributions, FX mismatches and macroprudential policy measures for macroprudential contributions, and external debt burden and the cyclically adjusted balance for fiscal contributions. CFM = capital flow management; FCI-G index = Financial Conditions Impulse on Growth index; FX = foreign exchange; GFC = global financial crisis.

anchoring of long-term inflation expectations tends to experience 1.3 percentage point lower inflation.

Leveraging the estimates obtained in the first stage of the analysis, the second stage quantifies the overall contributions of policy frameworks and external conditions to growth and inflation dynamics in the aftermath of risk-off shocks by accounting for the observed changes in these factors in the periods before

²⁰Episode fixed effects also control for the possibility that in recent episodes, emerging market economies could have benefited from a robust policy response and better policy frameworks in advanced economies. The empirical approach is inspired by previous work that studied the relevance of policy frameworks during the global financial crisis or oil price collapses (Blanchard and others 2010; Lane and Milesi-Ferretti 2011; Berkmen and others 2012; Grigoli, Herman, and Swiston 2019). See Online Annex 2.6 for details on the methodology.

and after the global financial crisis.²¹ Improved policy frameworks contributed substantially to resilience during recent risk-off episodes, raising growth by 0.5 percentage point and lowering inflation by 0.6 percentage point in the period since the global financial crisis compared with the period before the crisis began (Figure 2.10, panel 2). Improvements in monetary, macroprudential, and fiscal frameworks contributed roughly equally to the growth performance in the years since the crisis. Lower inflation, instead, is largely explained by improvements in monetary frameworks, especially better-anchored inflation expectations. More benign external conditions—captured by real GDP growth in advanced economies, commodity terms-of-trade shocks, and global financial conditions—also contributed to faster growth in emerging markets after the global financial crisis, by 0.5 percentage point, but did not ease inflationary pressures.

How to Deal with Future Risk-Off Shocks: Evidence from Model Simulations

Economies featuring better policy frameworks enjoy more favorable policy trade-offs, which leave room for monetary policy to act countercyclically. This section leverages a quantitative version of the IMF's Integrated Policy Framework (Q-IPF) model (Adrian and others 2020, 2021; Adrian, Gaspar, and Vitek 2022) to set the stage by quantifying these trade-offs and then elaborate on the appropriate policy response emerging from improved policy frameworks.²² The Q-IPF contains four key frictions: (1) limited risk-bearing capacity of agents in the foreign exchange market, giv-

ing rise to fluctuations in the uncovered interest parity risk premium; (2) an occasionally binding external debt limit, which can trigger sudden stops; (3) weakly anchored inflation expectations that result in a high pass-through of exchange rate changes to import and consumer prices; and (4) balance sheet foreign exchange mismatches, which amplify the contractionary impact of exchange rate changes in case of a sudden stop. The model—augmented with an endogenous inflation indexation mechanism (Erceg, Lindé, and Trabandt 2024) to capture a more realistic inflation expectation de-anchoring process—is calibrated to two types of small open emerging markets with flexible exchange rates. The first type of economy resembles the average emerging market in the period prior to the global financial crisis and is subject to all four frictions. The second represents the average emerging market in the postcrisis period, featuring more strongly anchored inflation expectations and smaller balance sheet mismatches.²³ The foreign economy is calibrated to the US.

Quantifying Policy Trade-Offs and the Probability of Sudden Stops

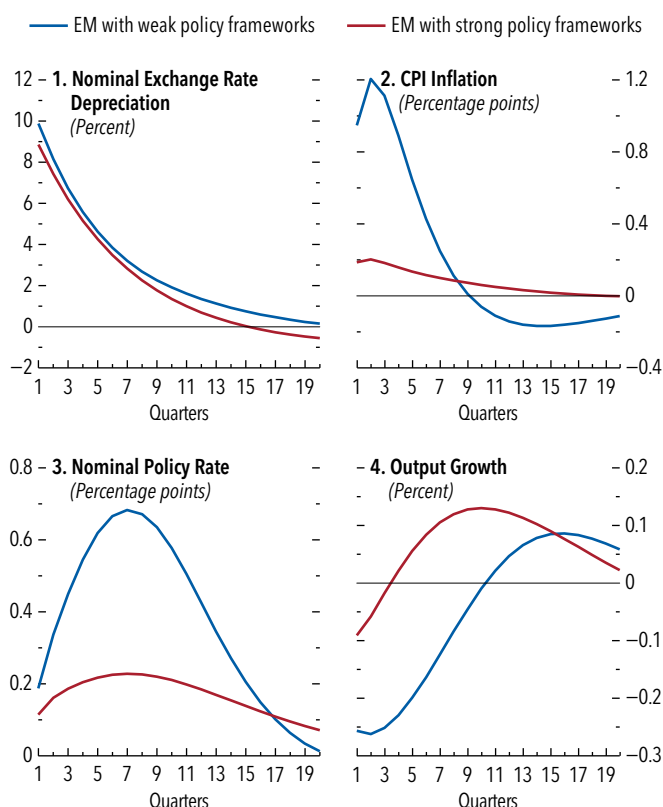
To illustrate the policy trade-offs in emerging markets with policy frameworks of different quality, the analysis considers a risk-off shock that triggers capital outflows, and in turn causes the exchange rate to depreciate by 10 percent (Figure 2.11). In the case of the emerging market with strong policy frameworks (that is, the postcrisis emerging market), the exchange rate depreciation raises import prices, fueling price and wage inflation. With strongly anchored inflation expectations, monetary policy can afford not to tighten policy rates aggressively, allowing the temporary increase in inflation to subside while prioritizing output stabilization, with output supported by higher net exports.

Policymakers in emerging markets with weak policy frameworks (that is, the pre-global financial crisis emerging market), on the other hand, face harsher policy trade-offs. For the same size depreciation, a greater exchange rate pass-through to domestic prices leads to

²¹The relative contributions of monetary, macroprudential, and fiscal policy frameworks to growth and inflation should be interpreted with caution. First, the predetermined policy frameworks could still be endogenous to growth and inflation, even after controlling for pre-trends. Second, there is no one-to-one mapping between the policy variables shown in panel 1 of Figure 2.10 and the three policy frameworks. While individual policy variables may be more closely associated with a particular framework, they can nonetheless influence others. For instance, the level of external debt reflects both fiscal actions and macroprudential regulation.

²²The Q-IPF model has two key advantages. First, as with the conceptual IPF models (Basu and others, forthcoming; Basu and Gopinath 2024), it jointly considers the role of monetary, foreign exchange, and macroprudential policies in small open economies while accounting explicitly for imperfections in trade and financial markets that generate inefficient fluctuations in risk premiums. Second, it is explicitly quantitative, can be solved nonlinearly, and can be used to assess the impact of different combinations of policies for countries with different sets of frictions.

²³The model calibration to average emerging market conditions prior to and after the global financial crisis is illustrative and should be interpreted as equally informative about the current cross-country differences among emerging markets. See Online Annex 2.7 for details about the model calibration.

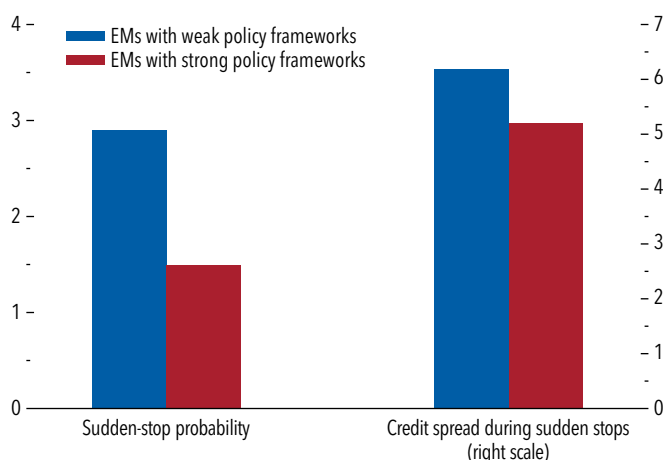
Figure 2.11. Policy Trade-Offs in Response to Risk-Off Shocks

Source: IMF staff calculations.

Note: The figure presents the model simulations in response to a capital flow shock that triggers a 10 percent depreciation of the nominal exchange rate. The EM with weak policy frameworks is calibrated according to the characteristics of the average EM during the pre-GFC period, while the EM with strong policy frameworks is calibrated to the characteristics of the average EM during the post-GFC period. CPI = consumer price index; EM = emerging market; GFC = global financial crisis.

a substantial increase in inflation. The central bank is then forced to tighten aggressively, depressing domestic demand. In the emerging market with strong policy frameworks output declines by only 0.1 percentage point and inflation rises by 0.2 percentage point, but the emerging market with weak policy frameworks suffers a 0.3 percentage point contraction in output and a 1 percentage point increase in inflation.

Another important implication of the improvement in policy frameworks is the lower likelihood and severity of sudden stops. The period after the global financial crisis witnessed substantial changes in the balance sheets of several emerging markets. The average net foreign asset position increased by 13 percent of GDP relative to the period before the crisis, and the share of external liabilities denominated in domestic

Figure 2.12. Probability and Severity of Sudden Stops (Percent)

Source: IMF staff calculations.

Note: The figure reports the probability and severity of sudden stops, based on stochastic simulations as described in Adrian and others (2020, 2021). The average severity of a sudden stop is measured using the credit spread, computed as the borrowing rate minus policy rate. EMs = emerging markets.

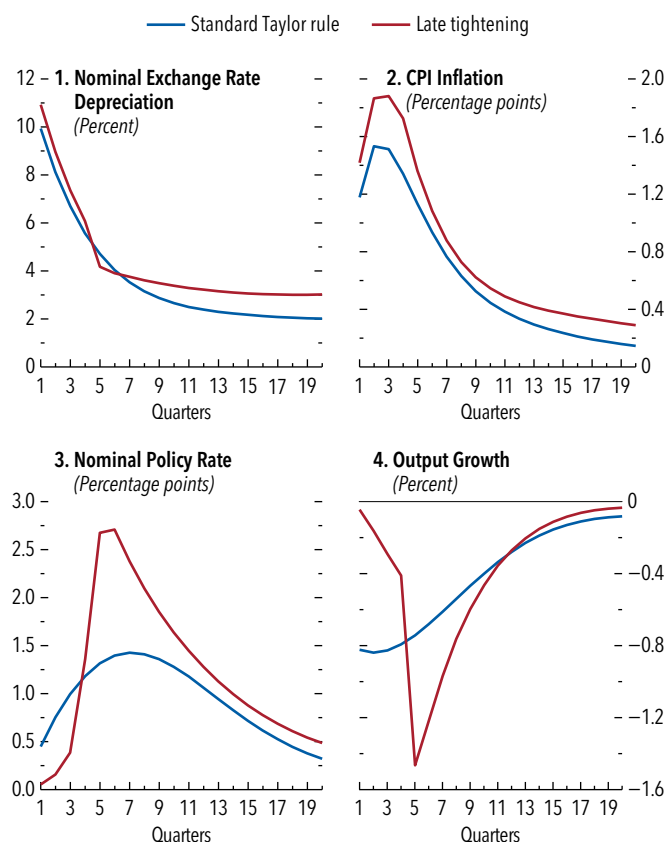
currency rose by 12.5 percentage points (see Chapter 3 of the October 2025 *Global Financial Stability Report* for recent trends in local currency bond markets).

These improvements keep the economy farther from the external debt limit, lowering by half the probability of experiencing a sudden stop, to 1.5 percent. Conditional on experiencing a sudden stop, the severity of these events also dropped significantly. The average credit spread during sudden stops fell from 6.2 percent to 5.2 percent (Figure 2.12).

Costs of Delaying Monetary Tightening

The inflation surge after the pandemic period created a particularly challenging environment for emerging markets facing risk-off shocks. Global supply chain disruptions led to a rapid and persistent increase in prices (Chapter 2 of the October 2024 *World Economic Outlook*), which amplified the adverse dynamics typically seen in emerging markets with weak policy frameworks. However, many emerging markets responded with timely and aggressive tightening of their monetary policy, which proved crucial in preventing de-anchoring of inflation expectations (English, Forbes, and Ubide 2024).

To quantify the costs associated with a delayed and dovish monetary policy response, the analysis focuses

Figure 2.13. Costs of Delaying Monetary Tightening for Emerging Markets with Weak Policy Frameworks

Source: IMF staff calculations.

Note: The figure presents the model simulations in response to a capital flow shock that triggers a 10 percent depreciation of the nominal exchange rate combined with a cost-push shock. The EM with weak policy frameworks is calibrated according to the characteristics of the average EM during the pre-GFC period. In the "late tightening" scenario, the central bank first attempts to look through the inflation surge. CPI = consumer price index; EM = emerging market; GFC = global financial crisis.

on emerging markets with weak frameworks and compares simulation results for two monetary policy regimes in response to a combination of a risk-off shock and a persistent cost-push shock (Figure 2.13), as in the postpandemic environment, causing a 10 percent nominal exchange rate depreciation and 0.5 percentage point increase in inflation. In the first regime, monetary policy follows a standard Taylor rule, with the central bank responding to inflationary pressures in a timely and aggressive manner. In the second regime, the policy response is delayed and subdued: The central bank initially attempts to look through the inflation surge, but later, to address the already elevated inflation, it ends up raising policy rates by more than in the

first regime.²⁴ While both regimes eventually succeed in bringing inflation back to target by the end of the third year following the shock, late tightening leads to a substantially larger rate hike of 1.4 percentage points and results in a more pronounced output contraction—by 0.7 percent of GDP—five quarters after the shock.

The Role of Foreign Exchange Interventions

Finally, the model is used to examine the role of foreign exchange interventions, contrasting the outcomes for emerging markets with different policy frameworks and assuming sufficient reserve buffers. In response to a risk-off shock, and without intervention, the nominal exchange rate depreciates by 10 percent. However, when the central bank intervenes—running down reserves by 3 percent of GDP—it helps counter capital outflows, limiting the rise in the uncovered interest parity risk premium and halving the magnitude of the exchange rate depreciation.²⁵

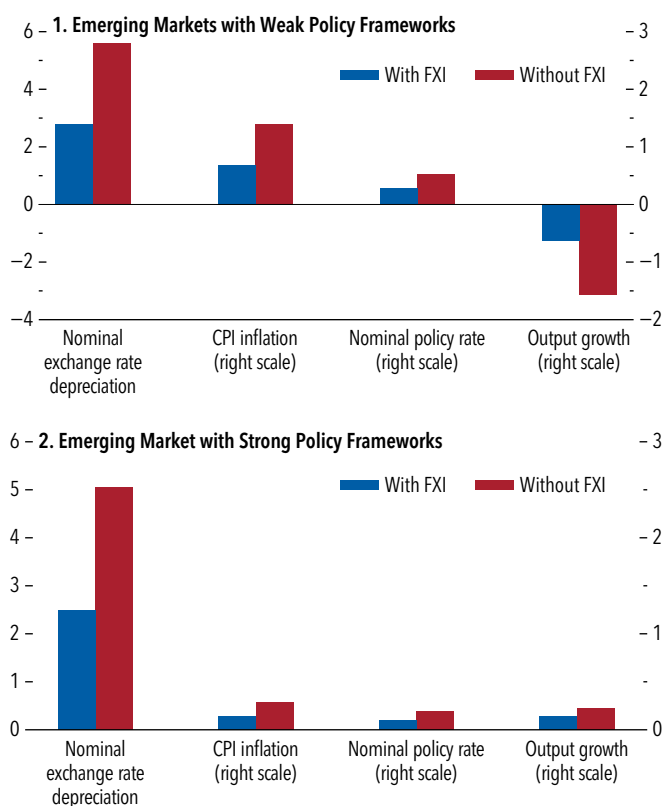
The results show that, despite foreign exchange interventions, the residual exchange rate depreciation in the emerging market with weak policy frameworks still fuels inflation, reflecting a relatively high exchange rate pass-through. Yet two years after the shock, the cumulative price increase is 0.7 percentage point lower than in the no-intervention scenario. This moderates the need for monetary tightening and reduces the associated output loss by 0.9 percentage point (Figure 2.14, panel 1). In contrast, for emerging markets with strong policy frameworks, the benefits of foreign exchange intervention are more modest. Given better-anchored inflation expectations, inflation is only 0.1 percentage point lower when the central bank intervenes, and output is marginally higher despite the monetary policy tightening, as the nominal depreciation boosts net exports (Figure 2.14, panel 2).²⁶

²⁴In the model, prices and wages tend to rise faster when inflation is far from the target, leading to inflation persistence. This mechanism worsens the trade-off associated with delayed monetary tightening, as inflation becomes more difficult to contain once expectations begin to drift.

²⁵The effectiveness of foreign exchange interventions in offsetting the nominal exchange rate depreciation depends on the depth of foreign exchange markets. As this is assumed to be the same in emerging markets with weak and strong policy frameworks, the resulting depreciation when the central bank intervenes is the same.

²⁶Adrian and others (2021) compare the effects of capital flow measures and foreign exchange interventions in a similar model setup. The simulations suggest that these tools offer similar advantages. While the analysis in the chapter pertains to foreign exchange interventions, comparing countries with strong and weak policy frameworks, the conclusions can be extended to the use of capital flow measures.

Figure 2.14. Effects of Foreign Exchange Interventions
(Percent)



Source: IMF staff calculations.

Note: The figure presents the model simulations in response to a capital flow shock that triggers a 10 percent depreciation of the nominal exchange rate in the absence of FXI. The FXI scenarios involve a decline in FX reserves by 3 percent of GDP. The EM with weak policy frameworks is calibrated according to the average characteristics of the pre-GFC EM, while the EM with strong policy frameworks is calibrated to the average characteristics of the post-GFC EM. FX reserves are expressed in percent of trend GDP; the nominal exchange rate depreciation and output growth are reported in percent; and CPI inflation and the nominal policy rate are expressed in percentage points. The figure reports the FX reserves when the shock hits, the cumulative change over the two years following the shock for CPI inflation and output, and the two-year average for the nominal exchange rate depreciation and policy rate changes. CPI = consumer price index; EM = emerging market; FX = foreign exchange; FXI = foreign exchange intervention; GFC = global financial crisis.

Conclusions and Policy Implications

Since the global financial crisis, most emerging markets have shown remarkable resilience to risk-off shocks, including in the aftermath of the COVID-19 shock and the inflation surge that followed the pandemic. While favorable external conditions have certainly bolstered the capacity of these economies to withstand risk-off shocks, attributing recent resilience solely to *good luck* does not tell the whole story. Improved policy frameworks have played a critical role in supporting macroeconomic stability, allowing countries to implement *good policies*.

An analysis of the evolution of policy frameworks in emerging markets reveals, on average, substantial progress over time, which helped narrow the gap with advanced economies, although the degree of progress varies across countries. De facto improvements—which extend beyond the de jure adoption of inflation targeting and fiscal rules—have enhanced the implementation and credibility of monetary and fiscal policies, which in turn have led to more restrained use of foreign exchange interventions. In other words, emerging markets’ investment in upgrading policy frameworks has yielded high returns, boosting resilience against risk-off shocks. Comparing the typical risk-off episode since the global financial crisis with a typical episode before the crisis suggests that improved frameworks accounted for 0.5 percentage point higher growth and 0.6 percentage point lower inflation. In contrast, favorable external conditions supported faster growth, contributing 0.5 percentage point, but did not ease inflationary pressures.

Based on the results from a rich set of empirical exercises to assess policy frameworks and model simulations aimed at quantifying policy trade-offs under different policy frameworks, this chapter offers some key insights for policymakers to navigate a shock-prone global environment:

- **Monetary policy.** Clear communication of policy objectives and the central bank’s reaction function can help anchor inflation expectations and enhance credibility. This, in turn, eases policy trade-offs, allowing the central bank to focus more on output stabilization. In addition, reinforcing and safeguarding central bank independence are essential to ensure that policy decisions remain insulated from political pressures and to mitigate the risk of fiscal dominance. This continues to be relevant in the current context, in which inflation expectations are anchored and fiscal demands are mounting, tempting policymakers to yield to political pressure.
- **Foreign exchange interventions.** Foreign exchange interventions can play a stabilizing role for less-resilient emerging markets, but the benefits diminish as policy frameworks strengthen. Given the costs associated with foreign exchange interventions, efforts to anchor inflation expectations and reduce balance sheet mismatches—including through the implementation of macroprudential frameworks—should be promoted, lessening the need for intervention in the foreign exchange market.
- **Fiscal policy.** Stronger fiscal guardrails are needed to foster fiscal discipline when high uncertainty and

- spending pressures mount. Investing in a credible medium-term fiscal framework that combines more flexible rules with strong and independent fiscal institutions is essential to signal fiscal commitment while allowing for a more countercyclical fiscal policy. Compliance with fiscal rules can be improved through a risk-based fiscal anchor tailored to the country's debt-carrying capacity and robust correction mechanisms (Acalin and others 2025). Sound public debt management could also mitigate the effect of negative shocks on borrowing costs (Pedersoli and Presbitero 2023). These policies would help forge a path to debt sustainability and build up fiscal buffers (see Chapter 2 of the October 2021 *Fiscal Monitor*). Deepening local currency bond markets and increasing resident investors' participation can also improve resilience (see Chapter 3 of the October 2025 *Global Financial Stability Report*).
- *Trilemma, not dilemma?* Taken together, the observed resilience to risk-off episodes, the reduced marginal benefits of foreign exchange interventions (and capital flow measures) where policy frameworks are strong, and the evidence of greater domestic monetary policy autonomy all point to a gradual—though uneven across countries—shift away from the dilemma (Rey 2015) toward the classic Mundell-Fleming trilemma.
 - *Looking ahead*, emerging markets with strong frameworks are better positioned to navigate risk-off shocks. These economies benefit from easier policy trade-offs and face a lower risk of sudden stops. In contrast, countries with weaker frameworks should resist the temptation to delay monetary tightening, which can de-anchor inflation expectations and increase output losses. In these economies, foreign exchange interventions can provide temporary relief. However, they are costly and should neither substitute nor postpone necessary efforts to anchor inflation expectations and reduce balance sheet mismatches. More broadly, foreign exchange interventions should not hinder the warranted adjustment of macroeconomic policies, including of the exchange rate.
- The visible improvements in policy frameworks and their role in strengthening emerging market resilience to recent risk-off episodes should not lead to complacency. Three key considerations warrant attention:
- *First*, external conditions may not remain favorable. Although global financial conditions have been relatively benign since the global financial crisis, this can change quickly, leading to reduced consumption and investment in advanced economies. Meanwhile, rising global interest rates pose significant risks for emerging markets with already elevated debt. And geopolitical tensions can trigger unfavorable changes in emerging markets' terms of trade.
 - *Second*, the economic fallout from the COVID-19 pandemic and the energy shock triggered by Russia's war in Ukraine has led to higher public-debt-to-GDP ratios in many emerging markets. The eroded fiscal space may limit the ability of fiscal policy to respond effectively to future shocks, underscoring the need to rebuild fiscal capacity before the next period of market stress. Moreover, the postpandemic inflation surge may have put inflation expectations on edge, which means central banks must maintain a steady and credible commitment to inflation stability.
 - *Third*, the risks of policy backsliding should not be overlooked. Recent gains in credibility and institutional strength cannot be taken for granted. As Box 2.3 illustrates, central bank independence may come under pressure from politically driven appointments, potentially leading to fiscal dominance, loss of credibility, and inflation surges. Likewise, fiscal rules could be weakened or disregarded if political economy pressures dominate, undermining fiscal credibility.
- For these reasons, the significant strides of emerging markets in recent years—and their effective responses to recent shocks—should be viewed as a foundation for further strengthening monetary, macroprudential, and fiscal policy frameworks, as well as rebuilding policy buffers to better withstand an increasingly uncertain global environment.

Box 2.1. IMF Arrangements and Emerging Market Resilience

The IMF's precautionary instruments—the Flexible Credit Line (FCL), Precautionary and Liquidity Line (PLL), and Short-Term Liquidity Line (SLL)—are integral components of the institution's lending toolkit. They provide qualifying members with up-front access to IMF resources, with no or limited conditionality, and aim to bolster market confidence while offering insurance against external shocks. These instruments are available to qualifying members with very strong (or sound, in the case of the PLL) economic fundamentals and policy frameworks, a sustained history of implementing (and currently implementing) very strong policies, and a commitment to maintain these policies.

This box assesses the effectiveness of these instruments in supporting emerging markets' access to international financial markets and bolstering market confidence during periods of heightened global risks. An event study around the approval of new FCL and SLL arrangements shows a significant and increasingly pronounced decline in sovereign spreads in the days following the announcements of the arrangements (Figure 2.1.1, panel 1).^{1,2}

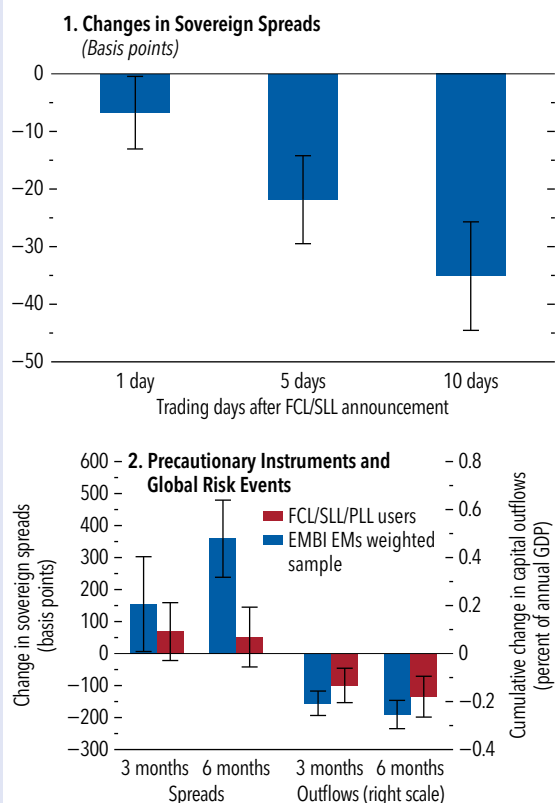
Precautionary instruments also help during risk-off episodes. Local projections with inverse propensity score weighting (Angrist, Jordà, and Kuersteiner 2018) show that emerging markets with precautionary arrangements experienced significantly smaller increases in spreads and capital outflows during the two most recent risk-off episodes, compared with peers with similar fundamentals (Figure 2.1.1, panel 2). These findings indicate that the value of these instruments may increase in a shock-prone environment, in which recurring stress episodes can challenge emerging markets integrated into global trade and finance (IMF 2023b).

The author of this box is Giulio Lisi.

¹This analysis considers the Flexible Credit Line (FCL) arrangements approved in 2009 for Colombia, Mexico, and Poland; the FCLs approved for Chile and Peru in 2020, in the context of the COVID-19 shock; and the 2023 Morocco FCL. It also considers the Short-Term Liquidity Line approved for Chile in May 2022.

²This result is consistent with earlier work (Lisi 2022) and robust to the use of a synthetic control approach (Abadie 2021). On average, spreads remain more than 20 basis points lower than their synthetic counterparts in the 60 trading days following the announcement.

Figure 2.1.1. IMF Precautionary Arrangements and Their Role during Risk-Off Episodes



Sources: Bloomberg Finance L.P.; Emerging Portfolio Fund Research; Haver Analytics; and IMF staff calculations.

Note: Panel 1 shows the estimated change in spreads following the announcement of a new FCL or SLL, relative to other emerging markets included in the EMBI. Estimates control for global financial variables and lagged spreads. Panel 2 shows the impulse response functions from local projections with country and year fixed effects. Shocks are identified at the onset of the COVID-19 pandemic and Russia's invasion of Ukraine. Estimates are derived using inverse probability weighting for 2017–19 macroeconomic outcomes (EMBI spreads, debt to GDP, fiscal deficit, and current account balance) on the probability of observing a precautionary arrangement in the sample. The whiskers denote 90 percent confidence intervals. EMs = emerging markets; EMBI = J.P. Morgan Emerging Market Bond Index; FCL = IMF Flexible Credit Line; PLL = IMF Precautionary and Liquidity Line; SLL = IMF Short-Term Liquidity Line.

Box 2.2. Milestones in Developing Monetary Policy Frameworks

The cornerstone of an effective monetary policy framework is a clear nominal anchor and a strong, credible commitment to price stability. While the nominal anchor may differ across countries, in all cases it must be viewed as clear and credible, providing a basis for price- and wage-setting decisions. Over the past two and a half decades, many emerging market central banks have made substantial progress in modernizing their monetary frameworks—sometimes prompted by disorderly market conditions and at other times facilitated by favorable circumstances. Many of these reforms have placed price stability at the core of their mandates, often supported by IMF technical assistance. This box elaborates on some key milestones.

Limiting the scope for political interference is essential to credibly establishing a commitment to price stability.¹ In some emerging markets, fiscal reforms and government endorsement of the central bank's price stability objective played complementary roles in mitigating concerns about fiscal dominance. Investments in regulatory, supervisory, and macroprudential frameworks have also been crucial to allow monetary authorities to pursue price stability objectives. The Bank of Thailand offers a good example because its adoption of inflation targeting (IT) was supported and complemented by ambitious reforms in Thai financial sector policy.

Depending on the monetary framework, other key milestones may involve building adequate foreign

exchange reserves or clarifying the appropriate role of the exchange rate. For emerging markets with IT, especially those transitioning from fixed exchange rate regimes, allowing for greater exchange rate flexibility and keeping foreign exchange interventions to an appropriate minimum are both critical because they help avoid any perception of targeting specific exchange rate levels and confusion about the “true” nominal anchor. The Central Bank of Chile and the South African Reserve Bank are examples of strong commitment to exchange rate flexibility and limited foreign exchange interventions.

Other key milestones relate to the development of central banks' operational, technical, and decision-making frameworks. Many emerging market central banks have surmounted a range of challenges in building their operational capacity to manage liquidity and steer short-term interest rates while promoting the development of interbank, securities, and other markets key to monetary transmission. The National Bank of Georgia, for example, prioritized a range of policy reforms in these areas to support the development of its IT framework.

A final key milestone is the development of a strong framework for communicating monetary policy decisions and the rationales behind them. Many emerging markets' central banks, including the examples noted in this box, have developed sophisticated communications frameworks centered around regular press conferences, policy statements, and monetary policy reports.² These investments help enhance accountability and improve public understanding of the central banks' objectives and reaction functions.

The author of this box is Thomas J. Carter.

¹See Brandao-Marques and others (2024) for evidence of links between government debt and long-term inflation expectations in emerging markets, along with complementary evidence from David, Pienknagura, and Yépez (2025).

²See Unsal, Papageorgiou, and Garbers (2022) for evidence of improvement in central banks' communication frameworks.

Box 2.3. Macroeconomic Effects of Undermining Central Bank Independence

Implementing monetary policy without political interference is essential for central bank independence because it helps anchor inflation expectations and ensure price stability (Blinder 2000; Bernanke 2010; Fischer 2015; Ioannidou and others 2025). This box examines the macroeconomic effects of diminished central bank independence by leveraging politically motivated governor transitions, which occur when the appointment or removal of the incumbent does not follow clear, rule-based procedures; does not prioritize professional qualifications; and does not preserve the central bank's operational independence.

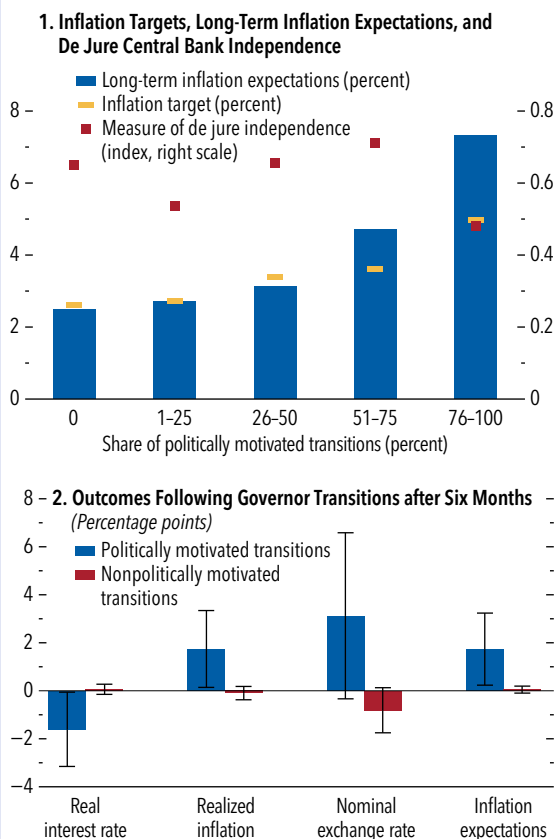
Based on 134 governor transitions in 11 advanced economies and 16 emerging markets since 2000, transitions are classified by whether news reports at the time of the transition mentioned political interference and political motive.¹ Politically motivated transitions have been far more common in emerging markets (50, about half of all transitions) than in advanced economies (5, or 8 percent of all transitions). Moreover, inflation expectations are less well anchored in countries with more frequent politically motivated transitions (Figure 2.3.1): They exceed targets by about 1 percent where such transitions are the majority and by over 2 percent where they are the norm. Expectations remain close to target in countries without political transitions. This correlation holds within both advanced and emerging market economies. No such relationship is found with de jure measures of central bank independence (Romelli 2024).

To identify the effects of politically motivated transitions on macroeconomic variables, the analysis uses difference-in-differences local projections (Dube and others 2023), controlling for past changes in macroeconomic variables, as well as country and time fixed effects. Six months after politically motivated transitions, real rates fall by 1.6 percentage points, exchange rates depreciate by 3.1 percent, and inflation and inflation expectations rise by 1.7 percentage points relative to countries with similar macroeconomic fundamentals that did not experience a governor transition. The exchange rate also tends to depreciate, but the effect is not statistically significant. The limited number of politically motivated transitions in advanced economies makes it hard to have robust

The authors of this box are Marijn A. Bolhuis, Rui Mano, and Hedda Thorell.

¹The classification relies on subjective assessments based on information published for each transition on the website <https://centralbanking.com>, supplemented with news reported by Bloomberg and the Financial Times.

Figure 2.3.1. Effects of Politically Motivated Transitions



Sources: Consensus Economics; Haver Analytics; Organisation for Economic Co-operation and Development; Romelli 2024; and IMF staff calculations.

Note: In panel 1, the bars show the mean of deviations from target of five-year-ahead inflation expectations, yellow rectangles the inflation target, and red squares the de jure central bank independence from Romelli (2024). All variables are expressed by country groups from 2000 to 2024 based on the frequency of politically motivated transitions. In panel 2, the bars show average changes in the outcomes six months after politically motivated transitions (blue bars) and nonpolitically motivated transitions (red bars). The real interest rate is defined as the difference between the 3-month deposit rate (or equivalent) and 12-month-ahead inflation expectations. A positive change in the nominal exchange rate indicates a depreciation. Specifications control for pre-trends in outcome variables, a fixed set of macroeconomic control variables, and country and time fixed effects. The whiskers denote 90 percent confidence intervals. The sample includes all transitions that can be used to isolate the causal effect of the transition.

evidence of differential effects across country groups. Results for emerging market economies are very close to those for the overall sample, while those for advanced economies are either smaller in magnitude (for expected inflation and exchange rate depreciation) or not significant.

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