



# BIS Bulletin

No 79

Lessons from recent experiences on exchange rates,  
capital flows and financial conditions in EMEs

Pietro Patelli, Jimmy Shek and Ilhyock Shim

2 November 2023

BIS Bulletins are written by staff members of the Bank for International Settlements, and from time to time by other economists, and are published by the Bank. The papers are on subjects of topical interest and are technical in character. The views expressed in them are those of their authors and not necessarily the views of the BIS. The authors are grateful to Louisa Wagner for administrative support.

The editor of the BIS Bulletin series is Hyun Song Shin.

This publication is available on the BIS website ([www.bis.org](http://www.bis.org)).

© *Bank for International Settlements 2023. All rights reserved. Brief excerpts may be reproduced or translated provided the source is stated.*

ISSN: 2708-0420 (online)

ISBN: 978-92-9259-707-8 (online)

## Lessons from recent experiences on exchange rates, capital flows and financial conditions in emerging market economies

### Key takeaways

- *Currency appreciation in emerging market economies (EMEs) has gone hand in hand with greater risk-taking, higher capital flows and more accommodative financial conditions, against the backdrop of the increasing share of foreign investment in local currency assets in EMEs' external financing since 2007.*
- *The historically positive correlation between US dollar strength against EME currencies and EME sovereign bond spreads over US Treasuries up to 2021 continued in Latin America but reversed in emerging Asia in 2022–23.*
- *Such a divergence reflects a range of policy responses by EME central banks in the face of the unprecedented combination of shocks in 2022. In particular, central banks in emerging Asia intervened more actively in FX markets and relied less on monetary policy tightening than those in Latin America.*

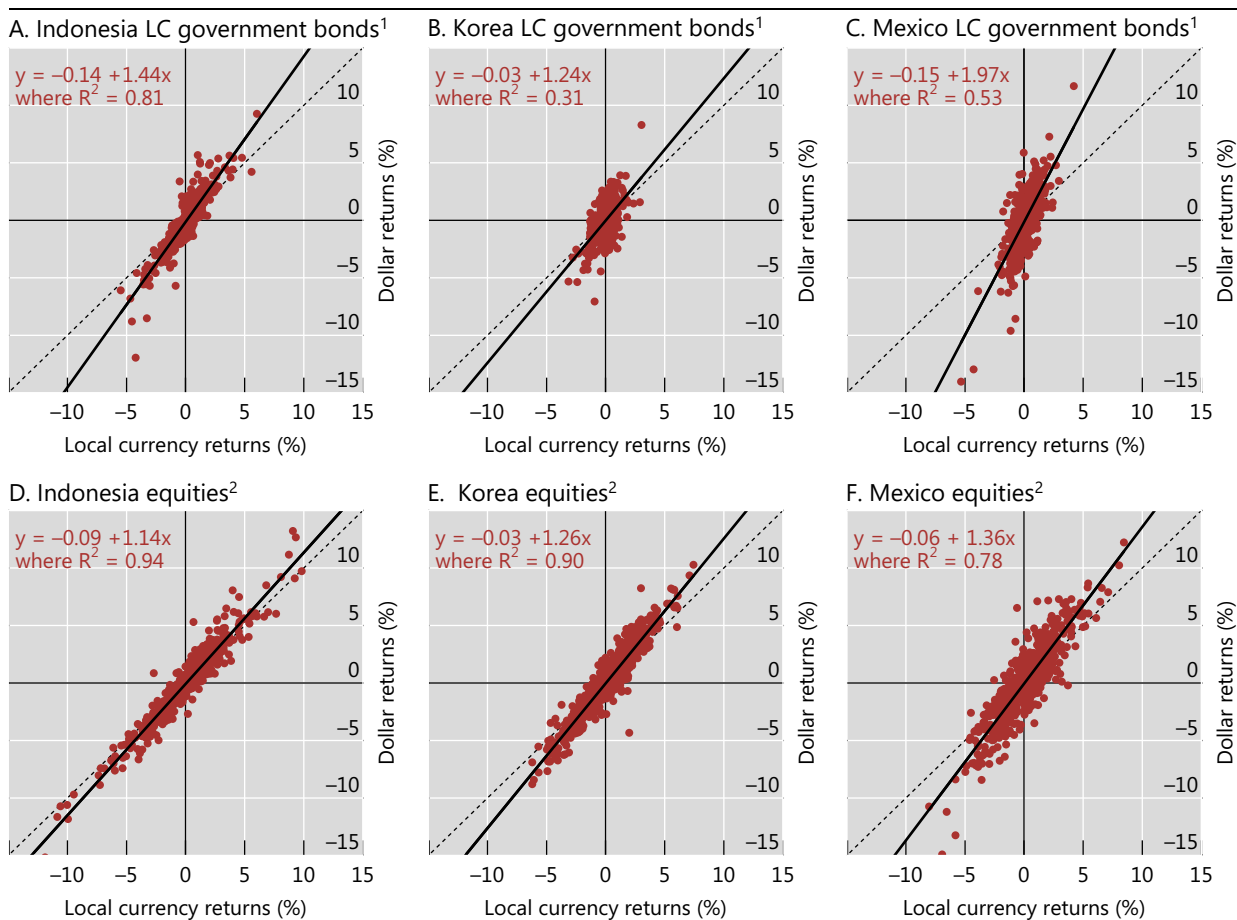
Monetary tightening in 2022–23 in response to high inflation had repercussions for exchange rates and financial conditions. Historically, tighter global conditions and a stronger US dollar confronted emerging market economies (EMEs) with portfolio outflows and a sharp steepening of the yield curve. Yet developments in 2022–23 did not always play out according to these well worn historical patterns. Exchange rate trajectories and shifts in financial conditions diverged across major EMEs, reflecting in part the unique nature of the shocks that hit the global economy through the pandemic and war in Ukraine, as well as different policy approaches across EMEs.

In addition, the shocks in 2022 came in the context of longer-run structural shifts in EME financial markets. In particular, external financing by EMEs, which includes foreign currency borrowing and foreign portfolio investment, has shifted from foreign currency loans to portfolio bond and equity flows since the Great Financial Crisis (GFC). In this context, the underlying financial risk-taking behaviour that tends to co-move with exchange rates takes on importance as a key determinant of credit growth and capital flows, in addition to the better known channel of interest rate differentials.

This Bulletin first examines the recent experiences on exchange rates and financial conditions for EMEs. In particular, it documents that emerging Asia experienced relatively moderate increases in inflation despite large currency depreciations, and raised policy rates less than the United States while deploying FX reserves actively to stabilise exchange rates. By contrast, Latin America experienced strong rises in inflation and raised interest rates earlier and more than the United States. The Bulletin then draws lessons for the conduct of monetary policy and the operation of macro-financial stability frameworks in EMEs.

### Exchange rates and financial conditions

To understand the recent experiences in EMEs, we first consider the relationship between dollar exchange rates and the risk-taking behaviour of portfolio investors. This is especially important given the structural shift towards portfolio flows in global capital markets since the early 2000s. Graph 1 plots returns in local currency bond and equity markets in Indonesia, Korea and Mexico in a way that contrasts US dollar-denominated returns (on the vertical axis) and local currency-denominated returns (on the horizontal axis). The slope of the relationship between dollar-denominated returns and local currency returns is the focus



LC = local currency.

<sup>1</sup> JPMorgan GBI-EM Broad country indices weekly total return from January 2011 to August 2023. <sup>2</sup> MSCI country indices weekly return excluding dividends from January 2011 to August 2023.

Sources: Datastream; JPMorgan Chase; authors' estimates.

of the graph. If bond and equity returns were independent of the exchange rate, there would be no systematic relationship between the dollar-denominated and the local currency-denominated returns.<sup>1</sup>

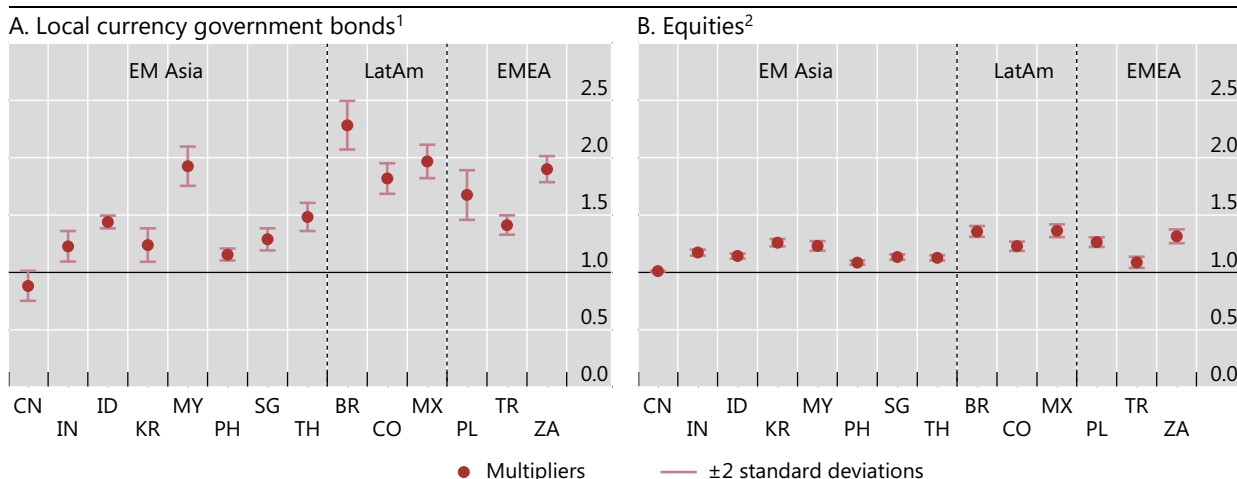
However, Graph 1 shows a clear pattern where the overall returns are correlated with the exchange rate. When the local currency return is positive, the dollar-denominated return is typically higher than the local currency-denominated return, indicating local currency *appreciation* against the dollar. In other words, positive portfolio returns which indicate more accommodative local financial conditions tend to coincide with local currency appreciation against the dollar. Stronger currency and higher asset returns increase foreign investors' risk-taking and capital flows to EMEs. Conversely, when the local currency return is negative, the dollar return is lower than the local currency return, indicating local currency *depreciation*. In this way, bilateral dollar exchange rates of EMEs closely track the trajectory of local currency returns.

In dollar terms, fluctuations of the bilateral dollar exchange rate amplify or "multiply" the local currency return on holding the assets if the slope of the fitted line in Graph 1 is greater than 1. For this reason, the slope can be dubbed the "dollar return multiplier". For almost all individual EMEs, the multiplier for local currency government bonds and equities is greater than 1 (Graph 2). At the regional level, the multipliers are generally lower in emerging Asia than in other EME regions. This is possibly due to regional

<sup>1</sup> Hofmann et al (2020) show a similar relationship between EME local currency bond yield changes and EME local currency bond returns in US dollar terms. Bruno et al (2022) show that the positive relationship of EME currency appreciation against the dollar and EME equity returns in local currency holds after controlling for EME and US macroeconomic and financial variables.

## Dollar return multipliers for EME local currency bond and equity markets

Graph 2



EM Asia = emerging Asia; EMEA = emerging Europe, Middle East and Africa; LatAm = Latin America.

<sup>1</sup> Slope of the fitted line for US dollar returns on an EME's local currency government bonds against its local currency returns. JPMorgan GBI-EM Broad index weekly total return from January 2011 to August 2023. <sup>2</sup> Slope of the fitted line for US dollar returns on an EME's equities against its local currency returns. MSCI country index weekly return excluding dividends from January 2011 to August 2023.

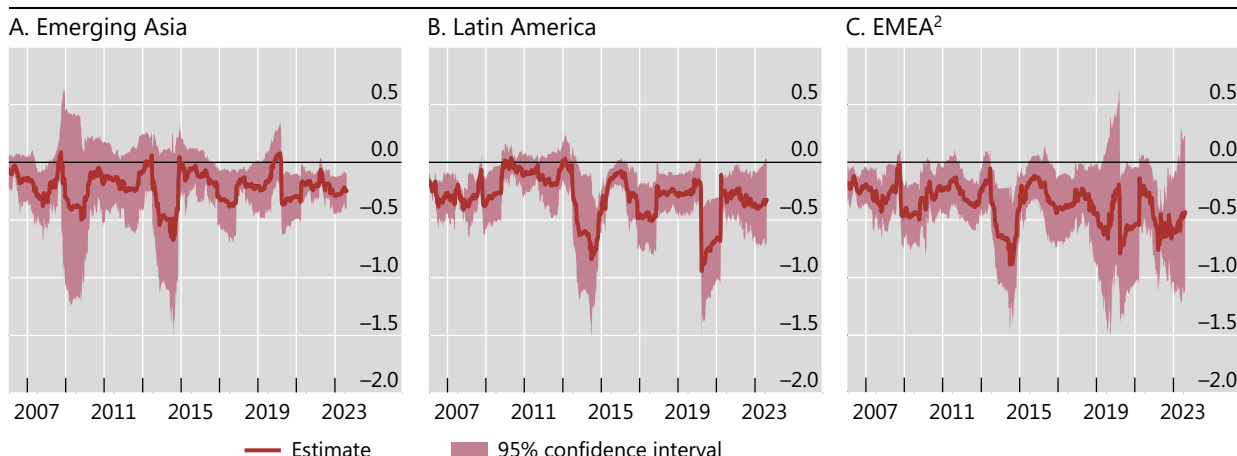
Sources: Datastream; JPMorgan Chase; authors' estimates; adapted from Bruno et al (2022).

differences in the development of local currency asset markets, the cost and availability of hedging tools and the risk of large exchange rate adjustments, reflecting in part EMEs' choice of FX intervention policy.

There is considerable variation over time in the relationship between EME asset returns and exchange rate pressure. Moreover, such variation is primarily driven by global factors, as proxied by the broad dollar index.<sup>2</sup> Graph 3 shows the sensitivity of EME portfolio returns to increases in the broad US dollar index in a regression of bond returns on the broad dollar index. Graph 3 shows that the impact is larger during periods of stress, such as the GFC, the euro area debt crisis, the Covid-19 outbreak in 2020 and the recent broad monetary tightening than during normal times. In this way, there is a general relationship between foreign investors' risk-taking and EMEs' financial conditions and the dollar's strength.<sup>3</sup>

## Sensitivity of EME local currency bond returns to US dollar appreciation has fluctuated<sup>1</sup>

Graph 3



<sup>1</sup> The sensitivity is calculated using a moving window of one year in a weekly panel regression of the JPMorgan GBI-EM Broad local currency bond country return on the broad US dollar index return. One coefficient is estimated per week. The sample includes 16 EMEs and covers the period from January 2006 to August 2023. <sup>2</sup> Emerging Europe, Middle East and Africa.

Sources: JPMorgan Chase; BIS; authors' estimates.

<sup>2</sup> As a global factor, the dollar index is not completely exogenous to large EME regions such as emerging Asia or Latin America.

<sup>3</sup> Bruno et al (2022) provide similar results for the sensitivity of equity returns to the dollar index.

At the regional level, the sensitivity of EME local currency bond prices to the US dollar in normal times was generally similar across EME regions over the past 15 years (Graph 3). However, in 2020 and 2022–23, the sensitivity for Asian EMEs was smaller in size than that for the other EMEs. This implies that facing a sharp dollar appreciation, investors in Asian EME bonds tend to suffer less than those in other EME bonds.

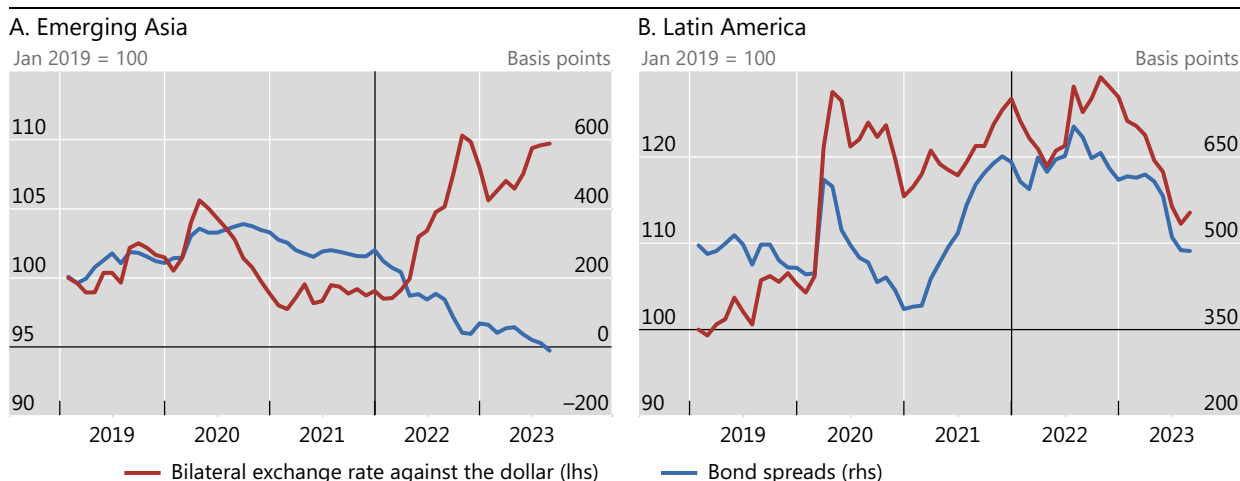
## EME dollar exchange rates and local currency bond spreads in 2022–23

When relative financial conditions are measured in terms of the *spread* between EME local currency bonds and the equivalent US Treasury instrument, since early 2022 we find a divergence across regions in the trajectories of EME sovereign bond spreads<sup>4</sup> as well as their bilateral exchange rates vis-à-vis the dollar.

Before 2022, a depreciation of EME currencies vis-à-vis the dollar was associated with a widening of EME bond spreads against US Treasuries, as the depreciation of EME currencies “pulled” capital away from EMEs and raised local bond yields by more than for the equivalent US Treasuries (Graph 4). However, this pattern has changed signs since early 2022. In emerging Asia, even as the dollar strengthened against emerging Asian currencies, local currency yields rose by less than for the equivalent US Treasury yields, leading to a narrowing of spreads (Graph 4.A). This is in line with the diminished sensitivity of Asian EMEs’ bond spreads to their bilateral exchange rate vis-à-vis the dollar compared with the past. In Latin America, there was the additional feature that currency values actually strengthened against the dollar, further reinforcing the declining yield differentials vis-à-vis US Treasuries (Graph 4.B).

Central bank policy responses are one possible element in the explanation. Latin American central banks tightened earlier and more than the US Federal Reserve (Graph 5.B), which helped to raise long-term yields and to keep these currencies stable against the US dollar in 2022. Since then, as US monetary tightening has been more sizeable than that of Latin American countries, the policy rate differential has started to decline but has remained relatively high. By contrast, the pace of tightening by Asian EMEs was modest, reflecting the region’s relatively low and less persistent inflation pressures. In addition, even as emerging Asian currencies depreciated against the dollar, their impact on emerging Asian bond yields was smaller than that on Latin American bond yields given the smaller dollar return multiplier and the lower sensitivity of bond returns to the dollar in emerging Asia. Therefore, the spread on these Asian bonds vis-à-vis US Treasuries declined in 2022–23 and reached negative levels in several of them in 2023 (Graph 5.A).

Bilateral US dollar exchange rate and local currency sovereign bond spread in EMEs<sup>1</sup> Graph 4



<sup>1</sup> The vertical line shows the start of 2022. An increase in the bilateral exchange rate indicates a depreciation of the local currency against the US dollar. Bond spread is the difference between the yield of the JPMorgan GBI-EM Broad index (7–10 years) and the 10-year US Treasury yield.

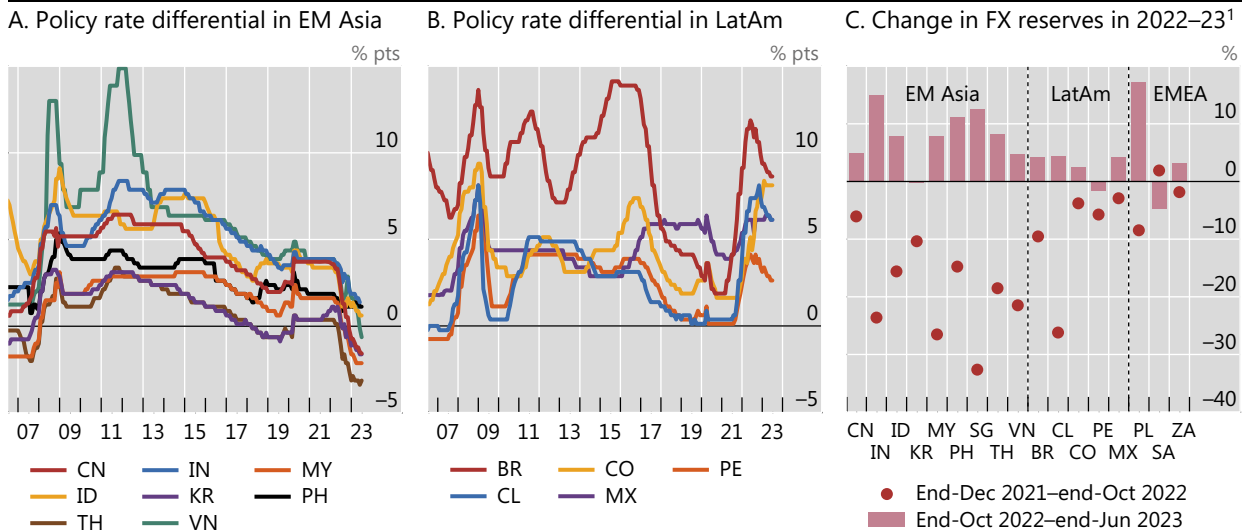
Sources: Bloomberg; JPMorgan Chase.

<sup>4</sup> The spread captures the tightening of an EME’s domestic financial conditions relative to those in the United States. It should be noted that the spread is one measure of, or a proxy for, an EME’s financial conditions, but not a summary measure of them.

A second important factor is the special nature of the shocks that hit the global economy in 2022, and their impact on domestic inflation in EMEs.<sup>5</sup> For commodity exporters in Latin America, higher commodity prices increased commodity producers' revenue, improved the terms of trade and helped to support the value of their currencies, but also contributed to rapid increases in the inflation rates of domestically produced goods and services. By contrast, Asian EMEs, being net importers of energy and food items, were subject to large increases in import prices and deteriorating terms of trade in 2022. However, the impact of higher import prices on domestic inflation in Asian EMEs was smaller than that in other EMEs.

Policy rate differential between EMEs and the United States and FX intervention

Graph 5



<sup>1</sup> FX reserves include net forward positions.  
Sources: IMF; Macrobond; national data; BIS.

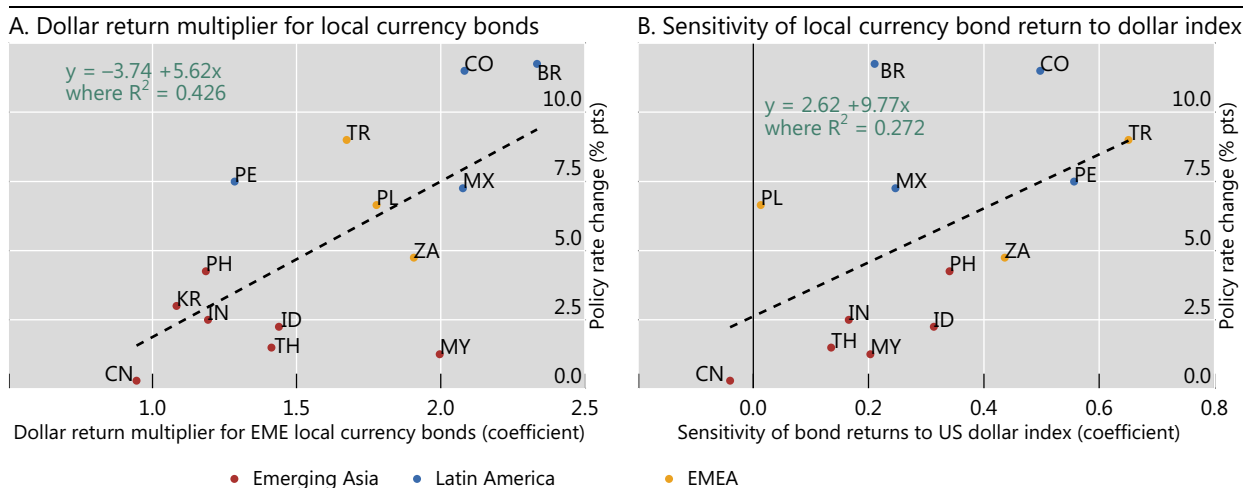
## Policy considerations

Facing the dual challenges of tight global financial conditions and high inflation since 2022, most Asian EMEs have raised policy rates, but more modestly than in other regions (Graph 5.A). They have also relied more on a variety of complementary policy tools (eg FX intervention and bond market intervention).<sup>6</sup> Their large policy buffers in the form of sizeable FX reserves and ample fiscal space have helped Asian EMEs to deal with the excessive capital outflows and exchange rate volatility via FX intervention and to use fiscal subsidies to counter high inflation, respectively. By contrast, Latin American countries raised policy rates substantially from early 2021 to control inflation (Graph 5.B), which also helped to stem capital outflows and currency depreciation. In addition, they were generally more willing to accept larger exchange rate movements than Asian EMEs. In 2022, some of them, such as Brazil and Mexico, also experienced currency appreciation. Therefore, they relied on FX intervention to a lesser degree on average than emerging Asian economies (Graph 5.C). Many Latin American countries also used fiscal subsidies to dampen inflation.

The monetary policy decisions of EME central banks reflect choices on how best to address the unique combination of shocks that buffeted the global economy in 2022. Among other things, the choices reflect country-specific features of financial markets. An economy with a historically larger dollar return multiplier (Graph 2) or with a higher sensitivity of bond returns to the dollar index as of mid-2021 (Graph 3) tended to raise the policy rate more in 2021-23 (Graphs 6.A and 6.B, respectively). To the extent that global investors in an EME with a higher dollar return multiplier or sensitivity to the dollar are subject to greater exchange rate risks when they invest in the EME's local currency bonds, the EME's central bank may choose

<sup>5</sup> See Hofmann et al (2023) on rising commodity prices in US dollars and the simultaneous strengthening of the dollar in 2022.

<sup>6</sup> For a detailed account of how Asia-Pacific economies deployed a policy mix during 2022, see BIS (2023).



<sup>1</sup> Policy rate change is the difference between the highest and lowest policy rate in an EME in 2021–23. The value of the dollar return multiplier is from Graph 2.A. The sensitivity of bond returns to the dollar index is measured by using data between end-June 2020 and end-June 2021. Sources: IMF; national data; BIS global liquidity indicators; authors' estimates.

to raise the policy rate to avoid excessive capital outflows instead of FX intervention. Notably, the EMEs that hiked the policy rate by less and relied more on FX intervention are generally in Asia (red dots in Graph 6), while those that raised the policy rate by more are in other EME regions (blue and orange dots).

As inflation starts to come down in 2023, there could be room for monetary policy easing going forward. For example, the central banks of Brazil, Chile, Peru and Poland reduced their policy rates in July to September 2023. The breathing space afforded to EMEs can provide opportunities to rebuild policy buffers. Indeed, many EME central banks have been rebuilding FX reserves as global financial conditions have largely eased (Graph 5.C).

More generally, when implementing their macro-financial stability frameworks,<sup>7</sup> EME central banks and other financial authorities will need to consider a combination of monetary, fiscal, exchange rate and prudential policies to achieve macroeconomic, domestic financial and external stability. In doing so, economy-specific characteristics such as the level of financial market development (eg FX markets), policy buffers (eg FX reserves) and the degree of inflation expectations anchoring (eg the size of the pass-through of exchange rate fluctuations to domestic inflation) play an important role in the choice of policy mix.

## References

BIS (2023): *Inflation, external financial conditions and macro-financial stability frameworks in Asia-Pacific*, report by a working group established by the BIS Asian Consultative Council, October.

Borio, C, I Shim and H S Shin (2022): "Macro-financial stability frameworks: experience and challenges", *BIS Working Papers*, no 1057, December.

Bruno, V, I Shim and H S Shin (2022): "Dollar beta and stock returns", *BIS Working Papers*, no 1000, February.

Hofmann, B, D Igan and D Rees (2023): "The changing nexus between commodity prices and the dollar: causes and implications", *BIS Bulletin*, no 74, April.

Hofmann, B, I Shim and H S Shin (2020): "Bond risk premia and the exchange rate", *Journal of Money, Credit and Banking*, vol 52, S2, pp 497–520, December.

<sup>7</sup> For the concept of macro-financial stability framework, see Borio et al (2022).



## Previous issues in this series

No 78 3 October 2023	Mapping the realignment of global value chains	Han Qiu, Hyun Song Shin and Leanne Si Ying Zhang
No 77 13 September 2023	Margins and liquidity in European energy markets in 2022	Fernando Avalos, Wenqian Huang and Kevin Tracol
No 76 7 September 2023	The oracle problem and the future of DeFi	Chanelle Duley, Leonardo Gambacorta, Rodney Garratt and Priscilla Koo Wilkens
No 75 19 May 2023	Disinflation milestones	Benoit Mojon, Gabriela Nodari and Stefano Siviero
No 74 13 April 2023	The changing nexus between commodity prices and the dollar: causes and implications	Boris Hofmann, Deniz Igan and Daniel Rees
No 73 11 April 2023	Stablecoins versus tokenised deposits: implications for the singleness of money	Rodney Garratt and Hyun Song Shin
No 72 11 April 2023	The tokenisation continuum	Iñaki Aldasoro, Sebastian Doerr, Leonardo Gambacorta, Rodney Garratt and Priscilla Koo Wilkens
No 71 29 March 2023	Fiscal and monetary policy in emerging markets: what are the risks and policy trade-offs?	Ana Aguilar, Carlos Cantú and Rafael Guerra
No 70 24 February 2023	Private debt, monetary policy tightening and aggregate demand	Miguel Ampudia, Fiorella De Fiore, Enisse Kharroubi and Cristina Manea
No 69 20 February 2023	Crypto shocks and retail losses	Giulio Cornelli, Sebastian Doerr, Jon Frost and Leonardo Gambacorta
No 68 7 February 2023	Why are central banks reporting losses? Does it matter?	Sarah Bell, Michael Chui, Tamara Gomes, Paul Moser-Boehm and Albert Pierres Tejada
No 67 26 January 2023	Does money growth help explain the recent inflation surge?	Claudio Borio, Boris Hofmann and Egon Zakrajšek
No 66 12 January 2023	Addressing the risks in crypto: laying out the options	Matteo Aquilina, Jon Frost and Andreas Schrimpf
No 65 16 December 2022	London as a financial centre since Brexit: evidence from the 2022 BIS Triennial Survey	Jakub Demski, Robert N McCauley and Patrick McGuire

All issues are available on our website [www.bis.org](http://www.bis.org).