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EME bond portfolio flows and long-term  
interest rates during the Covid-19 pandemic

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## EME bond portfolio flows and long-term interest rates during the Covid-19 pandemic

### Key takeaways

- *Bond portfolio outflows from emerging market economies (EMEs) are typically associated with currency depreciation and rising domestic long-term interest rates. This relationship asserted itself in a particularly stark way during the Covid-19 crisis in mid-March 2020.*
- *The relationship between bond portfolio outflows and long-term rates varies across EMEs, depending on factors such as bond market depth, FX market functioning and sovereign risk. The impact of these factors on the relationship has been thrown into sharper relief during the Covid-19 pandemic.*
- *Recent policy responses, such as bond purchase programmes, duration swaps and efforts to stabilise exchange rates, can play an important role in maintaining financial stability in EMEs when they face bond outflows. Policy measures to develop deep and liquid bond markets and strengthen the resilience of local currency bond and FX markets are likely to enhance market functioning in the longer term.*

Increasing worries on the part of global investors about the Covid-19 outbreak spreading around the world sparked a sharp sell-off of assets in March 2020. Local currency bond markets in emerging market economies (EMEs) experienced outside portfolio outflows and huge spikes in long-term interest rates (eg Hofmann et al (2020)). In particular, bond portfolio outflows from EMEs eclipsed those seen in previous episodes of market turmoil, such as the Great Financial Crisis (GFC) of 2007–09 and the 2013 taper tantrum.

In recent years, financing through bond issuance has grown in importance relative to bank loans in EMEs. Greater international participation in domestic bond markets has meant that foreign holdings of local currency bonds have been on the rise. As a result, bond portfolio flows, and their effects on EME local currency government bond yields, have become increasingly important for domestic monetary conditions.

In what follows, we focus on the relationship between EME bond fund flows and local monetary conditions as reflected in domestic long-term interest rates, contrasting the dynamics during the Covid-19 pandemic with those during the pre-pandemic period. Given that flows and long-term rates are endogenous variables, we cannot make claims as to specific directions of causality. It is, nevertheless, important to understand how the relationship between these variables has changed during the crisis, and how it relates to various country-specific factors.

In the analysis, we focus on government bond yields. This is motivated by the fact that government bond prices play an important role in local financial conditions as a benchmark against which other assets, notably corporate bonds and loans, are priced. We find that in the 10 years prior to the pandemic, bond outflows were typically associated with rising bond yields in EMEs and inflows with falling yields. During the pandemic, this relationship has intensified. We also find that the responsiveness of EME yields to bond flows varies across EMEs depending on factors such as the bid-ask spread, foreign participation, exchange rate volatility and the sovereign credit default swap (CDS) spread.

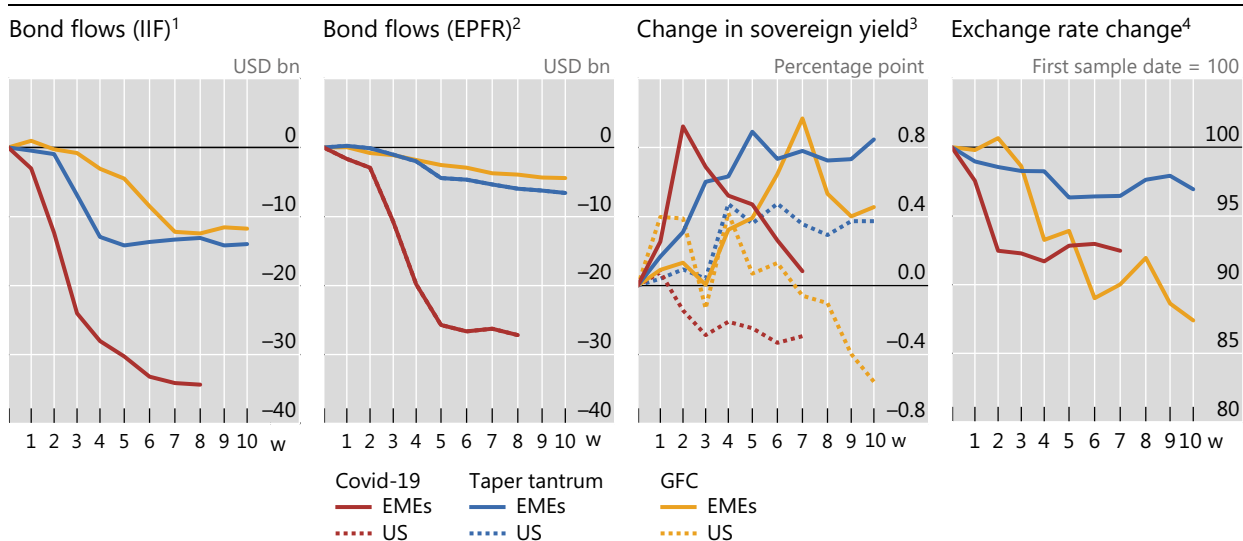
Our analysis suggests that policy actions taken during the pandemic are important in stabilising domestic financial conditions in EMEs. These include central banks purchasing bonds, swapping long-term

securities for short-term securities via auctions and providing liquidity to domestic institutional investors. Moreover, given the central role that EME exchange rates play as a determinant of financial conditions, addressing currency fluctuations will help quell turbulence in domestic monetary conditions due to sharp changes in long-term interest rates. In the longer term, policymakers' efforts to develop and deepen local capital markets, such as fostering a strong domestic institutional investor base, would result in better financial resilience and a greater ability to withstand portfolio outflows from their bond markets.

## Bond flows, long-term rates and exchange rates during market turmoil

Graph 1 compares the dynamics of cumulative EME bond outflows during the Covid-19 pandemic with those observed during the height of the GFC and during the taper tantrum using two different measures: daily non-resident portfolio bond flows reported by the Institute of International Finance (IIF) and weekly bond fund flows reported by Emerging Portfolio Fund Research (EPFR).<sup>1</sup> In both measures, the pandemic saw substantially larger bond outflows than the two earlier episodes (first two panels). The bond fund outflows from EMEs over the first nine weeks, for example, totalled close to \$30 billion, ie three to six times those observed during the GFC or the taper tantrum. However, the difference becomes much smaller if we normalise the dollar amount of bond outflows by total market size. Normalised this way, the outflows during the pandemic have been around 10–50% larger than those during the GFC or the taper tantrum.<sup>2</sup>

EME portfolio bond flows, bond yields and exchange rates during market turmoil Graph 1



Covid-19: 4 March to 24 April 2020; taper tantrum: 27 May to 28 August 2013; Great Financial Crisis (GFC): 15 September to 19 December 2008.

<sup>1</sup> Cumulative weekly portfolio debt flows to eight EMEs tracked by the IIF: Hungary, India, Indonesia, Mexico, Poland, South Africa, Thailand and Ukraine. <sup>2</sup> Cumulative weekly EME local currency bond fund flows tracked by EPFR. <sup>3</sup> Cumulative weekly change in five-year local currency sovereign bond yield. Simple average across 19 EMEs used for analysis in the next sections of this Bulletin. <sup>4</sup> Cumulative weekly change in bilateral dollar exchange rate. Simple average across 19 EMEs used for analysis in the next sections of this Bulletin.

Sources: Bloomberg; EPFR; IIF; authors' calculations.

<sup>1</sup> The IIF flows measure net sales and purchases of bonds by non-residents for a sample of EMEs, based on daily or weekly data from national central banks, government agencies and securities exchanges. EPFR instead reports investor flows to mutual funds and exchange-traded funds. Various studies report that variations in EPFR flows closely match those in the much broader (but much less frequent) balance of payments data, which the IIF data aim to capture.

<sup>2</sup> The ratio of the cumulative bond outflows from seven EMEs (Hungary, India, Indonesia, Mexico, Poland, South Africa and Thailand) tracked by the IIF to the total size of their domestic bond markets from the BIS debt securities statistics was 1.11%, 0.85% and 1.21% during the GFC, taper tantrum and Covid-19 episodes, respectively. In addition, the ratio of the cumulative bond fund outflows from all EMEs tracked by EPFR to the total size of all EME domestic bond markets from the same BIS source was 0.080%, 0.075% and 0.125% during the three aforementioned episodes, respectively.

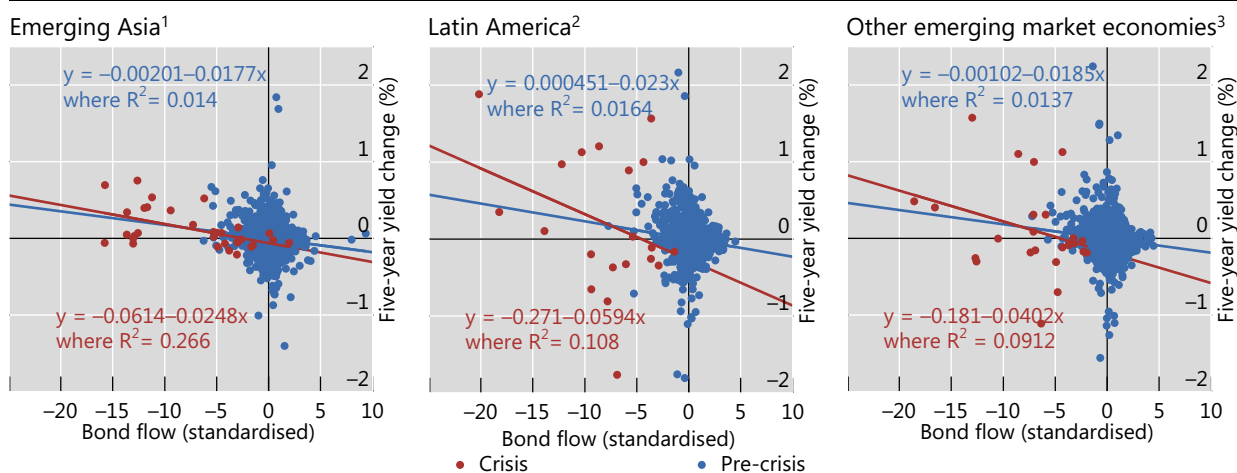
As these outflows occurred, EME long-term interest rates surged and EME currencies depreciated (Graph 1, last two panels). In the first half of March 2020, five-year EME government bond yields rose by almost 100 basis points on average. By contrast, US Treasury yields fell during the same period. The yield increase among EMEs was similar to that seen after the Lehman collapse and during the taper tantrum, but the peak was reached substantially quicker than in the two previous episodes. However, EME long-term interest rates also retreated faster this time around than in the previous crises. This is likely to be due to aggressive policy actions taken by EMEs, including rate cuts, provision of liquidity to financial institutions and announcements of bond purchase programmes. Moreover, the expansion or reintroduction of Federal Reserve swap lines to central banks, the Fed’s repurchase agreement facility for foreign and international monetary authorities and other actions to provide US dollar liquidity globally helped stabilise EME exchange rates and bond portfolio flows, thereby easing the pressure on interest rates (Avdjiev et al (2020)).

## Bond flows and long-term interest rates before and during Covid-19

To what extent are bond flows systematically associated with monetary conditions as captured by changes in domestic long-term interest rates? Graph 2 shows scatter plots of weekly changes in five-year domestic bond yields against contemporaneous standardised bond flows.<sup>3</sup> Although both yield changes and bond flows are noisy, a pattern emerges of a negative relationship for EMEs in the pre-crisis sample (blue dots and lines): bond outflows (inflows) are associated with bond yield increases (declines). During the Covid-19 crisis, the yield-flow relationship has become more pronounced across all EMEs (red dots and lines).

Long-term interest rates and bond flows in EMEs

Graph 2



“Pre-crisis” refers to the period from January 2010 to February 2020, while “Crisis” refers to March 2020. Country bond flows are standardised by their standard deviation.

<sup>1</sup> China, Chinese Taipei, India, Indonesia, Korea, Malaysia, the Philippines and Thailand. <sup>2</sup> Brazil, Chile, Colombia, Mexico and Peru. <sup>3</sup> The Czech Republic, Hungary, Israel, Poland, Russia and South Africa.

Sources: EPFR; national data; authors’ calculations.

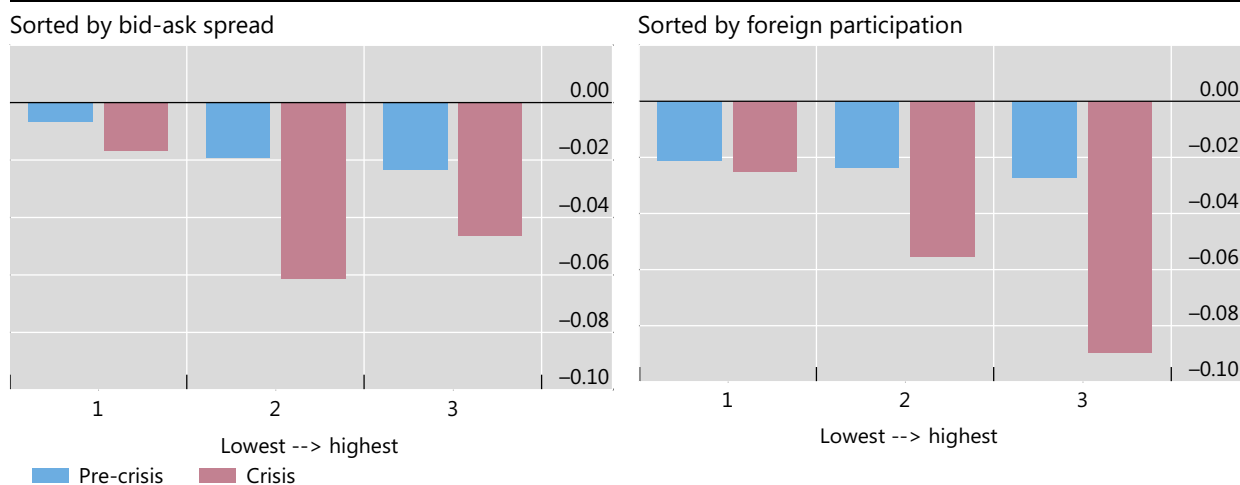
It is evident from Graph 2 that there is some heterogeneity in the relationship between long-term interest rates and portfolio flows across EME regions. What might explain these different sensitivities? Local market conditions may be important for the relationship between bond flows and yield changes. EME bond markets, in particular, differ in their depth and liquidity. When a country’s bond market liquidity

<sup>3</sup> Here, and for the remainder of the analysis, we rely on EPFR data due to the wider country coverage than IIF data. The EPFR flows are reported in millions of US dollars. However, in order to make the results comparable across countries and avoid having the largest economies dominate the results, we standardise the amount of flows by dividing each country’s flows by its standard deviation. Although EPFR provides data on EME bond flows starting from January 2004, we limit the sample to January 2010 onwards (and even later for some countries) due to low coverage and other data issues in the early parts of the sample.

is lower than that of another country, the same amount of bond outflows and the corresponding amount of bond sales are likely to have a bigger impact on bond prices. Sorting EMEs by their average local currency bond market bid-ask spread, we find that, before the Covid-19 crisis, bond prices in markets with higher bid-ask spreads were more sensitive to bond flows (Graph 3, left-hand panel). This pattern has been less clear during the Covid-19 crisis, although for the group with the lowest bid-ask spreads the yield sensitivity to bond flows has been 60–70% lower than that in the two groups with higher average spreads.

Sensitivity of long-term interest rates to bond flows in EMEs

Graph 3



“Pre-crisis” refers to the period from January 2010 to February 2020, while “Crisis” refers to March 2020. The bars represent slope coefficients from regressions of changes in five-year bond yields on bond portfolio flows, in three different country groups where countries have been sorted by average bid-ask spread (left-hand panel) or average foreign participation (right-hand panel).

Sources: Arslanalp and Tsuda (2014); AsianBondsOnline; Bloomberg; EPFR; authors’ calculations.

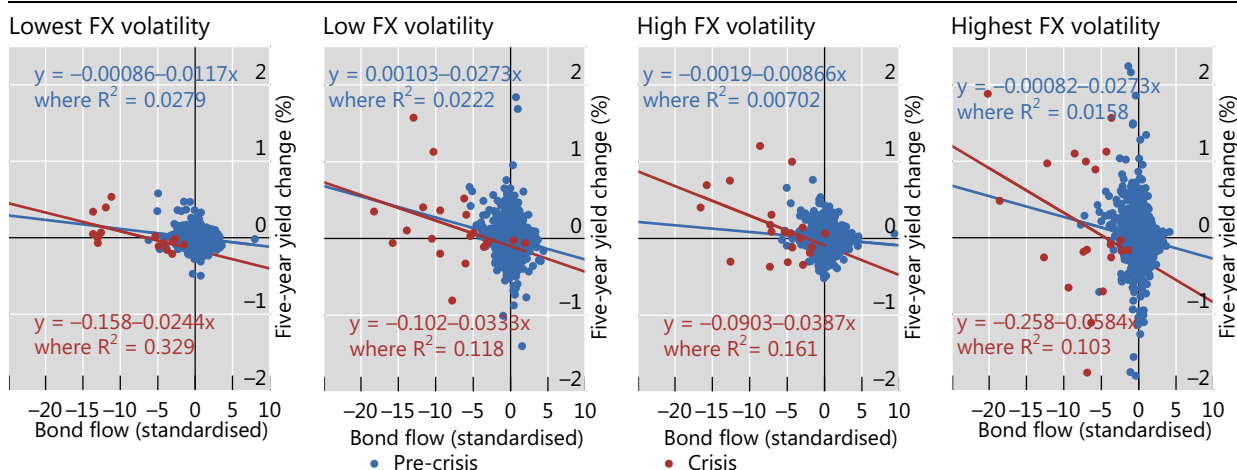
Another possibility is that a higher degree of foreign participation in local currency bond markets is associated with a greater sensitivity of yields to bond flows (see Cerutti et al (2019) and Hofmann et al (2020) for a discussion). The right-hand panel of Graph 3 shows that in the past there was a mild tendency for markets with higher foreign participation to exhibit higher yield sensitivity to flows. During the Covid-19 crisis, this relationship has strengthened considerably. Hence, EMEs with high foreign bond market participation have on average suffered much larger yield increases for any given bond portfolio outflow than those with low foreign participation. A possible explanation for this phenomenon is that, in markets with very high foreign participation, domestic investors would need to step in and purchase relatively larger amounts of bonds as foreign investors rush for the exits in a crisis. As a result, in such markets, the price impact of a given bond outflow may be amplified, as yields would need to rise substantially to entice domestic bond investors.<sup>4</sup>

The relationship between yields and bond flows may also vary depending on how volatile the exchange rate is. It is possible that, for countries with systematically higher exchange rate variability, this relationship may be stronger. One reason could be that international investors react more aggressively in markets where they face greater risk due to higher exchange rate volatility. Graph 4 displays the yield-flow relationship for four groups of EMEs sorted by the average US dollar exchange rate volatility before and during the Covid-19 crisis. While there is no clear pattern across the groups before the crisis, we find that the higher the exchange rate volatility during the crisis, the greater the yield increases in response to bond outflows. It therefore seems that the crisis-time volatility of the exchange rate is more important than the “typical” volatility for the yield-flow relationship, suggesting that international investors are more concerned about the former than the latter.

<sup>4</sup> Another explanation of this phenomenon is a more pronounced relationship between bond portfolio outflows and exchange rate depreciation during a crisis. We find that EME local currency depreciations against the US dollar tended to be followed by bond fund outflows before the Covid-19 crisis, and that this relationship has strengthened in EMEs during the crisis.

Change in long-term interest rates and bond flows in EMEs, sorted by FX volatility

Graph 4



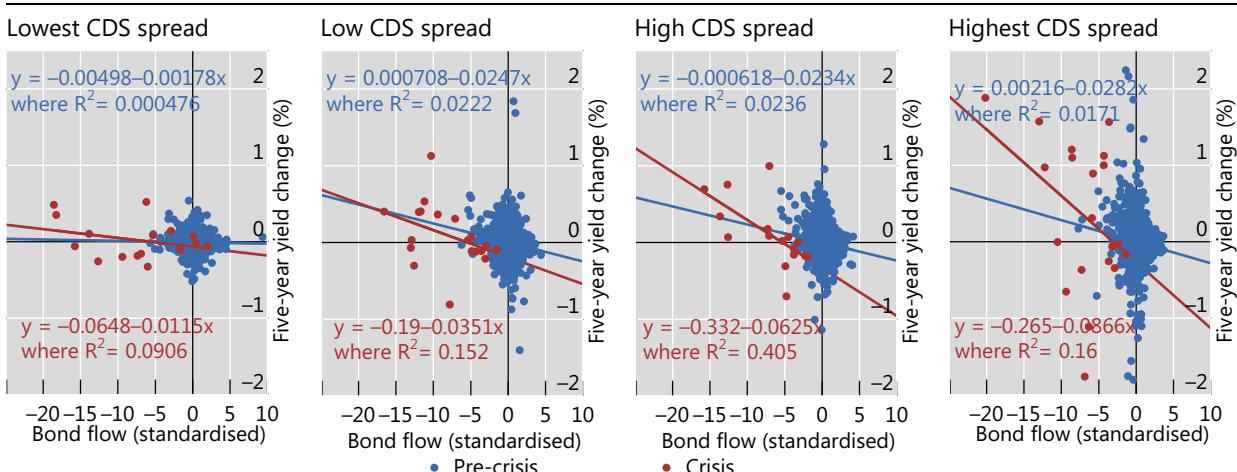
“Pre-crisis” refers to the period from January 2010 to February 2020, while “Crisis” refers to March 2020. Country bond flows are standardised by their standard deviation. Sorting is based on the standard deviation of weekly exchange rate returns against the US dollar during each of the two periods.

Sources: EPFR; national data; authors’ calculations.

Finally, we consider the possibility that financial stress or market-based indicators of the creditworthiness of EMEs as receiving countries may affect the relationship between local long-term interest rates and bond flows. It is entirely possible that investors, in particular foreign ones, will react more strongly during a crisis in markets that are characterised by low creditworthiness or relatively higher financial stress than elsewhere. We use pre-crisis sovereign CDS spreads to proxy for investors’ perceptions of such market characteristics.<sup>5</sup> Before the Covid-19 crisis, there was some tendency for this relationship to strengthen with higher CDS spreads (Graph 5, blue lines). During the crisis, this effect has become much more pronounced: in the group with the highest CDS spreads, yield changes were almost eight times higher on average for a given bond flow than in the group with the lowest CDS spreads (Graph 5, red lines). The perceived fragility, as measured by the CDS spread, matters greatly in times of crisis.

Change in long-term interest rates and bond flows in EMEs, sorted by CDS spreads

Graph 5



“Pre-crisis” refers to the period from January 2010 to February 2020, while “Crisis” refers to March 2020. Country bond flows are standardised by their standard deviation. Sorting is based on the average daily five-year sovereign CDS spread during 2019.

Sources: EPFR; national data; authors’ calculations.

<sup>5</sup> Specifically, we use the average daily five-year sovereign CDS spread during 2019 as a proxy.

## Policy considerations

Our analysis suggests that when EMEs face strong outflows from their local currency bond markets, various policy initiatives may have an important role to play in directly stabilising those markets. During the Covid-19 crisis, such policy measures have included government bond purchase programmes, as launched by more than 10 EME central banks in March–April 2020, and the establishment of bond market stabilisation funds by some EME financial authorities. Another useful tool utilised during the crisis has been duration swaps, which allow central banks to swap long-term securities for short-term ones via auctions, thereby stabilising conditions in local currency bond markets in situations where long-term securities come under great selling pressure and there is market demand for short-term securities.<sup>6</sup>

Given that exchange rate fluctuations play a central role in these dynamics, addressing such fluctuations will also help quell turbulence in domestic financial conditions through sharp changes in long-term interest rates. Moreover, by providing liquidity and temporarily relaxing regulatory requirements, authorities can increase the room for domestic institutional investors to step in and purchase local currency bonds, thereby further contributing to the stabilisation of bond markets.

Our results show that markets associated with lower liquidity, higher foreign participation, higher FX volatility or higher credit spreads have exhibited a sharper relationship between bond yields and bond portfolio flows during the Covid-19 pandemic. These results point to the importance of strengthening the resilience of domestic markets/economies in the longer term against a sharp deterioration in global financial conditions. To that end, local bond markets could become less sensitive to portfolio flow pressures if the efficient functioning and liquidity/depth of these markets are strengthened. Policymakers' efforts to develop and deepen local capital markets, such as fostering a strong domestic institutional investor base, would therefore result in better financial resilience and an enhanced ability to withstand global funding shocks. Finally, efforts to improve EMEs' creditworthiness are also likely to be important for maintaining the resilience of EME bond markets during market turmoil.

## References

- Arslanalp, S and T Tsuda (2014): "Tracking global demand for emerging market sovereign debt", *IMF Working Papers*, no WP/14/39.
- Avdjiev, S, E Eren and P McGuire (2020): "Dollar funding costs during the Covid-19 crisis through the lens of the FX swap market", *BIS Bulletin*, no 1, April.
- Cerutti, E, S Claessens and D Puy (2019): "Push factors and capital flows to emerging markets: why knowing your lender matters more than fundamentals", *Journal of International Economics*, vol 119, pp 133–49.
- Hofmann, B, I Shim and H S Shin (2020): "Impact of the Covid-19 pandemic on exchange rates and local currency bond markets", *BIS Bulletin*, no 5, April.

<sup>6</sup> For example, in April 2020 the Bank of Mexico announced that it would receive securities with maturities of 10 years or longer and deliver other securities with maturities of up to three years. This is similar to the duration swap operation conducted by the same central bank during the GFC.



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