

Financial market development and monetary policy

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Abstract

Financial market development (FMD), monetary policy regimes and monetary policy implementation are closely intertwined. We discuss their evolution in emerging market economies (EMEs) since the early 2000s. Sufficiently developed local money and debt markets were seen as a prerequisite for inflation targeting. However, many EME central banks also chose monetary instruments and targets with a view to develop these markets. We argue that FMD largely improved domestic monetary transmission. At the same time, greater financial integration has increased the importance of global factors for domestic monetary conditions. We conclude by discussing how FMD has enabled central banks to extract useful information from financial markets.

JEL classification: E44, E52, F3, O16.

Keywords: financial market development; monetary policy; monetary policy implementation; monetary policy transmission; market-based indicator.

Introduction

Financial markets in emerging market economies (EMEs) have seen major structural shifts over the past two decades. While bank-based finance has remained dominant, capital markets have developed, local currency bond markets have deepened, and repo and derivatives markets have evolved in tandem with cash instruments. This market deepening has gone hand in hand with rising indebtedness, mainly of households and corporates, but also of some EME sovereigns. The composition of investors has also changed. As domestic banks have reduced their exposure, domestic institutional investors have gained ground and foreign participants have also become more prominent in the investor base (see chartpack).

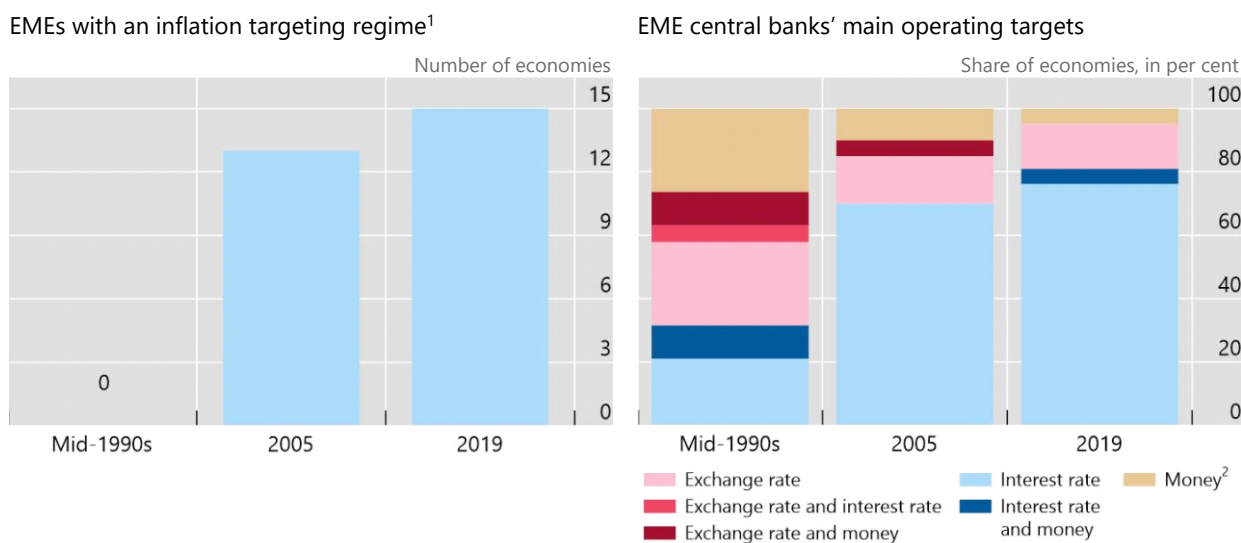
This note discusses how these aspects of financial market development (FMD) have affected monetary policy in EMEs since the early 2000s. It first reviews the interaction between FMD, monetary policy regimes and monetary policy implementation before turning to the implications of FMD for monetary policy transmission. Finally, the note documents how the quality of information that central banks can derive from macro-financial indicators has shifted as markets develop.

FMD and monetary policy implementation

The adoption of inflation targeting (IT) in most EMEs by the early 2000s both promoted FMD but also depended on it, with major implications for monetary policy implementation.¹ In fact, sufficiently developed local money and debt markets were seen as a prerequisite for IT (IMF (2004)). The shift towards IT coincided with a broader trend towards more market-based approaches for monetary policy implementation. By the mid-2000s, interest rates had superseded money aggregates as operating targets (Graph 1). Market-based instruments, such as repos, moved to the core of monetary policy implementation, developing the market segments in which they were used.

Since then, FMD and policy implementation have continued to reinforce each other. This is evident from central bank contributions to this meeting. Even without major shifts in most EME policy frameworks since the mid-2000s, 86% of survey respondents indicate that monetary policy instruments have affected FMD, while 75% believe that FMD has influenced the choice of instruments (Annex Table A1).

¹ The transition to IT regimes was supported by policies to strengthen economic fundamentals, notably reforms to overcome fiscal dominance and to bolster banking system soundness. In turn, a more stable macro-financial environment also facilitated FMD.



Monetary policy implementation has continued to foster FMD...

Over the past two decades, many EME central banks have used their discretion in choosing monetary instruments and targets to develop financial markets. They could do so because any desired policy stance can be achieved by various permutations of the central bank's balance sheet, and because markets used in operations become more liquid thus supporting FMD.

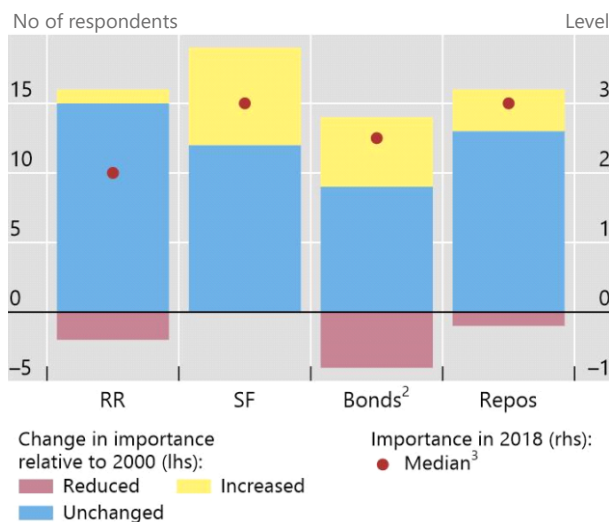
Many EMEs have focused on developing their money and local government bond markets. For example, the use of repos has boosted the growth of repo markets.² Greater use of repo, typically against government paper, has leveraged the initial development of the government bond market to facilitate banks' liquidity management. In turn, repo use has supported the secondary market liquidity of government bonds. Where local government bond markets were small relative to liquidity absorption needs, central banks have issued central bank securities, inter alia to develop the yield curve (Annex Table A2). Issuance has taken place at short maturities, partly to avoid adverse interactions with the treasury's issuance of government bonds (Annex Table A3).

A few EMEs have also implemented monetary policy with a view to developing other markets. For instance, the central bank of Hungary's mortgage bond purchase programme in 2018 stimulated the issuance of mortgage bonds to help banks manage duration risk. And the People's Bank of China has started to accept green credit and green bonds as eligible collateral for its monetary policy operations as part of range of measures to encourage banks to engage in green finance.³

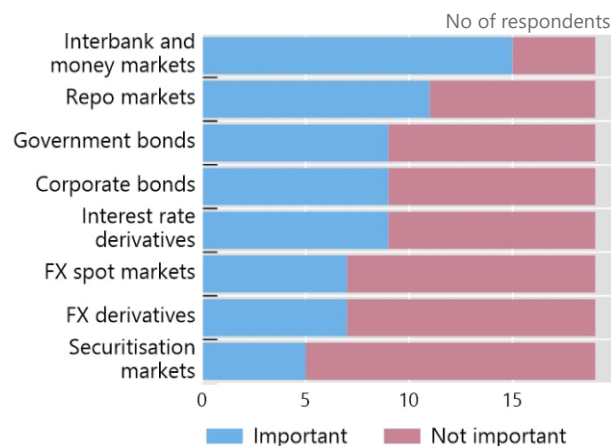
² While there is much cross-country variation, repo markets in AEs experienced a similarly rapid growth a couple of decades earlier, often encouraged by the central banks themselves (Borio (1997)).

³ See People's Bank of China, *PBC Releases China's Green Finance Development Report*, 2019.

Change in importance of MP implementation tools from 2000 to 2018¹



Policy implementation could benefit in particular from money market development¹



SF = Standing facility in domestic currency; RR = Reserve requirements.

¹ Based on survey answers of 19 respondents. ² Issuance of central bank bonds or government bonds for monetary purposes. ³ High = 3, Low = 0.

Sources: BIS survey; BIS calculations.

Having nurtured a market, sustained FMD may require central banks to reduce their engagement. For example, the Bank of Thailand reports that a private repo market only developed once it ceased to intermediate all repos and instead entered into repos only with primary dealers.

... while FMD has influenced monetary policy implementation

Over the past two decades, some EME central banks have continued adjusting their operating targets to take account of FMD. Adjustments have included, for example, a move towards market segments where liquidity had increased, or an adjustment of the targeted maturity. Targets with shorter maturities are easier to control but, at the same time, require sufficiently developed markets to ensure a stable transmission to the private sector’s key funding rates. As an example, the existence of deep repo markets has allowed Mexico to target collateralised rates.

As markets develop, central banks have gained flexibility in their policy implementation, making greater use of market-based instruments. With such instruments, policymakers are increasingly able to influence funding costs outside their direct regulatory net. For example, the reliance on repos against domestic currency-denominated assets has continued to increase over the past two decades (Graph 2, left-hand panel). And relative to outright market transactions, repos require no liquid underlying market for securities (indeed, they can foster the underlying market’s liquidity, as seen above); have only an indirect impact on the price of the securities transferred; and break the link between the maturity of the paper and that of the monetary policy operation.

Meanwhile, standing facilities and, to a lesser extent, reserve requirements have remained important. In part, this reflects the continued dominance of banks in financial intermediation. Standing facilities can also complement market-based implementation of policy, for example, in a corridor system where they limit interest rate volatility.

While domestic financial markets have continued to develop, foreign currency instruments have naturally kept a role in monetary policy implementation in many EMEs. When domestic government securities are scarce, foreign currency can serve as collateral in repurchase agreements, specifically in FX swaps. In addition, almost all EME central banks intervene at times in FX markets to stabilise exchange rates, in part as the private sector cannot always smoothly manage the FX risks associated with shocks to capital flows.⁴

In the future, FMD could further enhance monetary policy implementation. Survey respondents emphasise the development of interbank, money, repo and government bond markets (Graph 2, right-hand panel). For example, the South African Reserve Bank is reviewing the compliance of reference and benchmark rates with global standards to promote efficient pricing of financial instruments. And the Annex discusses how central banks can support the development of benchmark government bonds to improve bond market efficiency.

Effects on monetary policy transmission

Over the past two decades, FMD has affected monetary transmission through both domestic and external channels.⁵ Most central banks report that the pass-through from policy rates to private sector lending rates has improved since 2000, with FMD playing a supportive role (Annex Tables A4 and A5).

FMD and domestic channels of transmission

Domestic FMD has seemingly strengthened monetary transmission in several ways over the past two decades, even as a number of caveats remain.

First, deeper local currency government bond markets, with longer maturities, have tended to strengthen the interest rate channel (see contributions from Russia and Thailand). In particular, at the short to medium end of the yield curve, most survey participants judge government bond markets to be highly liquid nowadays, facilitating monetary transmission (Annex Table A6). That said, other than for mortgages, private sector benchmark rates in the majority of EMEs remain linked mainly to short-term interest rates (Graph 3).⁶

⁴ See BIS (2019a) and the 2019 Emerging Markets Deputy Governors meeting, BIS (2019b).

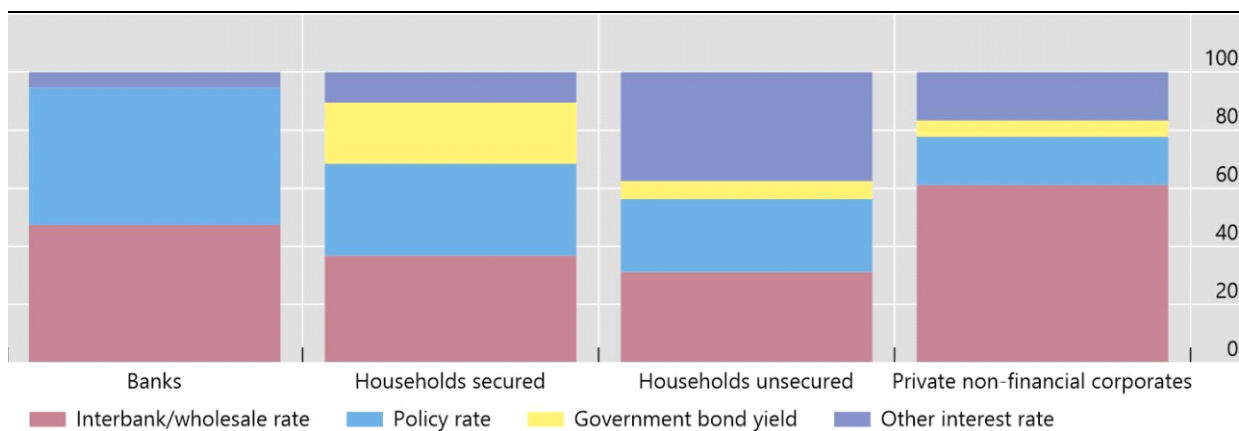
⁵ See Table 1 in Singh et al (2008) for a conceptual framework.

⁶ For all the sectors considered in Graph 3, most survey respondents indicated that financial market development had played a role in affecting the key funding rate. See Annex Table A7.

Key funding rates for different sectors follow various market benchmarks¹

Share of economies, in per cent

Graph 3



¹ Based on central bank responses regarding the interest rate that best summarises the funding conditions for each of the four sectors.

Source: BIS survey.

Second, EME firms and households are likely to have become more sensitive to changes in interest rates as a consequence of financial deepening.⁷ Financial inclusion has allowed more households and firms to borrow. Growing private sector balance sheets have strengthened collateral and wealth effects.⁸ And given higher levels of indebtedness, cash flow effects arising from changes in debt servicing costs have become more important.⁹ Higher debt service can have large effects: some estimates find that the peak impact of a 1 percentage point contractionary monetary policy shock on GDP amounts to -0.9% in countries with high debt, about twice as large as when debt is low (Graph 4, left-hand panel).¹⁰ Transmission may be stronger particularly when policy rates are tightened. When rates are cut, highly indebted household and firms may deleverage rather than spend more in the short term.¹¹

Third, in the light of more developed financial markets, the expectations channel of monetary policy may have strengthened. With more liquid markets, market-based interest rate benchmarks, and a significantly broader investor base (see below), interest rates quickly incorporate any changes in expectations about monetary policy.

That said, the central bank's audience may not always observe or react to signals in the ways intended by policymakers. For example, global investors may at times be driven mainly by trends in global risk aversion. This underscores the need for precise

⁷ Secular shifts in the economy could counteract such effects. For example, economic activity could be increasingly driven by sectors that tend to be less interest rate-sensitive, such as business investment.

⁸ See for instance Central Bank of Malaysia (2015).

⁹ Drehmann et al (2017) document the strong negative impact of debt service costs on GDP, and how a credit boom leads to a delayed rise in debt service, and thus a decline in output over time.

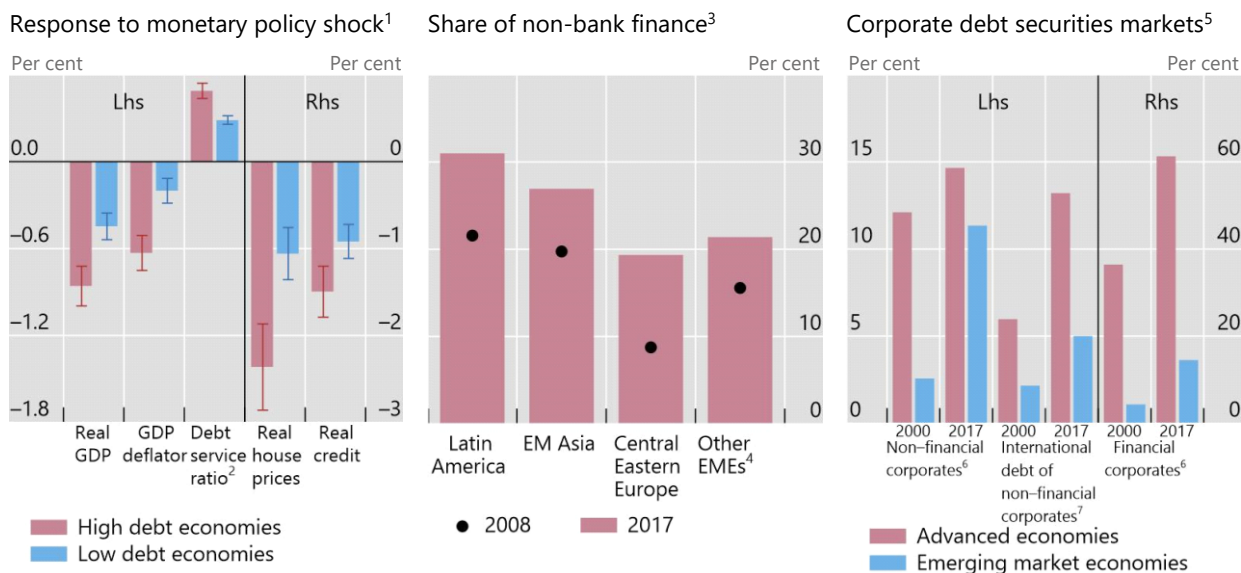
¹⁰ While these estimates are obtained over the 1985–2008 sample, which includes mainly advanced economies, private sector indebtedness in several EMEs, including China, Hong Kong SAR, Korea and Singapore, has now reached comparable levels.

¹¹ Alpanda et al (2019) report that the effects of expansionary monetary policy shocks on output are weaker when household indebtedness is high.

and forward-looking communication with both resident and non-resident investors, as some central bank contributions highlight.¹²

Stronger transmission when debt is high; share of non-bank finance rises

Graph 4



¹ The panel shows the peak response of the different variables to a monetary policy shock of a 1 percentage point increase in the policy rate, over the next 28 quarters. The lines show the one-standard error confidence intervals. Estimates are based on the panel VAR results in Hofmann and Peersman (2017). The sample includes 16 advanced economies (AEs), together with Hong Kong SAR and South Africa, from Q1 1985 to Q4 2008. ² Unit for debt service ratio is percentage points. ³ Non-bank credit to the private non-financial corporate sector, as a percentage of bank credit and debt securities. Non-financial corporate sector debt securities measured as total debt securities if available, or domestic debt securities plus international debt securities. Simple averages across regions. ⁴ IL, TR and ZA. ⁵ Bars show median of debt securities outstanding as a share of GDP. If total debt securities are not available, sum of international and domestic debt securities. ⁶ By residence. ⁷ By nationality.

Sources: Hofmann and Peersman (2017); CGFS (2019).

Last, the role of non-bank finance has increased, with ambiguous implications for monetary transmission (Graph 4, centre and right-hand panels). Increased non-bank finance could strengthen monetary transmission to the extent that it has exposed banks to more competition and intensified the risk-taking channel of monetary policy.¹³ The risk appetite and funding costs of non-bank intermediaries may be more sensitive to monetary policy than those of banks. Indeed, the effect of a monetary policy shock on output appears to be somewhat larger in economies with sizeable non-bank financial sectors.¹⁴ But increased non-bank finance may amplify the effects of global financial conditions, potentially weakening transmission, as discussed next.

¹² See eg the notes from Malaysia and Thailand.

¹³ See Borio and Zhu (2012) and Adrian and Shin (2009). The Bank of Thailand's contribution highlights the effect on competition.

¹⁴ See IMF (2016).

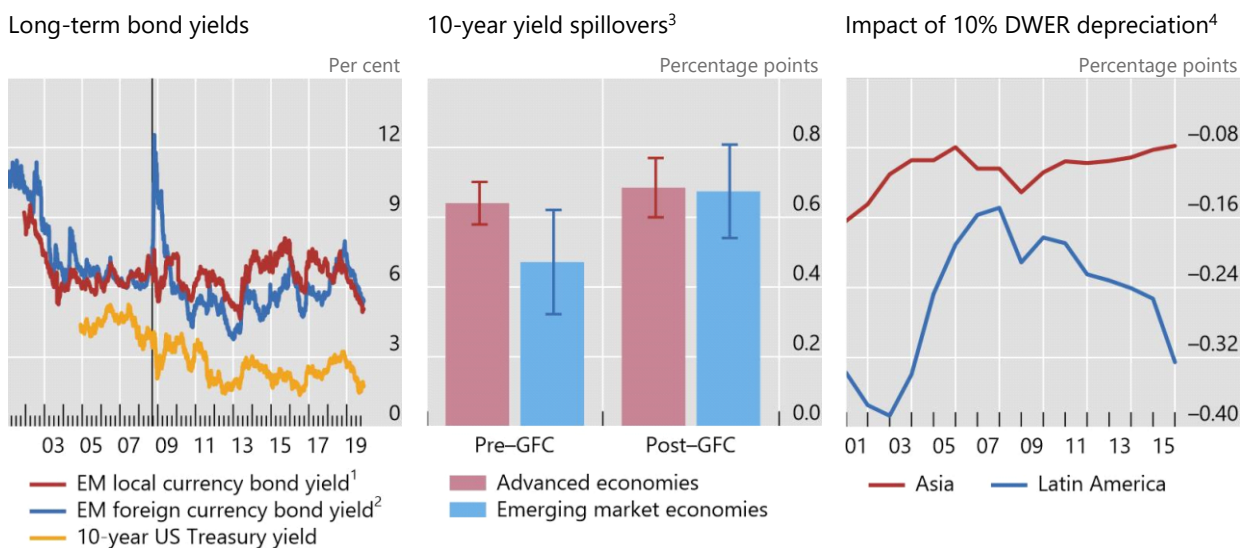
FMD, monetary transmission and the international dimension

The international dimension has always been crucial for the conduct of monetary policy in EMEs, but FMD has changed some of the underlying structures. As EMEs have liberalised their capital accounts and exchange rate markets, reaping in many ways the benefits of financial globalisation, they have become more exposed to large swings in capital flows and exchange rates. If anything, this sensitivity has increased post-GFC. To cope with these challenges, most EME inflation targeters have adopted a controlled floating exchange rate regime and have added macroprudential and, in some cases, capital flow management measures to their monetary policy toolkit (BIS (2019a)).

The growing influence of global financial conditions on domestic ones in EMEs is apparent from the increase in the co-movement of US and EME yields (Graph 5).¹⁵ Simple panel regressions with monthly EME yield changes suggest a coefficient of 0.47 on US yields pre-GFC, and 0.67 thereafter. This correlation is very close to that observed between bond yields in small open advanced economies and their US equivalents, which has remained stable over time.

External factors affect domestic monetary conditions

Graph 5



¹ JP Morgan Government Bond Index – Emerging Markets (GBI-EM), seven to 10 years. ² JP Morgan Emerging Market Bond Index (EMBI), seven to 10 years. ³ The panel shows the response of the local currency 10-year yield to a 1 percentage point increase in the US 10-year yield, using monthly data and the specification in Mehrotra et al (2019). The lines show the two-standard error confidence intervals. Pre-GFC period covers M1 2001 to M6 2008; post-GFC includes M1 2010 to M9 2017. The sample of AEs includes AU, CA, CH, DK, NO, NZ and SE; the one for EMEs covers 21 EMEs. ⁴ The graph shows the impact of a 10% depreciation in the debt-weighted exchange rate on the ratio of capex to total assets in the following year, for a firm at mean net FX leverage. EM Asia includes CN, ID, IN and KR; Latin America includes BR, CL and MX. Based on the specification in Banerjee et al (2020).

Sources: Banerjee et al (2020); Bloomberg; Datastream; JP Morgan Chase; national data.

¹⁵ The increased co-movement could also reflect greater co-movement in macroeconomic conditions.

The effects of global financial conditions transmitted through capital flows have also tended to weaken the transmission of monetary policy. They have reduced the central bank's ability to steer the economy through policy rate adjustments.¹⁶

That said, even if long-term interest rates have become more susceptible to global factors, monetary transmission to household and corporate loans rates may have remained broadly constant. Several country contributions point this out, given the prevalence of floating and short-term benchmark rates (Graph 3).¹⁷

This still leaves room for the so-called financial channel of the exchange rate – the impact of exchange rate changes on domestic financial conditions through the balance sheets of domestic borrowers and foreign lenders/investors. Two major elements of FMD have likely strengthened this channel (see the companion note for a detailed discussion of these trends).¹⁸ First, non-financial EME corporates have increasingly relied on foreign currency borrowing, often unhedged. Second, foreign investors have substantially increased their holdings of local currency government bonds. All else equal, the foreign currency exposures of these actors ease domestic financial conditions when the exchange rate appreciates because financial constraints are relaxed. This counteracts the tightening effects of higher policy rates, weakening transmission.

The importance of this channel is supported by evidence suggesting that an exchange rate depreciation against funding currencies reduces business investment (Graph 5, right-hand panel). Moreover, this effect is found to be stronger for corporates that are more highly leveraged in foreign currency, and it is more powerful in EMEs than in AEs.¹⁹ Due to currency mismatches, an interest rate cut is therefore less likely to be expansionary in EMEs than in AEs.

FMD seems to have aligned the dynamics in EMEs more closely with those in small open AEs. Not only has the correlation of domestic yields with US rates become more similar across the two country groups, but the median effects of domestic monetary policy shocks on exchange rates in EMEs with large FX markets and fully flexible exchange rates are broadly similar to those in small open AEs (Graph 6). In response to a contractionary monetary policy shock of 10 bp, high-frequency data suggests that the median appreciation of the exchange rate against the USD on announcement has been 74 bp in Mexico, 34 bp in South Africa, 69 bp in Australia and 140 bp in Canada (left-hand panel).²⁰ However, monetary transmission seems to be still much more uneven in EMEs, as indicated by the considerable variation in the EME exchange rate responses to a domestic monetary policy tightening (right-hand panel). The wide interquartile ranges even include many instances of exchange rate depreciations, particularly in South Africa.

¹⁶ See Rey (2014) and Obstfeld (2015).

¹⁷ For country experiences, see the contributions by Korea, Malaysia and Thailand. See also BIS (1994).

¹⁸ See also BIS (2019a), Bruno and Shin (2015a,b) and Hofmann et al (2019).

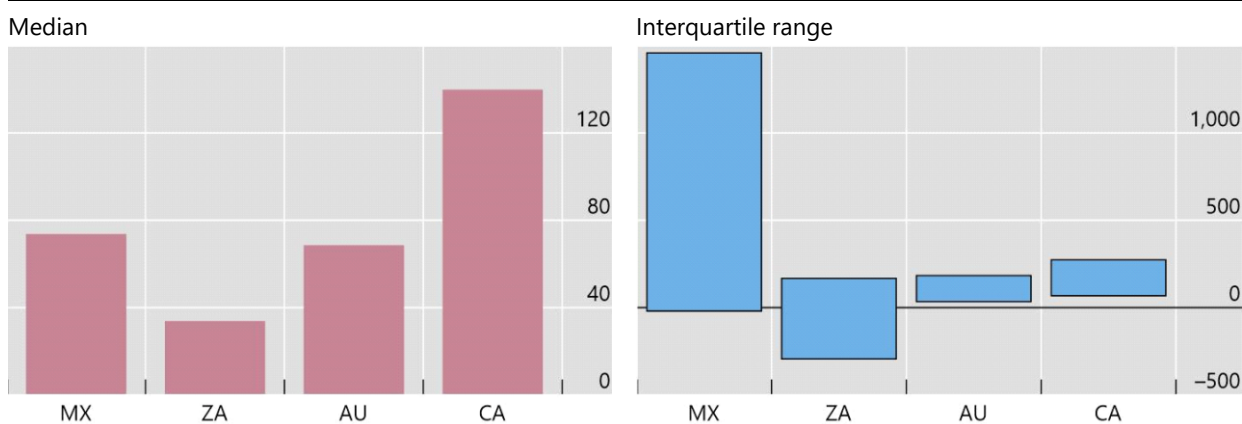
¹⁹ See Banerjee et al (2020) and Avdjiev et al (2019).

²⁰ The stronger median response in AEs could be driven by the prominent role of exchange rates in monetary transmission close to the zero lower bound; see Ferrari et al (2017).

Monetary transmission to FX more uneven in EMEs than in AEs¹

In basis points

Graph 6



¹ Based on high-frequency tick data. Change in the bilateral exchange rate against the USD, in response to a 10 basis point increase in a three-month interest rate, 15 minutes before and after monetary policy announcements. A positive sign denotes an appreciation of the local currency. Only events with at least five bids during the 30-minute time period are included. Sample covers Dec 2015–Sept 2019 (Mexico); Jan 2016–Sept 2019 (South Africa); Feb 2010–May 2019 (Australia) and Jan 2010–Apr 2019 (Canada).

Sources: Thomson Reuters; BIS calculations.

In the future, advances in digital technology could affect monetary transmission through the international dimension. One channel is potential currency substitution to global stablecoins (GSCs). In their contributions to the meeting, some central banks discuss how GSCs could reduce the traction of domestic monetary policy.²¹ The note from Singapore mentions how even stable fiat currencies could risk being displaced if technological platforms provide cheap and efficient means of payment and transfers.

Deriving information from macro-financial indicators

FMD has also affected the information content of various macro-financial indicators that central banks use to calibrate policy.

For one, FMD has reduced the information that monetary aggregates contain about future inflation. Since 1995, the conventional relationship between money growth and inflation in EMEs has collapsed and is now as weak as in AEs (Graph 7, left-hand panel). FMD has played a role here by making the ratio of GDP to money (the velocity of money) less stable. The adoption of IT has recognised this development (Graph 1).

Correspondingly, and as markets have deepened and become more liquid, central banks have relied more on market-based indicators, in particular on inflation and interest rate expectations.²² For example, in South Africa, FMD has allowed the central bank to assess the market expectations for interest rates from contracts benchmarked against interbank rates and inflation expectations from break-even

²¹ See the contributions from Saudi Arabia, Singapore and South Africa.

²² See also De Pooter et al (2014) and Sousa and Yetman (2016).

rates. Similarly, in Mexico, a deeper and more liquid money market has enabled the central bank to extract expectations of policy rate decisions. Other indicators have also proved relevant for monetary policy, for example, credit default swap spreads to measure country risk premia, and option-implied measures of currency and stock market volatility (see contribution by Russia).

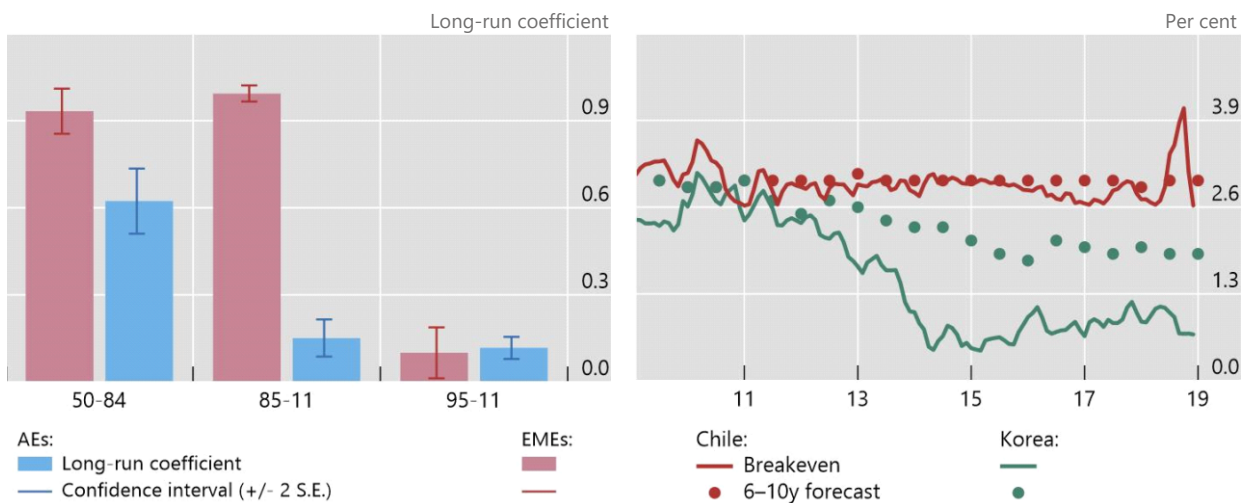
That said, the number of available market-based indicators generally remains small in most EMEs. Their use can be constrained by illiquidity and varying risk premia. For example, the Bank of Korea reports that the volume of inflation-linked bonds remains small and the yields are volatile, even though issuance started over 10 years ago. As a result, break-even inflation rates are much more volatile than survey expectations (Graph 7, right-hand panel).

Shifting information content of macro-financial indicators

Graph 7

Relationship between money growth and inflation¹

Break-even inflation and survey expectations²



¹ The graph shows the long-run impact of money growth on inflation, estimated by the pooled mean group estimator. Based on Gertler and Hofmann (2016), Table 5. ² 10-year break-even inflation rates based on government bonds.

Sources: Gertler and Hofmann (2016); Bloomberg; Consensus Economics.

The use of market-based indicators for calibrating policy is generally not free of challenges. In addition to volatility, as discussed above, one issue is that the central bank may simply tease out of the market the information that the central bank itself has provided – a kind of “echo chamber” effect. Listening to market signals with self-awareness of the central bank’s outsized role in financial markets can give central banks space to take a more detached position and facilitates decision making (Shin (2017)).

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Appendix

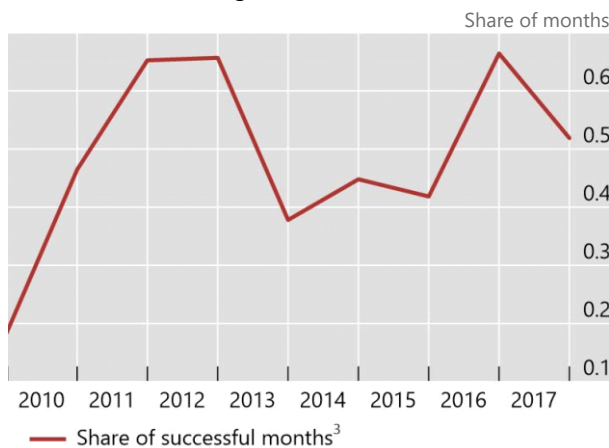
Establishing benchmark domestic currency bonds

Thanks to their superior liquidity, benchmark bonds are the primary instruments that market participants use to take positions and adjust prices in response to new information. Those prices then serve as a reference for the rest of the bond market, thus helping to improve the market's efficiency. They also support the development of local currency bond markets. While benchmark bonds seem to have arisen spontaneously (although over many decades) in the deepest and most liquid markets, such as in the United States,²³ authorities in many EMEs have taken steps to support their emergence. Recent research indicates that these policies can be successful, so that the benefits of benchmark bonds need not be confined to the largest and most liquid bond markets (Remolona and Yetman (2019)). With suitable prodding, much smaller markets can support benchmark bonds.

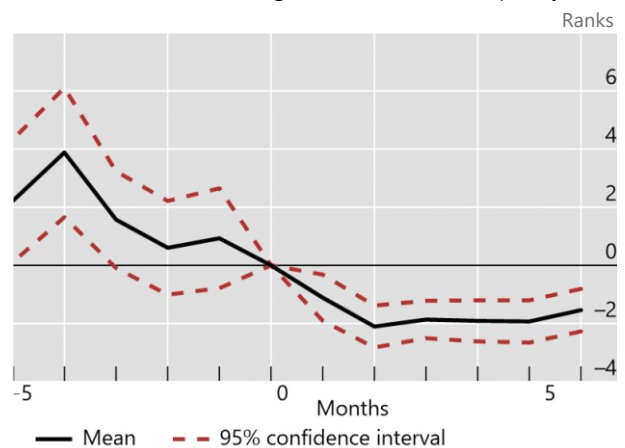
Making benchmark bonds¹

Graph A

Success in establishing benchmarks



Effect of benchmark designation on relative liquidity²



¹ Based on a study of local currency sovereign bonds of Indonesia, Malaysia and Thailand. ² Liquidity, by rank within market segment, measured relative to month 0, defined as the final month before a bond becomes a designated benchmark. The decrease in rank (increase in liquidity) around designation is highly statistically significant. ³ Displays the share of months for which designated benchmarks are the most liquid in their market segment, combining maturities and markets.

Source: Remolona and Yetman (2019).

Policymakers in EMEs have relied on a range of tools to develop benchmark bonds. Table A shows a selection. These include concentrating issuance on a limited number of maturities and issuing these on a large scale, exchanging nominated benchmark securities for non-benchmark ones, and frequent re-openings, ie issuing additional amounts of previously issued bonds. Indonesia, Malaysia and Thailand offer examples in which authorities have taken such measures (Table A).

These steps appear to have been generally successful (Graph A). In 60% of the sample, the designated benchmark is the most liquid bond within its market segment

²³ In the United States, for example, the on-the-run issues at two, five, 10 and 30 years are widely recognised as benchmarks. In Japan, there is a single benchmark that is a recently issued 10-year government bond (Boudoukh and Whitelaw (1991)).

(left-hand panel). This rises to 78% in the case of Malaysia. And around the time of the designation, the relative liquidity of the designated benchmark increases to a quantitatively large and statistically significant degree (right-hand panel).

The analysis indicates that several factors contribute to this success. Based on a probit model, these include (a) choosing as benchmarks bonds those that are already very liquid; (b) recycling bonds as benchmarks by reusing those that have previously been designated benchmarks at longer maturities; and (c) selecting bonds that will be issued frequently during their benchmark designation period. By contrast, neither the stock of past cumulative issuance nor the predictability of the authorities' benchmark choices play an important role.

Benchmark bonds in some EMEs

Table A

Economy	Maturities (years)	Additional steps taken
Argentina	1.5–10	Re-openings of outstanding instruments.
Chile	5, 10, 20, 30 (nominal and indexed)	Additional issuance of benchmark bonds to exchange for other non-benchmark Treasury securities.
Colombia	5, 10, 15 (nominal) 5, 10, 20 (indexed)	
Hong Kong SAR	0–15	
Indonesia	5, 10, 15, 20	Regular re-openings. Recycling benchmarks. Primary dealers required to make markets.
Israel	3, 5, 10, 30 (nominal) 5, 10, 30 (indexed)	
Korea	3, 10 becoming more important	Improving issuance and trade system.
Malaysia	3, 5, 7, 10	Regular re-openings. Recycling benchmarks. Primary dealers required to make markets.
Mexico	3, 10, 30 (at times also 5, 7 and 20)	
Poland	2, 5, 10	Regular issuance in sizes of at least EUR 5 billion.
Russia	Up to 20	
Singapore	2, 5, 10	Regular re-openings.
Thailand	5, 10, 15, 20, 30, 50	Regular re-openings. Recycling benchmarks. Primary dealers required to make markets.

Additional tables

Impact of FMD on instrument choice and vice versa				Table A1
	Little impact	To some extent	To significant extent	NA
Impact of FMD on instrument choice ¹	4	7	5	5
Impact of instrument choice on FMD ²	2	7	5	7

¹ The row shows the number of central banks with answers in the different categories, to the question: To what extent has the development of financial markets influenced the choice of instruments to implement monetary policy? ² The row shows the number of central banks with answers in the different categories, to the question: To what extent has the choice of monetary policy instruments affected the development of the respective markets?

Source: BIS survey.

Motivation for issuing central bank securities ¹				Table A2
	Important	Not important	NA	
Absorption of excess liquidity	14	0	7	
Development of markets	9	5	7	
Other	5			

¹ The table shows the number of central banks with answers in the different categories, to the question: What has been an important motivation for issuing central bank securities?

Source: BIS survey.

Maturity distribution of central bank securities, % of outstanding				Table A3
%	2000	2010	2018	
< 1yr	68.4	81.6	81.6	
1–3yrs	18.4	14.9	15.2	
> 3 yrs	13.2	3.5	3.2	

Note: If a country provided information for at least one maturity bracket, any missing replies in other brackets are counted as zero. Some country-year observations are missing from the sample.

Source: BIS survey.

Changes in interest rate pass-through since 2000 ¹				Table A4
No changes	Weaker	Has become stronger	NA	
1	3	10	7	

¹ The table shows the number of central banks with answers in the different categories, to the question: How has the pass-through from policy rates to lending rates for households and non-financial firms changed in your economy since 2000?

Source: BIS survey.

Role of FMD for changes in interest rate pass-through¹ Table A5

No impact	To some degree	Strongly	NA
2	10	3	6

¹ The table shows the number of central banks with answers in the different categories, to the question: To what extent does the possible change in interest rate pass-through reflect FMD?

Source: BIS survey.

Increased share of long-term domestic government bonds

Maturity distribution, % of outstanding debt Table A6

Maturity bucket	2000	2010	2018	Degree of liquidity in 2018
< 1yr	33%	19%	14%	Low
1–5 yrs	38%	37%	34%	High
5–7 yrs	11%	8%	9%	High
7–10 yrs	11%	15%	18%	Moderate
Longer than 10 yrs	7%	21%	25%	Moderate

Note: Shares for maturity buckets are calculated on the basis of outstanding debt, for each year shown in the table. The degree of liquidity is the mode across responses. Some country-year observations are missing from the sample.

Source: BIS survey.

Role of FMD for changes in key funding rates¹ Table A7

Banks	Household (secured)	Households (unsecured)	Private non-financial corporates
No impact: 3	No impact: 2	No impact: 3	No impact: 2
To some degree: 5	To some degree: 7	To some degree: 7	To some degree: 8
Strongly: 3	Strongly: 3	Strongly: 1	Strongly: 2
NA: 10	NA: 9	NA: 10	NA: 9

¹ The table shows the number of central banks with answers in the different categories, to the questions: Has FMD played an important role in affecting the key funding rate? For which borrowing sector(s) has this been the case?

Source: BIS survey.

Changing importance of communication with target audiences¹

Table A8

Topic	Communication with resident investors (increased/unchanged importance) ²	Communication with non-resident investors (increased/unchanged importance) ²
Policy objectives	12/4	10/5
Policy strategy	13/3	11/4
Policy operations	16/1	12/3
Prudential policy, incl. CFM	13	11/1

¹ The table shows the number of central banks with answers in the different categories, to the question: In the light of FMD, such as the increasing size of certain types of investor, has communication with certain stakeholders become more or less important for achieving monetary policy objectives over the past decade? ² No central bank indicated decreased importance, in any category.

Source: BIS survey.
