

Financial market development, monetary policy and financial stability in Brazil

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Abstract

Financial market development affects financial intermediaries, corporations and households, setting the grounds on how these agents can act in the economy. Brazil's comprehensive reform agenda in recent years has promoted the deepening of credit markets, with households and corporations gaining increased access to credit domestically. These developments have a wide range of implications for monetary policy transmission and financial stability.

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Introduction

Financial market development affects financial intermediaries, corporations and households, setting the grounds on how these players can act in the economy. To the extent that the transmission of monetary policy hinges on credit access, financial market development becomes a first-order concern for most central bankers.

Brazil has come a long way with regard to financial market development in recent years. Changes to legislation, as well as specific government policies, have promoted the deepening of local credit markets. Households and corporations are gaining increased access to domestic credit markets, a development with a wide range of implications for monetary policy transmission and financial stability. These developments, combined with the global liquidity trends in place since the Great Financial Crisis, also affect the foreign exchange rate markets.

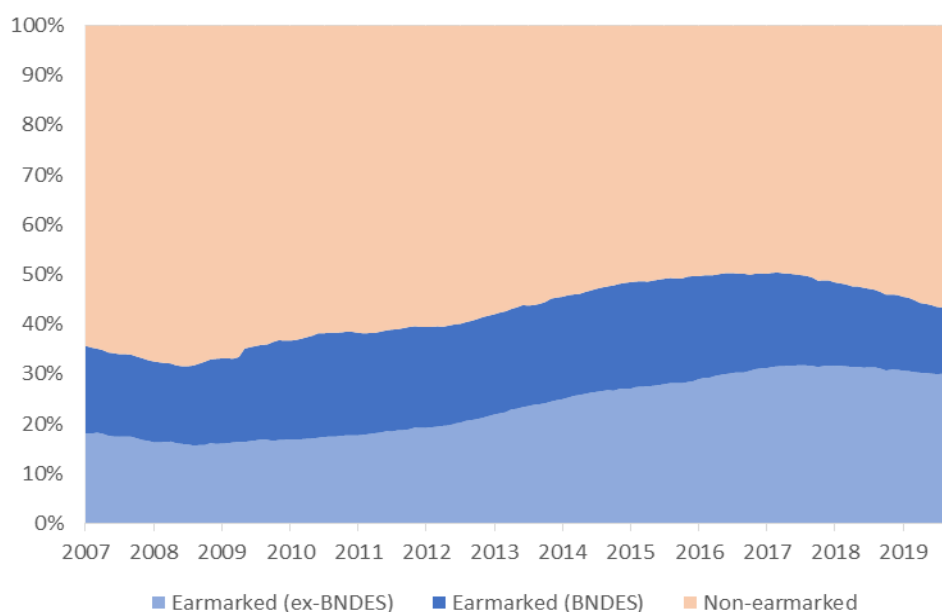
This note discusses financial market development in Brazil, focusing on local credit and FX markets, and the impact on monetary policy. It concludes with a discussion of the Central Bank of Brazil's programme to foster financial inclusion and development.

Domestic credit markets

Development banks are important players in credit markets in many emerging market economies (EMEs). This has also been the case for Brazil. During the past decade, earmarked credit in Brazil corresponded to roughly 40% of total credit in the country, with nearly half of it provided by the national development bank, BNDES. Graph 1 shows that the overall contribution of earmarked credit increased following the Great Financial Crisis, reaching about 50% of overall credit in Brazil. But credit through this channel is frequently subsidised. Therefore, this large share of subsidised earmarked credit in Brazil has effectively isolated a relevant segment of the credit market from monetary policy.³

Since 2016, Brazil has taken important steps to reduce the scope of earmarked credit in the economy. One of the main initiatives in that direction was the alignment of long-term lending rates offered by BNDES with those offered by the private sector.

³ Ma and Lin (2016) and Aysun et al (2013) find that large credit markets make the economy less sensitive to monetary shocks – since corporations are not constrained by low amounts of credit to begin with. This literature arguably does not fully account for market incompleteness and earmarked credit. Indeed, a very small credit market could potentially leave a large fraction of the economy unaffected by monetary policy through the credit channel, while earmarked credit adds slack to credit constraints for the targeted sectors.



Source: BCB.

Historically, BNDES offered subsidised loan rates that were sometimes out of line with those offered by the private sector. The large-scale provision of subsidised rates hampered the development and deepening of private sector credit markets, in addition to imposing significant costs on the public sector accounts. Moreover, recent evidence suggests that these subsidised loans were frequently directed to households and corporations that faced easier credit constraints than their peers, instead of being directed to those who would have had greater difficulty in accessing credit through more standard and market-based channels. Bonomo et al (2015), for example, show that between 2012 and 2014, larger and less risky corporations have benefited the most from such credit arrangements.

Legislative changes have, however, established a new framework for credit provision by the BNDES. Since 2018, all new loans feature rates referenced by public sector bond rates. This change has allowed BNDES to focus on activities where market incompleteness is more severe, such as long-term infrastructure projects. Most importantly, the alignment of public and private sector rates has significantly reduced the fiscal burden of the previous loan arrangements.

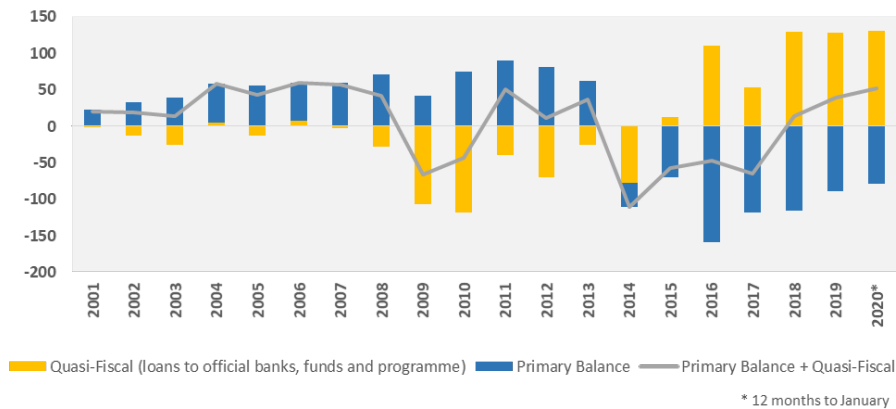
This shift in the role of the public sector in credit markets is only one of many measures taken to improve the public accounts and enhance credit markets. Other fiscal measures included a cap on government spending, a divestment programme for the sale of minority shareholdings held by state-owned enterprises, real estate assets and privatisation and, more recently, the approval of a comprehensive pension reform. Recent legislative changes have provided for the establishment of a credit registry bureau and paved the way for longer-term investments in infrastructure.

As a result of these measures, the public sector has substantially reduced its role in Brazil's credit markets, improving the prospects for the fiscal accounts. Graph 2 depicts the primary and quasi-fiscal balances. Quasi-fiscal balances correspond to the results of loans to official banks, funds and state programmes. The graph shows that,

since 2016, the quasi-fiscal results have turned positive, reflecting a significant change in the role of the public sector in credit markets. It also shows that during that period, fiscal deficits have been on the decline.

Primary and quasi-fiscal balances (R\$ bn)

Graph 2

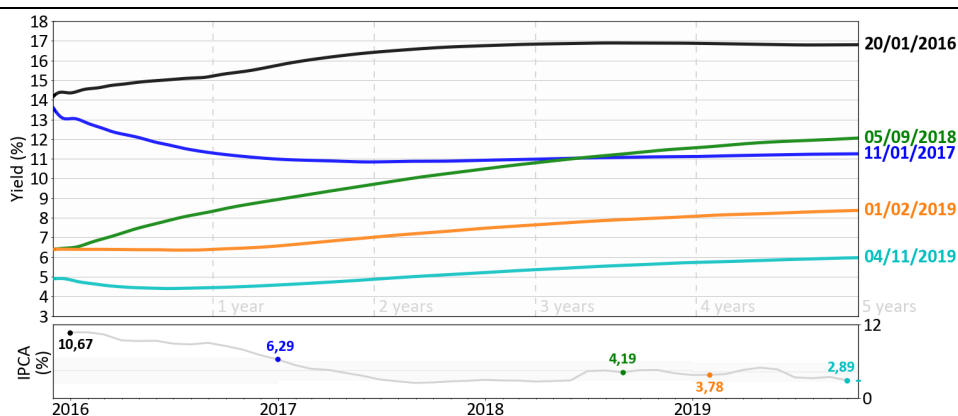


Source: BCB.

These developments had a significant impact on credit markets in Brazil. The ongoing improvements to the government fiscal stance were accompanied by a significant decline in risk premia, particularly after the approval of the spending cap and the pension reform. Consequently, there has been a significant decline in long-term interest rates, with a downward shift of the yield curve. Graph 3 highlights these movements on the yield curve by showing that only recently, and after the change in the country's fiscal stance, the decline in policy rates (in the short end of the yield curve) was also reflected along longer maturities. The graph additionally shows how Brazil's main inflation gauge has fallen to within the target range during this period.

Brazilian yield curve 2016–19

Graph 3



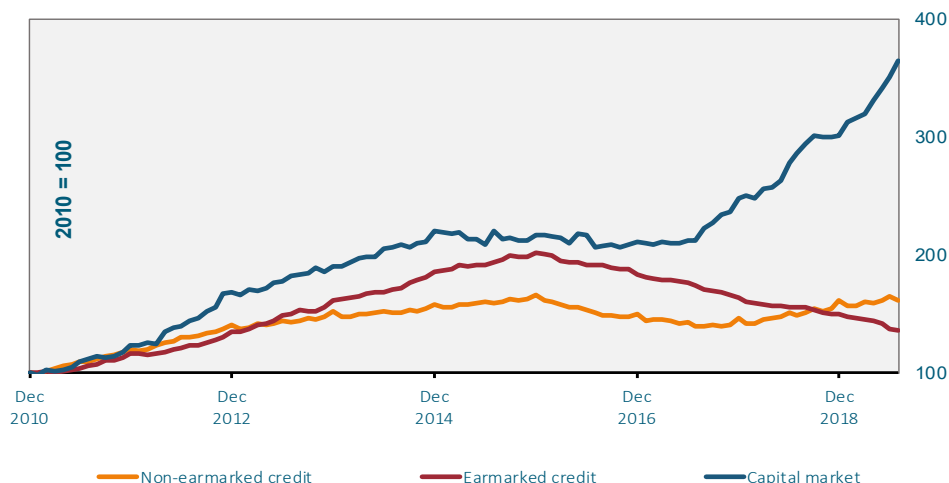
Source: BCB.

The public sector's reduced role in credit markets has opened up scope for the private sector. Graph 4 shows that, with the decline in earmarked credit, combined

with the decline in long-term rates, private securities markets have doubled in volume since 2016.

Credit and capital markets

Graph 4



Source: BCB.

Foreign exchange market

The developments in credit markets have had an impact on FX markets. The onshore deliverable FX market in Brazil comprises primary and secondary markets. The primary deliverable market consists of over-the-counter trading in which participants buy/sell foreign currency from/to agents authorised by the central bank. This primary market supports export, import, financial and remittances transactions, among other business. The secondary (or interbank) market consists of deliverable FX transactions exclusively between institutions authorised by the central bank, such as banks and FX brokers. Alongside the primary and the interbank deliverable markets, a significant volume of FX is traded in the derivatives market, where all contracts are non-deliverable.

In terms of turnover, the Brazilian FX market is well placed relative to other EMEs such as South Africa, India, Mexico, and Turkey.⁴ The deliverable FX market in Brazil has an average daily turnover of USD 7 billion, while the futures market is much larger, with an average turnover of USD 16 billion (see Graph 5). Taking into account both deliverable and non-deliverable markets, the Brazilian FX market is commonly considered deeper than those of its peers by international investors. The relatively

⁴ See BIS (2016a) for a survey of foreign exchange spot markets and foreign exchange and interest rate OTC derivatives markets. Considering execution by country, the survey reports that while daily turnover in the Brazilian spot market in 2016 was USD 7.4 billion, turnover in South Africa, India, Mexico, and Turkey was, respectively, USD 3.1 billion, USD 15 billion, USD 6.4 billion and USD 6.7 billion.

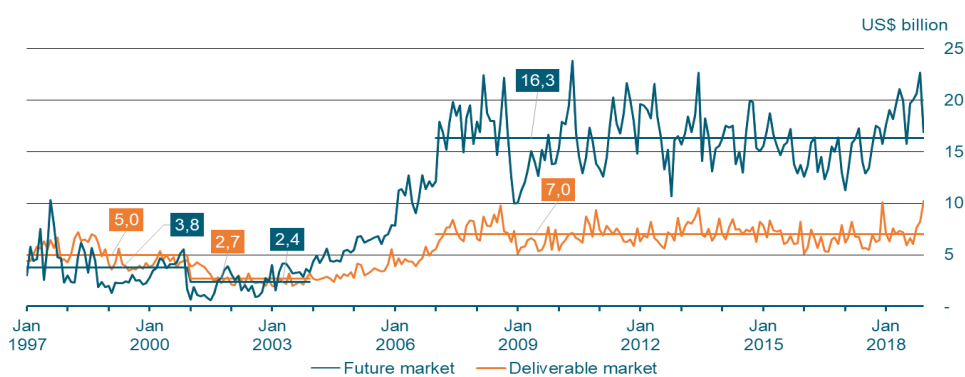
smaller size of the spot market partially reflects historical regulatory constraints and the relatively late integration of the Brazilian economy into global markets.⁵

Over the last two decades, Brazil has benefited from global developments and the country has become an important recipient of global investment flows, further contributing to the development of the FX futures market.

As the Brazilian FX market becomes more integrated, however, spillovers from other markets can affect capital flows and the currency. In times of stress, EMEs may suffer from contagion and investors may turn to more liquid markets to withdraw needed resources. When these movements become disruptive, well designed intervention strategies can smooth the effects on the exchange rate.⁶

FX turnover – daily average

Graph 5

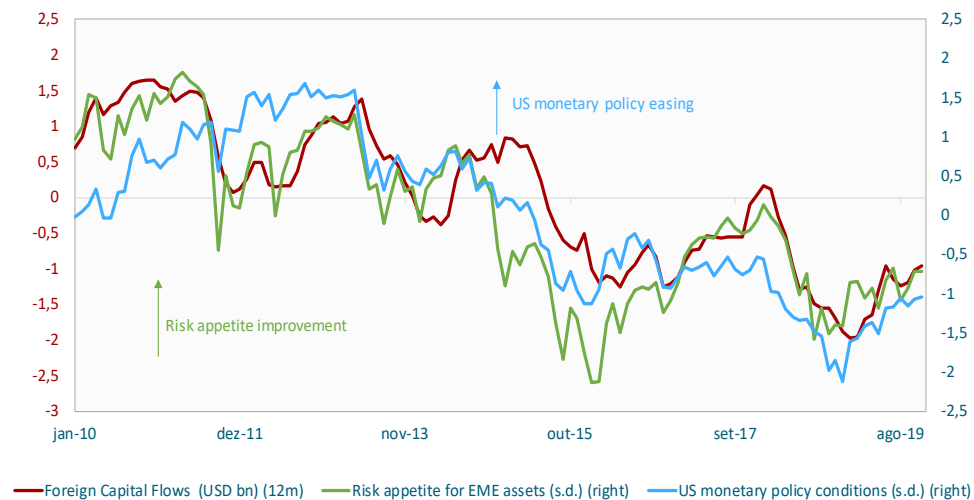


Sources: BCB; Bloomberg.

Indicators of global liquidity conditions and risk aversion towards EME assets are broadly consistent with this picture. Graph 6 shows such indicators based on the first principal component of a comprehensive list of asset prices. It shows that, apart from idiosyncratic pull factors, there is a clear relationship between global liquidity and risk aversion and capital flows to emerging markets. Details are provided in Box A.

⁵ Brazil has historically faced shortages of international reserves and problems with its balance of payments. As a result, the spot market has always been tightly regulated, although the country no longer faces problems with its balance of payments. For instance, regulation traditionally constrained access to the spot market for purposes such as speculation and hedging, and only banks authorised by the BCB can operate in this segment.

⁶ Exchange rate risk can be hard to cope with even in global financial centres, to say nothing of EMEs. Gabaix and Maggiori (2015) argue that global financiers require a premium in terms of expected currency appreciation to enter carry trades, the more so when they face tighter financial constraints or higher exchange rate volatility. The authors argue that strong capital inflows due to a high interest rate differential could drive up the exchange rate so far that the economy could slow as a result of a weaker tradable sector. This seems at odds with the recent experience of major EMEs that experience high growth during appreciation episodes. The complete picture requires domestic credit constraints. Large depreciations increase foreign currency liabilities and reduce the collateral value of domestic assets, leading to a reduction of external credit lines and market access. The opposite happens during large appreciations, loosening credit constraints. The effects of loosening or tightening constraints on domestic demand could be larger than the countervailing effects of the exchange rate on external demand. This is the case in a relevant class of models, such as Jeanne and Korinek (2010), where the reduction in domestic demand falls more heavily on non-tradables. The recent experience in EMEs, including Brazil, seems consistent with this mechanism.



Sources: Authors' calculation based on Bloomberg data.

In Brazil, foreign exchange market interventions have smoothed exchange rate movements when markets have been disrupted. These interventions have allowed the country to ameliorate the effects of cross-border balance sheet and risk aversion shocks. Barroso (2019) describes the foreign exchange intervention strategies adopted in Brazil in recent decades. In periods of abundant global liquidity, the central bank has accumulated international reserves or reduced short positions in the derivatives markets.⁷ Historically, in periods of short and volatile global liquidity, the central bank has intervened in FX markets using an array of instruments with transparent operational guidelines. Spot interventions were favoured when onshore dollar rates have come under pressure; otherwise derivatives have been an important alternative. Indeed, the greater depth of the FX non-deliverable market and the search for hedges against FX fluctuations in times of stress have guided most of the central bank's interventions in FX markets following the Great Financial Crisis. Interventions using non-deliverable currency swaps have proved to be efficient in coping with short-term market dysfunctions. Considerable discretion has been used in the timing and scope of intervention to avoid excessive risk-taking by private agents.

In the last few quarters of 2019, Brazil experienced a new phenomenon. The decline in long-term yields (see Graph 3) associated with the quasi-fiscal adjustment (Graph 2) galvanised the local capital markets, reducing demand for external funding in US dollars. This environment led some domestic-based corporations to consider tapping local markets by prepaying their foreign liabilities and reissuing debt domestically in local currency. The result was a decline in US dollar liquidity in the local market, which put pressure on onshore dollar rates despite ample global liquidity.⁸

⁷ In a swap contract, the central bank pays the onshore dollar interest plus any dollar appreciation and receives the domestic interbank rate. Operationally, to reduce its swap position, the central bank can issue reverse swaps, taking the opposite side of the contract.

⁸ Note that, during this period, the Fed and other major central banks shifted their monetary policy to an easing stance.

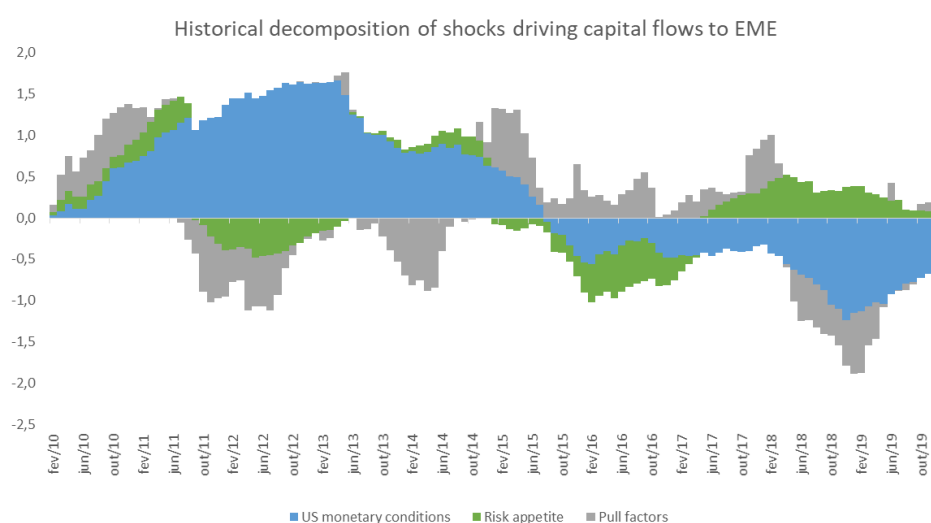
Drivers of capital flows to EMEs

EMEs are commonly subject to a high degree of volatility in portfolio capital flows. It is important to understand the drivers of such volatility. As in Central Bank of Brazil (2019), we follow an identification strategy based on the contemporaneous relationship between US monetary policy and indicators of risk appetite and capital flows for EMEs. The main assumption is that US monetary policy does not react contemporaneously to capital flows or risk appetite towards EMEs, a reasonable assumption given the preponderance of domestic factors in the conduct of US monetary policy. We also assume that risk appetite does not respond contemporaneously to our indicator of capital flows, a reasonable assumption given that we use fast-moving asset prices to build the risk indicator and a moving average of capital flows to capture cross-border quantity activity.

These assumptions are incorporated in a structural vector autoregression. It is often the case that a large vector autoregression produces inferences similar to those of factor-augmented autoregressions (Bańbura et al (2015)). For simplicity, we focus only on a couple of factors. Our monetary policy factor is constructed as the first principal component of US daily data on interest rates, stock market returns, inflation and bilateral exchange rates against those of other advanced economies. This has the virtue of capturing monetary easing during quantitative easing and forward guidance episodes, as well as capturing market reactions to expected monetary policy movements. For risk appetite, we extract the first principal component from implicit volatility and returns for commodity prices, along with exchange rate and stock markets returns for Brazil, India, Indonesia, Mexico, Russia, South Africa and Turkey. Finally, the monthly portfolio flow data is the sum of foreign portfolio flows to the same set of countries accumulated over a 12-month window. Although we focus on monthly data, the exercise can be reproduced at different frequencies. We restrict the sample from January 2010 to November 2019. The variables are shown in Graph 6 of the main text.

The main result is that US monetary policy is the most important driving force when explaining risk appetite and capital flows to EMEs – the strong correlation between risk appetite and flows is explained largely by the third factor. For capital flows, a forecast error variance decomposition shows that, in the long run, US monetary policy shocks account for about 80% of the variance. For horizons shorter than 12 months, US monetary policy accounts for more than 50% of the variance. Focusing on specific events, Graph A1 shows that US policy was a major driver of capital inflows between 2010 and 2014, after which risk appetite and monetary policy acted as a drag on portfolio flows, in spite of important pull factors in EMEs. The 2018 tightening and ensuing 2019 easing of US monetary policy were also a big driver of flows in that period, along with important negative pull factors affecting EMEs in 2018.

Historical decomposition of shocks driving capital flows to EMEs Graph A1



Source: Authors' calculation

These developments led the central bank to design a new intervention strategy. This consisted in selling at the spot exchange rate and the same amount of reverse swap contracts (equivalent to selling US dollars via derivatives) simultaneously. This operation met the demand for hard currency liquidity while keeping the net foreign exchange position – roughly, international reserves holdings net of derivatives positions – constant. The central bank was careful to issue a detailed statement and to disclose the internal documents that informed the Board's deliberation. Between 21 August and 20 December, these "matched" interventions totalled USD 33.4 billion, with the net international reserve position staying almost unchanged at about USD 327 billion.

The central bank fosters financial development

The Central Bank of Brazil's agenda to foster the development of credit markets consists of four main pillars: inclusion, competitiveness, transparency and financial education.

Not all Brazilians have access to capital markets and those who do face elevated credit costs. Aiming at increasing access to credit to households and firms, the Central Bank of Brazil (BCB) has fostered competition by promoting the development of credit coops, microcredit, and credit fintechs. Some policies have already been implemented. Coops now have access to more stable long-term funding methods and have been authorised to operate in rural real estate markets. Microcredit has been stimulated by broadening the qualifying criteria, increasing the scope of approved transactions (including online relationship management and credit-scoring services together with more products for clients), and streamlining the legal framework to reduce regulatory compliance costs.

The BCB's agenda also includes simplifying and modernising the legal framework for the foreign exchange market. The aim is to align the Brazilian legislation with international standards and the current economic environment, to increase the Brazilian real's degree of international use. Similarly, the BCB has been pushing forward an initiative to streamline the country's capital markets and reduce costs for international investors, by promoting the development of private equity and securitisation. The agenda also includes efforts to increase market efficiency and competition, which includes the development of an instant payment system and an open banking initiative. The instant payment framework is designed to be a 24/7 payment system using QR codes and cell phones, with a centralised settlement infrastructure operated and managed by the BCB. The new system is expected to be operational from November 2019. The open banking initiative will promote competition by reducing the information advantage of incumbents and fostering innovation and new entrants. The agenda also includes developing a new emergency liquidity assistance facility that will help optimise the level of liquidity in the system, promoting financial market deepening and development.

Finally, the BCB has increased the transparency of its own decision-making process and it is promoting financial education. Besides virtual interactions with the public online, the BCB is working closely with schools and other institutions to promote financial knowledge, as well as developing partnerships to inform and promote better financial choices by market participants. Financial education

combined with other microeconomic efforts is designed to increase market participation, reduce credit costs and deepen the Brazilian credit markets.

Implications for monetary policy

The government's reform agenda has important implications for credit markets and for monetary policy. The reforms and other changes to the economic environment may affect the structural rate of interest. The pension reform, for example, could affect the equilibrium rate of interest in Brazil through various channels. By adapting retirement rules to the country's demographic structure and dynamics, it should slow the pace of government spending growth, increasing public savings. In addition, it will generate incentives for the population to increase its savings rate to sustain a given pattern of consumption after retirement. Through these channels, the reform will help to reduce the risk-free component of the structural interest rate of the Brazilian economy. The pension reform also affects the risk premium component of the structural rate and will affect labour supply investment decisions. The latter channels will put upward pressure on the structural interest rate.

In addition, and no less importantly, the ongoing regulatory reforms and the Central Bank of Brazil's agenda will encourage the rise of new players and new business models in credit markets, which will also have a significant effect on monetary policy transmission.

Conclusion

Financial market development ultimately allows the economy to better cope with stressed and changing conditions, providing better anchoring for monetary policy and financial stability. Recent and ongoing economic reforms that enhance fiscal sustainability tend to deepen Brazil's financial markets.

Moreover, the central bank's agenda for financial inclusion, education, transparency and efficiency should increase participation of households, corporations and financial institutions. In such an environment, the transmission channels of monetary policy will be enhanced.

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