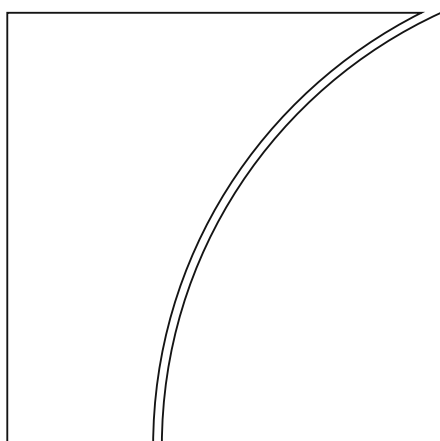




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Keeping the momentum:
how finance can continue to
support growth in EMEs

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Keeping the momentum: how finance can continue to support growth in EMEs

Ryan Banerjee, Aaron Mehrotra and Fabrizio Zampolli¹

Abstract

This paper examines how finance can support economic growth in emerging market economies (EMEs). Historically, finance has contributed to rising income levels, yet its future impact is less certain. Evidence indicates that as credit and income levels increase, the positive impact of finance on growth tends to weaken. Additionally, unchecked credit expansion can lead to financial busts, resulting in prolonged periods of sub-par economic performance. At the same time, advances in digital technologies offer new opportunities for enhancing financial intermediation. Policy decisions will be key in three main areas: implementing structural reforms to improve market-based finance access; harnessing digital technologies to enhance financial efficiency and inclusion; and maintaining macro-financial stability to ensure sustainable growth.

JEL classification: E44, G00, O40.

Keywords: emerging markets, financial inclusion, capital markets, economic growth, productivity, resource allocation, financial innovation, digital technologies.

Introduction

Financial development has played a fundamental role in boosting income levels in emerging market economies (EMEs) and will continue to do so in the future. But the path forward might not be as smooth as in the recent past. Research indicates that the effect of finance on growth tends to weaken as credit and income levels rise and may even turn negative. Moreover, credit can flow to unproductive uses and grow at an unsustainable pace even in countries where it is relatively low, as proven by past financial crises that occurred at much lower debt levels than today. On the positive side, new digital technologies, including artificial intelligence, promise to improve the efficiency of financial services and broaden access.

This suggests that the impact of finance on future economic growth will depend on at least three factors, with policy playing a crucial role in each.

First, many EMEs have scope for expanding and widening access to market-based finance through structural reforms that enhance the protection of creditors and

¹ The views expressed in this paper are those of the authors and not necessarily those of the BIS. We thank Claudio Borio, Jon Frost, Leonardo Gambacorta, Gaston Gelos, Enisse Kharroubi, Benoît Mojon, Hyun Song Shin, Alexandre Tombini, Christian Upper and Tao Zhang for useful comments. We are also grateful to Pongpitch Amatyakul and Enisse Kharroubi for providing the firm-level productivity data used in this paper, and Berenice Martinez and Sjur Nilsen for excellent research assistance.

shareholders, competition and financial literacy. Equity finance, in particular, may help channel funds towards the most innovative firms and new sources of growth.

Second, new digital technologies can improve how well various forms of finance serve the real economy, including by broadening financial inclusion and reducing informality. To support financial innovation, many EMEs are already investing in digital infrastructure and adapting regulation to foster competition and protect consumers.

Last but not least, preserving macro-financial stability remains crucial regardless of a country's degree of financial development. Establishing whether a credit expansion constitutes financial deepening or an unsustainable boom is hard in real time. Yet, the challenge is more manageable if EMEs take steps to strengthen existing macro-financial stability frameworks (MFSFs).

This note begins by describing the evolution of EMEs' financial systems over the past two decades. It then asks whether finance can still support growth, relying on evidence from aggregate-, sectoral- and firm-level data. Finally, it delves into the factors that will shape their future development.

Changes in EME finance in recent decades

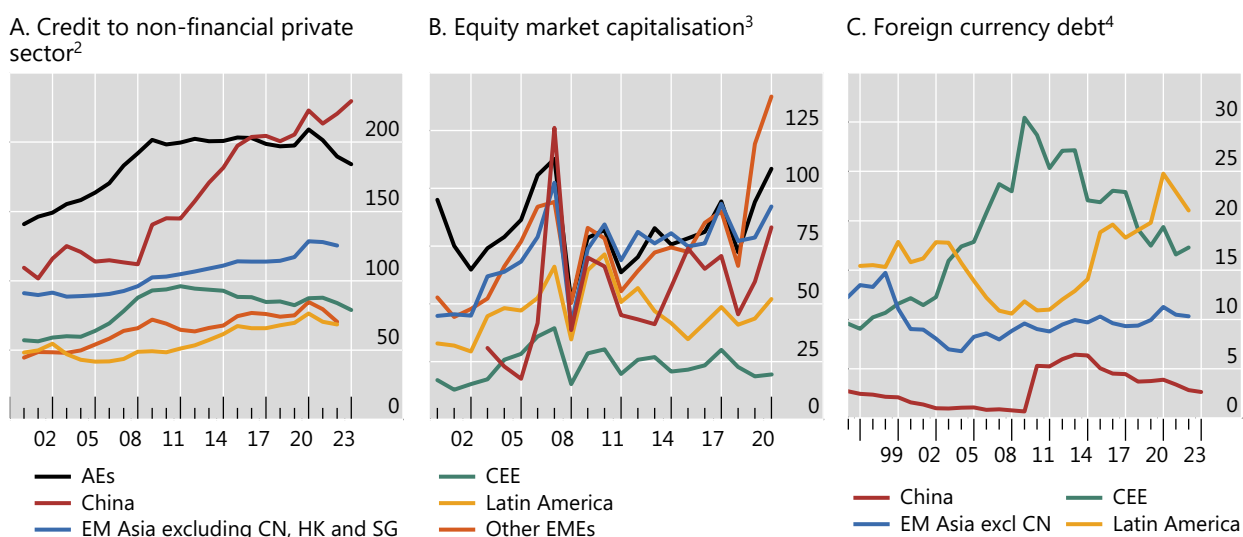
The early 2000s ushered in a period of remarkable stability and growth for most EMEs. In line with global trends, inflation rates and real interest rates fell to historical lows, at least until the recent post-Covid-19 inflation flare-up. In addition, most EMEs did not experience any episodes of major financial stress despite major global shocks such as the Great Financial Crisis (GFC) and the Covid-19 pandemic (Annex A, Graph A.1). EMEs have benefited not only from more favourable global conditions but also from greater central bank autonomy and the strengthening of their banking sectors after the crises of the 1980s and 1990s. Several EMEs also benefited from the further opening-up of their economies to international trade and finance.

The newly acquired stability and lower interest rates provided fertile ground for the expansion of EME financial systems. Private non-financial sector credit (PNFC) in relation to gross domestic product (GDP) has steadily trended up for most of the period and has been especially fast in emerging Asia (Graph 1.A). This expansion persisted through the GFC, except in Central and Eastern Europe (CEE), where a downturn followed. Despite the increase, PNFC tends to be lower in EMEs, with the exception of China, than in advanced economies (AEs). Equity finance has also expanded, but this expansion largely took place before the GFC (Graph 1.B). Since then, it has been volatile and has not followed the upward trend of private credit. That said, the measurement is subject to some subtlety, including due to the tendency of larger EME firms to list on AE stock markets.

EME financial systems have undergone major changes¹

As a percentage of GDP

Graph 1



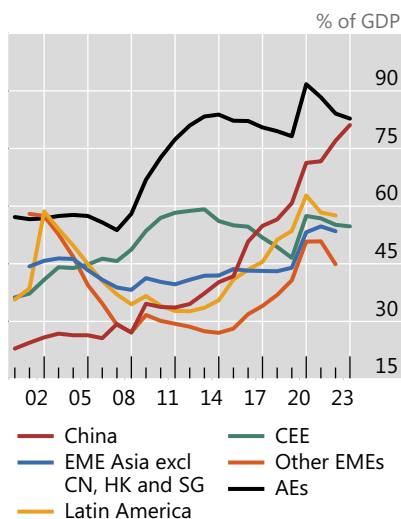
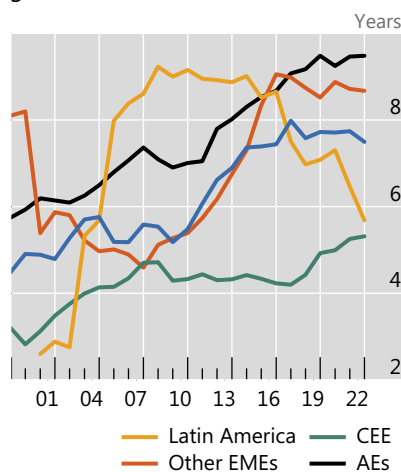
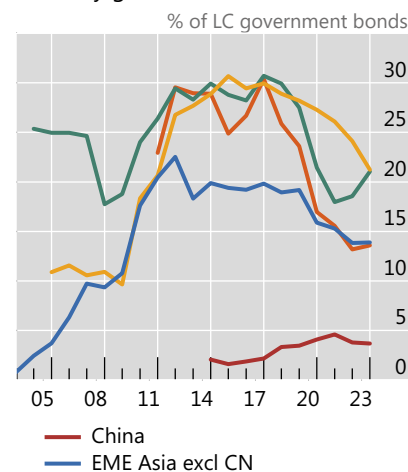
EM Asia excluding CN, HK and SG = ID, IN, KR, MY, PH, TH and VN; Latin America = AR, BR, CL, CO, MX and PE; CEE = CZ, HU and PL; Other EMEs = AE, DZ, IL, SA, TR and ZA; AEs = AT, AU, BE, CA, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, JP, LU, NL, NO, NZ, PT, SE and US.

¹ Simple average across countries in the region. For 2023, data with latest available quarter. ² For AE, DZ, PE, PH and VN it corresponds to total private debt (loans and debt securities). ³ For GR data starts in 2001, HU 2002, CO 2005, AE 2007, VN 2008 and SA 2009. Data ending in 2003 for SE; 2004 for DK and FI; 2014 for GB and IT; 2017 for NL; 2018 for BE, DZ, FR, IE and PT; and 2019 for AR and NO. For DZ value from 2018 repeated in 2019-20. ⁴ Cross-border and local bank loans extended by LBS-reporting banks to EME non-bank borrowers and international debt securities issued by non-banks residing in each region. Non-banks comprise non-bank financial entities, non-financial corporations, governments, households and international organisations. Data are not available for AR, HK, MY, VN and SG.

Sources: Mbaye et al (2018); World Bank; national data; BIS consolidating banking statistics, locational banking statistics by residence and international debt securities statistics.

Beyond becoming larger, financial systems have evolved in other dimensions. Broader measures of financial development indicate improvements in households' and firms' access to financial services, as well as in firms' access to bank credit and market-based finance (Annex A, Graph A.2). Financial institutions have also become more efficient, as measured by indicators such as the ratio of overhead costs to total assets.

The role of non-bank financial institutions (NBFIs) in financial systems has grown. Some EMEs (including Brazil, Colombia, Korea and South Africa) have seen a notable increase in the share of NBFIs in total financial system assets (Annex A, Graph A.3). This includes institutional investors such as pension funds and insurers (Annex A, Graph A.4). That said, for most EMEs considered here, banks have retained a predominant share in total financial system assets (eg Czechia, Hong Kong SAR, Hungary, Indonesia, Mexico, Poland, Singapore and Turkey).

A. Credit to general government¹B. Average remaining maturity of government securities²C. Foreign ownership of EME local currency government bonds³

¹ Simple average across seven economies in EME Asia excluding CH, HK and SG; six in Latin America; three in CEE; six other EMEs; and 22 AEs. For Peru, central government debt. For 2023, data corresponds to latest available quarter. ² Simple average maturity of central government debt securities issued across countries in the region upon data availability. Eight economies in EM Asia excluding China, six in Latin America, three in CEE, three other EMEs and 12 AEs. ³ Simple average across countries in the regions, subject to data availability. Figures for five economies in EM Asia excluding China, four in Latin America, three in CEE and two other EMEs.

Sources: Mbaye et al (2018); IIF; IMF; national data.

Expanding finance has also coincided with a significant shift in how EMEs access international finance. Foreign direct investment inflows into EMEs have slowed since the GFC, while portfolio flows have gained ground. More flows have originated from non-bank foreign investors, especially post-GFC. Regarding EME local currency government bonds, mutual funds account for the largest share of US investors' bond holdings post-GFC, while US pension funds and insurance companies have much smaller shares (Bertaut et al (2023)). After an initial decline prior to the GFC, foreign currency debt has risen in Latin America (Graph 1.C), largely driven by corporate debt (Annex A, Graph A.5).

Credit to the government is substantially larger today than in the early 2000s (Graph 2.A). Unlike for PNFC, most of the growth occurred after the GFC. Prior to that, several regions experienced significant reductions in public debt ratios. China saw the largest post-GFC increase in government debt, followed by Latin America and other EMEs. For Latin American EMEs and other commodity-exporting countries, the surge coincided with the end of the expansion phase of the commodity supercycle; for emerging Asia (excluding China), the surge coincided with the pandemic.

The structure of government debt has also changed. Governments were able to replace foreign with local currency debt. Consistent with greater inflation stability, and helped by low short- and long-term rates globally, average maturities of sovereign debt have generally increased (Graph 2.B). A notable exception is Latin America where maturities have declined since the mid-2010s. Foreign participation in local currency government bond markets rose until 2015 but has declined since (Graph 2.C).

These broad trends mask significant differences across countries. In particular, emerging Asia tends to have larger financial systems (relative to GDP) than Latin America and central and eastern Europe, more akin to the typical advanced economy (Annex A, Graph A.6).

The impact of finance on growth: always good?

There is no doubt that financial development contributes to long-term economic growth. As highlighted by a voluminous theoretical literature, the financial system improves the allocation of resources by screening projects, exerting governance on the use of allocated resources, facilitating the management of risk, mobilising savings and easing the exchange of goods and services (see Levine (2021) for a definition and review).

Measuring how well these functions are performed is not straightforward. The empirical literature has typically used the size of the financial system (eg credit-to-GDP ratio and stock market capitalisation), occasionally complementing it with variables capturing access, efficiency and liquidity (eg Sahay et al (2015)). Even though these are imperfect proxies, the conclusion from multiple sources of data and different methodologies is that finance has a significant causal impact on growth (see Popov (2018) for a review).

A still open question, however, is how the performance of financial systems changes over time and why. Indeed, some studies have recently found that the contribution of finance tends to diminish as the financial system expands and income levels rise (eg Demirgüç-Kunt et al (2013)).

There might be several reasons. Some are structural in nature. For instance, the type of informational frictions faced by economic agents may change as the economy develops. In particular, bank finance may be less suited for economies that need to finance innovation (see below). Furthermore, additional finance may not necessarily flow to the most productive uses or firms. This may reflect changing consumption preferences as income levels rise. But it may also reflect distortions caused by credit policies, fiscal policy and weak institutions.

There might also be non-structural reasons closely related to financial cycles.² Financial booms tend to be associated with excessive optimism and lead to overinvestment as well as the weakening of incentives for rigorous screening and monitoring of investment projects. Additionally, debt burdens can eventually reduce investment and consumption as the initial credit impulse fades. The consequence of this misallocation of resources could be a long-lasting negative impact on growth, especially if the financial boom ends in a deep and prolonged recession or, worse, a full-blown financial crisis.³

² Financial cycles tend to be much longer than ordinary business cycles (eg Drehmann et al (2012)), making it hard to assess whether an ongoing financial expansion and associated growth are sustainable.

³ Financial crises can have a long-lasting impact on growth through scarring effects, unlike more mild recessions (see Aikman et al (2022)).

Has the marginal contribution of finance diminished? Is finance, in particular credit, approaching the point where it detracts from growth, at least temporarily?⁴ These questions have gained prominence recently due to the slowdown of growth in several EMEs. While not the main cause, the factors highlighted above may have contributed to it. The rest of the section examines the latest evidence.

The growth impact of private credit follows an inverted U-shaped curve

Aggregate data point to an inverted U-relationship between private non-financial credit and average GDP per capita growth (Graph 3.A).⁵ This finding is robust to controlling for other factors, including catching-up effects, trade openness, inflation, government size and the incidence of financial crises (Annex B).⁶ At low levels, more credit is associated with higher growth. But, as credit increases, the contribution tends to decline, and beyond a certain point, it turns negative, detracting from growth.

Currently, most EMEs are still in the region where further deepening of private credit would help boost growth. The estimates suggest that if Latin America reached the credit depth of emerging Asia, growth could be around 0.5 percentage points higher, all else equal. By contrast, emerging Asia appears to be at the estimated turning point, where further financial deepening through credit may start to be a drag on growth. That said, even in countries where further financial deepening is a positive for growth, unsustainable credit booms could still undermine resilience and growth.

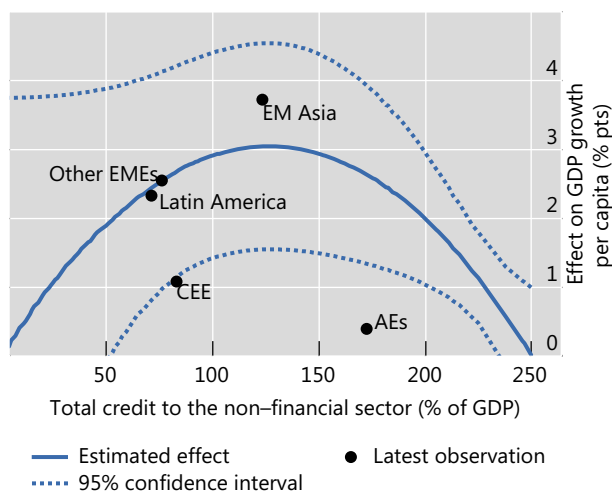
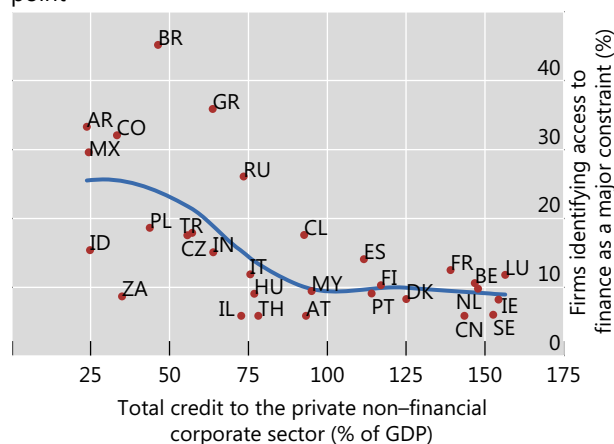
The existence of an inflection point is also corroborated by cross-country survey evidence. The share of firms reporting that access to finance is a major constraint declines as private non-financial credit increases (Graph 3.B). Yet the relationship flattens as credit approaches 100% of GDP. It seems that additional finance tends to go to firms that are already flush with credit rather than to the final 10% of firms that are credit constrained. The survey evidence also suggests more scope for positive credit deepening in several EMEs, including in Latin America, but less scope in emerging Asia.

The next subsections delve deeper into some of the mechanisms (and respective evidence) behind the estimated inflection points shown in Graph 3.

⁴ Between 2016 and 2023, average annual GDP per capita growth of EMEs has exceeded that in AEs by only 1 percentage point, a 50% reduction relative to the 2000–15 average. For several EMEs, growth convergence has stalled (Annex A, Graph A.7).

⁵ See also Cecchetti and Kharroubi (2012) and Gambacorta et al (2014). Consistent with this, Cecchetti et al (2011) find evidence of turning points for private non-financial corporate debt, yet not for household debt. However, the existence of non-linearities and potential explanations have been challenged in the literature (see Popov (2018) for a review).

⁶ While crises have a large negative impact on long-term growth, accounting for crisis occurrence does not remove the downward-sloping section from the relationship between credit and growth (Annex B).

A. Inverted U-shape between credit and growth¹B. More credit eases credit constraints only up to a point²

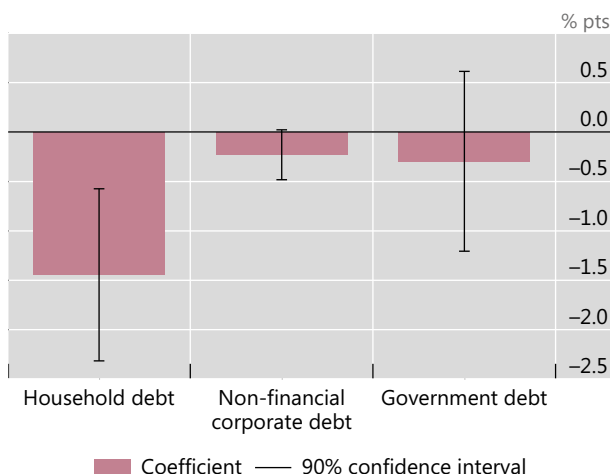
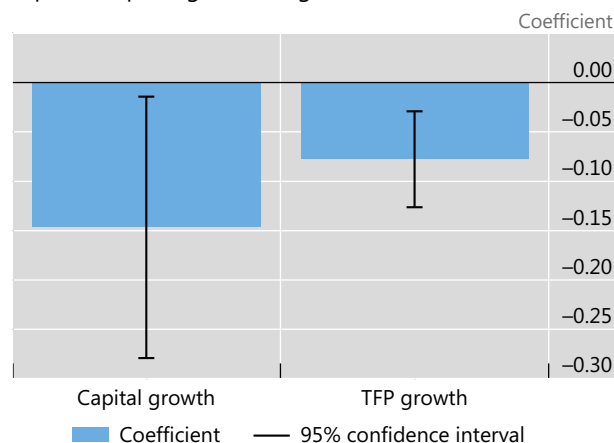
¹ Blue line shows the estimated fitted relationship between total credit to the non-financial sector and GDP per capita growth based on a panel regression, regressing non-overlapping five-year averages GDP growth per capita on the five-year averages of the ratio of credit to the private non-financial sector to GDP and its square, the ratio of equity market capitalisation to GDP and its square, trade openness (sum of imports and exports to GDP), government consumption to GDP and GDP deflator inflation. The lagged level of real GDP per capita is also included. See Annex B for details. Points show simple averages by region of 2019 credit to GDP on the x-axis and fitted values for latest available data on the y-axis. ² Points show 2009–21 averages. Fitted line = locally estimated scatterplot smoothing regression.

Sources: IMF; Penn World Tables; World Bank; BIS.

Higher debt service ratios predict slower future growth

The burden of servicing existing debt can have a persistent negative effect on aggregate demand, investment, productivity and ultimately growth. As credit expands, it brings forward consumption and investment. Yet, once the flow of new credit peters out, its positive effects can be eventually outweighed by the negative impact of interest payments and principal amortisation.⁷ Additionally, higher debt service payments may lead to rising defaults and more cautious behaviour by non-defaulting agents. In extreme cases, firms may cease to invest entirely, as they expect any additional returns to cover only the extra debt service payments (debt overhang). Reduced investment (including on research and development and new technology) might, in turn, lower production efficiency.

⁷ In principle, the extra interest income earned by lenders or savers could lead to offsetting effects on demand. However, the marginal propensity to consume of creditors is generally lower than that of debtors. Furthermore, interest payments on external debt leak abroad.

A. Higher household debt predicts lower GDP growth in the medium run¹B. Higher private sector debt service ratios weaken capital deepening and TFP growth²

¹ Impact of one standard deviation increase over three years in household, non-financial corporate and central government debt, respectively, on real GDP growth during the subsequent three years. See Annex C for details. ² Long-run impact of one percentage point increase in debt service of private non-financial sector debt. Based on a panel regression of capital deepening or TFP's contribution to GDP growth on its lag, average debt service costs over the past three years, the log size of equity market capitalisation to GDP, private sector credit to GDP and the square, government consumption to GDP, GDP deflator inflation, lagged GDP growth and country fixed effects.

Sources: Conference Board; Penn World Tables; World Bank; BIS.

The effects described here are consistent with recent analyses of credit boom-bust cycles in the household sector. Panel data analysis covering a number of decades finds that an expansion in household debt (Graph 4.A and Annex C; see also Lombardi et al (2017), Mian et al (2017)) or a large increase in household debt service ratios (Drehmann and Juselius (2012), Drehmann et al (2023)) systematically predicts lower GDP growth over the following years.⁸ In addition, BIS analysis finds that private sector debt service ratios (including households and corporates) tend to lower not only capital accumulation but also total factor productivity (TFP) growth in the long run (Graph 4.B).

Credit allocation weakening productivity growth

Credit expansions may reduce growth if they transfer resources to less productive sectors and firms.

Over the past two decades, corporate credit in EMEs has shifted towards funding construction and real estate projects at the expense of manufacturing and other industries (Graph 5.A). This shift closely mirrors the expansion of household credit,

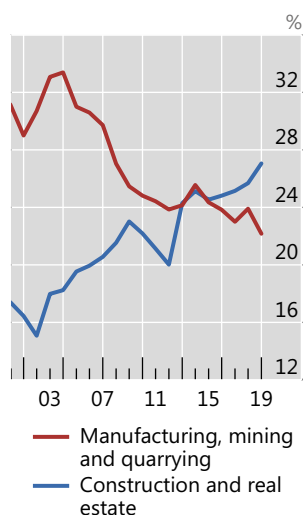
⁸ The effects are economically large: in Lombardi et al (2017) a 1 percentage point increase in the household debt-to-GDP ratio tends to lower growth in the long run by 0.1 percentage points. In Drehmann et al (2023), a unit increase in debt service reduces cumulative output growth by 0.7 pp after 4 years and continues to exert a negative influence up to 7 years. In Mian et al (2017), the effects are found to be statistically insignificant for non-financial corporate debt and government debt. The latter results are consistent with Graph 4.A and Annex C.

which typically boosts demand for housing as well as demand for non-tradables over tradables.⁹

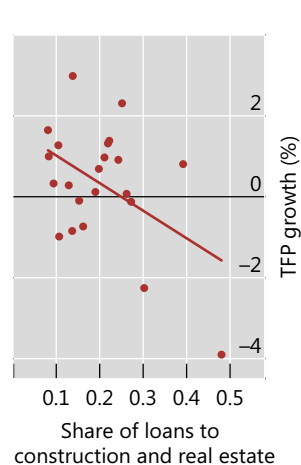
Shift in credit to real estate coincides with drop in EME productivity growth

Graph 5

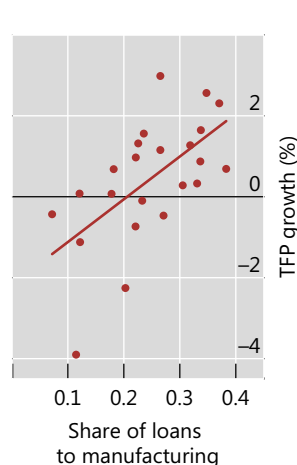
A. Sectoral credit shares shift^{1,2}



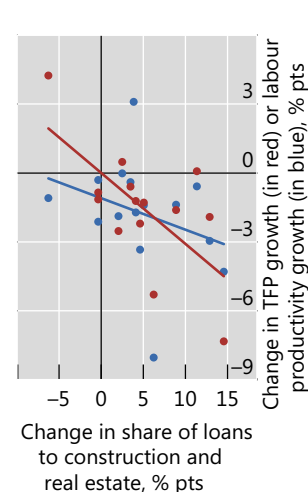
B. TFP and loans to construction and real estate^{1,3}



C. TFP and loans to manufacturing^{1,3}



D. Changes over time^{1,4}



¹ Share of loans refers to share of corporate credit. ² Median sectoral credit shares, based on a balanced panel of 13 EMEs. ³ Averages over the period 2000–18 for 25 EMEs, depending on data availability. ⁴ Changes between 2000–7 and 2008–18.

Sources: Müller and Verner (2023); World Bank.

The reallocation to real estate credit can reduce growth because productivity gains are generally smaller in these sectors. As illustrated in Graphs 5.B and 5.C, productivity growth tends to be lower in countries with a greater share of construction and real estate loans, and higher in countries with a greater share of loans to the manufacturing sector. Indeed, the larger the expansion in credit to construction and real estate, the bigger the drop in labour productivity growth and TFP growth (Graph 5.D). Greater use of collateral in household lending is generally associated with larger shares of lending to construction and real estate (Annex A, Graph A.8). In the BIS survey, some concern that housing may be crowding out other lending has indeed been expressed by EME central banks where housing accounts for a large share of total credit.

The observed shift towards non-tradables should – at least partly – reflect the process of economic development, as demand for non-tradables naturally increases with per capita income.¹⁰ Furthermore, where housing markets are less developed,

⁹ Indeed, a similar trend in credit allocation obtains if one considers the share of credit to households, construction, and real estate relative to total credit to households and corporates (assuming that most household credit reflects mortgages, this yields a broader measure of credit to the housing sector).

¹⁰ Governments may also be keen on promoting home ownership. See, for example, the note from Saudi Arabia.

credit allocation to this sector might potentially have positive effects over time, stemming from the buildup of housing equity.¹¹

That said, credit booms in these sectors are associated with weaker subsequent growth in the medium term (Müller and Verner (2023); see also the note from Czechia). To some extent, this likely reflects overinvestment in construction and services and underinvestment in manufacturing, which have adverse effects on aggregate productivity growth that can persist long after the boom subsides.¹² More broadly, credit reallocations during booms and their impact on productivity have been well documented for both AEs and EMEs.¹³ They tend to be amplified by capital flows and can be particularly strong for commodity exporters in periods of higher commodity prices.¹⁴

One signal that credit booms or sectoral credit reallocations may at least partly reflect resource misallocation is the increase in the dispersion of productivity across firms (see Annex D). Examining this dispersion within sectors helps avoid conflating misallocation with shifts in demand towards lower productivity sectors. Estimates indicate that this measure has risen (Graph 6.A). Strikingly, the increase in dispersion in EMEs has exceeded that in AEs.¹⁵

Statistical analysis indicates that the sectoral reallocation of credit over the past 20 years may be associated with the rise in within-sector productivity dispersion. Estimates show that sectors with stronger credit growth experienced larger increases in within-sector productivity dispersion (Graph 6.B). In addition, countries with a large dispersion in credit growth across sectors – ie experiencing strong sectoral reallocations – also saw a general rise in within-sector productivity dispersion. By contrast, the strength of credit expansions at a country level does not seem to have a significant impact. Overall, this evidence suggests that when one sector experiences particularly strong credit growth, financial intermediaries may become less discerning in screening potential borrowers in that sector and that there can be spillovers to other sectors' allocations.

¹¹ For example, entrepreneurs' housing equity can help ease credit constraints for smaller and younger firms (eg Banerjee and Blickle (2021)).

¹² The reallocation of credit to the real estate sector can also weigh on long-term growth through its contribution to financial crises (eg Müller and Verner (2023), Ivashina et al (2024)).

¹³ See eg Kharroubi et al (2023) for evidence on OECD countries. Cetto et al (2016) argue that similar reallocation in Italy and Spain resulted from cheaper credit following the establishment of the euro area.

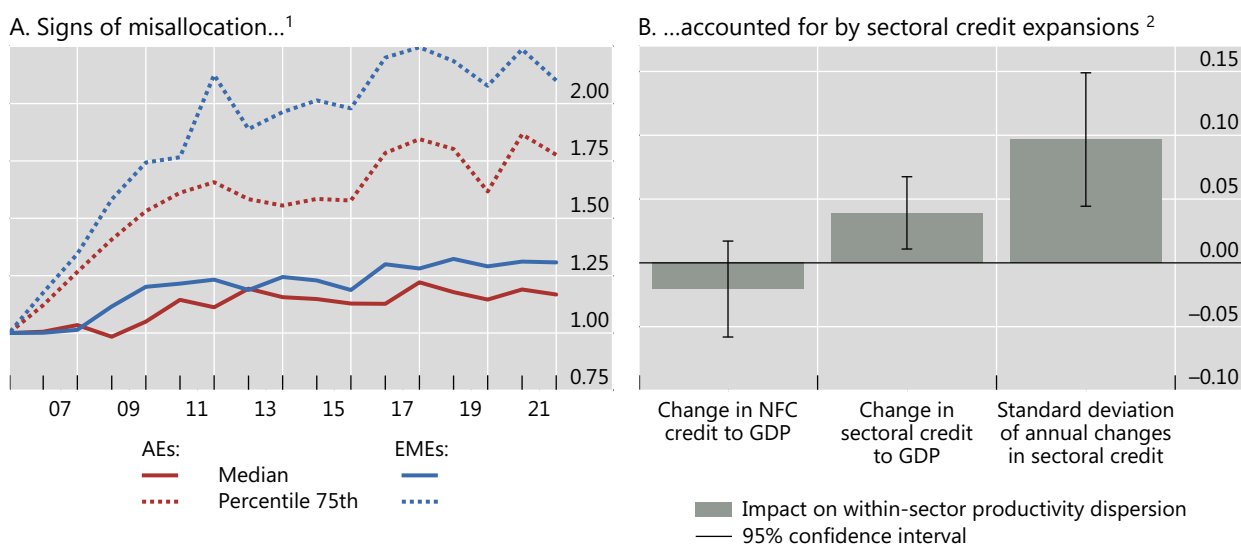
¹⁴ Economic agents fail to internalize the positive spillovers of technological improvements in the tradeable sector, slowing the adoption or import of new technology (eg Benigno and Fornaro (2014) and Alberola and Benigno (2017)). For empirical evidence on the importance of capital inflows, see eg Benigno et al (2015).

¹⁵ Another manifestation of worsening capital allocation is the presence of zombie firms. These are less productive than other firms, and their presence lowers investment and employment in the more productive firms (see Banerjee and Hofmann (2018, 2022)). Albuquerque and Iyer (2023) find that the share of zombie firms in EMEs has risen since the GFC.

Credit expansions contribute to less efficient resource allocation in EMEs

Standard deviations

Graph 6



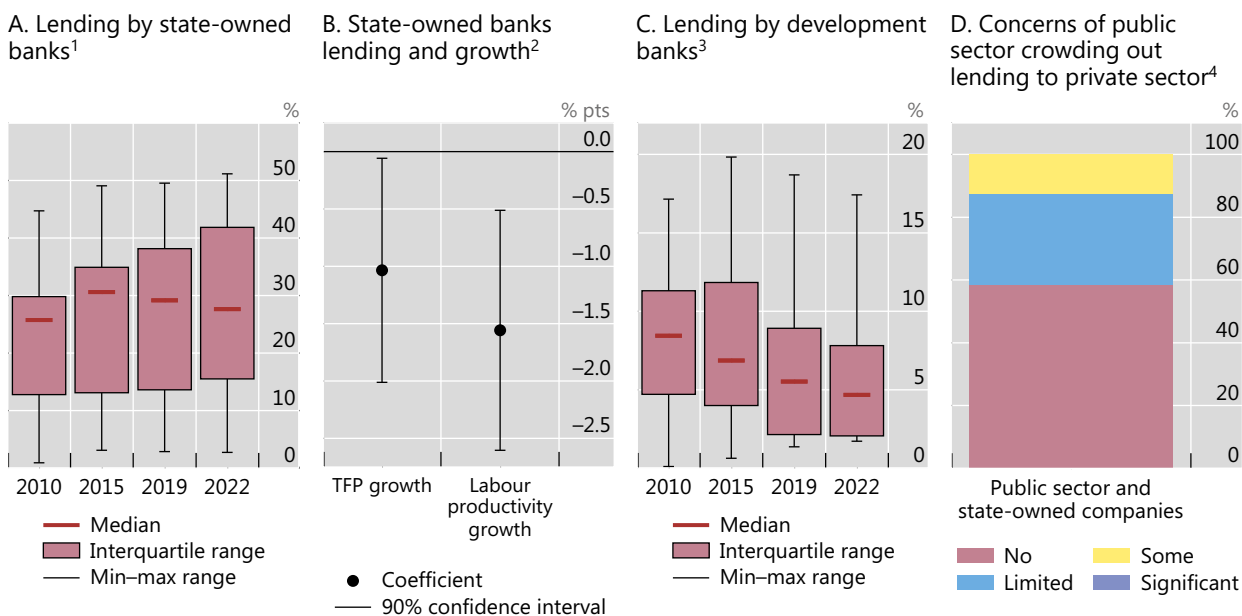
¹ Dispersion of firm-level productivity within a sector. Based on a sample of 629247 firm-year productivity observations in 15 sectors across 55 countries. See Annex D for details. ² Estimated effect of credit on within-sector productivity dispersion. Impact of a two standard deviation increase in the variable shown on the x-axis, in standard deviations of sectoral productivity dispersion. Variables on the x-axis corresponds to annual changes as a share of GDP. See Annex D for details.

Sources: Müller and Verner (2023); IMF; Capital IQ; national data; BIS.

Publicly owned banks do not seem to improve credit allocation

Credit allocation can also be influenced directly by governments through ownership of commercial banks and through the activities of development banks.

Public ownership may facilitate the financing of public projects and, more generally, address market failures in the provision of credit to particular sectors or firms (see the note from Türkiye). Credit supply of public banks also tends to be less procyclical than that of privately owned banks. That said, publicly owned banks may also stray from their objective of correcting market failures and be influenced by political interests and rent-seeking behaviour. While earlier literature tended to emphasise the positive “development” or “social” view of public banks, a number of later papers emphasise the more negative “political” one (see, for example, La Porta et al (2002) and Levy Yeyati et al (2007) for a discussion). The note from Algeria mentions that the country’s largest state-owned bank has been privatised with a view to improving governance and access to finance for the private sector.



¹ As percentage of credit to the NFPS. Statistics for state-owned banks (excluding development banks) for nine EMEs. For CN and PH it corresponds to state-owned and development banks. ² Effect on TFP and labour productivity growth of an increase in the share of state-owned bank lending in total bank lending, by one standard deviation. Based on a panel regression for nine economies and five-year averages, with country fixed effects. ³ Statistics for development banks of eight EMEs, as percentage of credit to the NFPS. ⁴ As a percentage of central banks responses. It refers to concerns of credit to the public sector and state-owned enterprises by commercial banks crowding out lending to the private sector.

Sources: World Bank; national data; BIS survey responses; BIS.

Credit supplied by state-owned banks varies strongly among EMEs (Graph 7.A). The relative importance of these banks has also risen slightly post-GFC (Graph 7.A), including in Argentina, Hungary, Indonesia and Türkiye (on the contrary, Brazil has seen a decline since the mid-2010s).¹⁶

This type of credit's influence on growth is unclear though. Average TFP and especially labour productivity growth tends to be lower in EMEs when state-owned banks provide a larger share of credit (Graph 7.B). Moreover, recent panel data analysis finds no robust correlations between state ownership and economic growth, even when controlling for possible reverse causation (Panizza (2023)).

Development banks generally have a narrower mandate than state-owned banks. They may offer subsidised credit and target specific sectors and often focus on long-term financing, especially of infrastructure projects. For example, in Colombia, the main goal of the country's three development banks is to promote development in agriculture, infrastructure and overall corporate sector growth. In Czechia, they focus on supporting firms' international expansion. And in Malaysia, they are increasingly focused on underserved segments such as small farmers and microenterprises. However, for the median EME, the share of lending by development banks has declined somewhat since the early 2010s (Graph 7.C).

¹⁶ As the note from the United Arab Emirates discusses, these institutions often played a key role in lending during the pandemic.

A related dimension concerns the allocation of credit to public sector non-financial firms. In several EMEs, large state-owned firms often operate in key industries. Yet, they tend to be less profitable than their private sector counterparts (see, for example, IMF (2020)). In EMEs, the share of domestic debt securities issued by state-owned firms is often significantly higher than in AEs (Annex A, Graph A.9). However, the BIS survey finds only limited concerns about lending to the public sector and state-owned firms crowding out lending to the private sector (Graph 7.D). In particular, no central bank has “significant” concerns about such crowding out.

A further increase in public debt may crowd out private credit

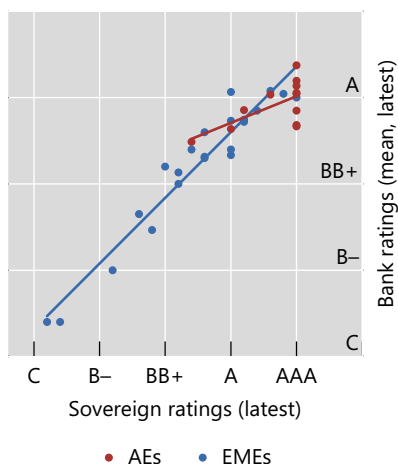
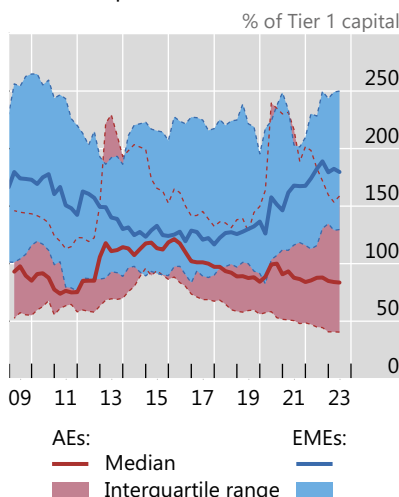
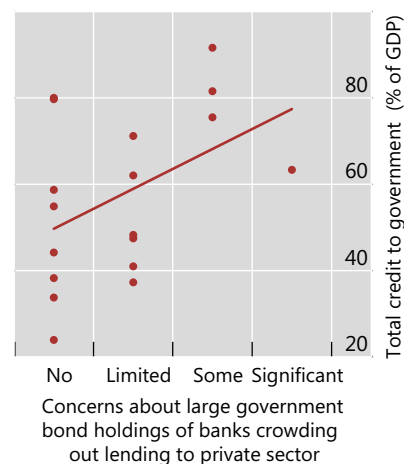
Governments may also affect the overall availability of credit to the private sector indirectly, through the impact of fiscal policy on public debt.

Like private credit, public debt can be two-sided. At sufficiently low levels, the expansion of public debt can crowd in private credit and investment. Indeed, a larger market for debt securities enhances liquidity, which is key for the development of private financial intermediation and for allowing firms and individuals to better manage risk associated with long-term investment projects. Furthermore, the government accounts for a significant share of total investment in many EMEs. Debt-financed spending on essential infrastructure as well as on health and education is often an essential complement to private sector initiatives.

However, public debt may also crowd out private credit. Sovereign risk generally rises with debt levels, leading investors to demand higher interest rates.¹⁷ In turn, this leads to higher funding costs for financial intermediaries and the broader economy, thereby reducing the volume of private credit. Higher public debt may also reduce the room for countercyclical fiscal policy, thus implying more volatile and uncertain macroeconomic conditions for private agents.¹⁸ Crowding out can also occur through financial repression. Even though it may help contain public borrowing costs and reduce concerns about sustainability, it has been a typical source of capital misallocation and lower growth (eg Roubini and Sala-i-Martin (1992, 1995); Levine (2005)).

¹⁷ See also the note from South Africa.

¹⁸ Macroeconomic instability in response to higher sovereign risk in EMEs is normally exacerbated by fluctuations in the exchange rate. See eg Banerjee et al (2023).

A. Bank ratings vs sovereign ratings¹B. Banks' sovereign debt exposure as ratio to capital²C. Banks' holdings of government debt and concerns of crowding out³

¹ Mean bank ratings across 21 AEs and 22 EMEs. For stand alone, Fitch Viability; for all in, Fitch LT Issuer Default Rating. Data as of end-February 2024. ² The sample consists of nine AEs and 18 EMEs, where data are available. Other depository corporations net claims on central government and their claims on state and local government by residence, as percentage of banks' Tier 1 capital. The reporting depository corporations comprise all solo entities resident in the country, including those that are foreign-owned subsidiaries or branches of foreign entities. Branches and subsidiaries abroad of domestically owned entities are not included. ³ Excluding SG. For total credit to government it corresponds to latest available figures.

Sources: IMF; Fitch; S&P Global; national data; BIS survey responses.

Multiple studies show a robust negative relationship between public debt-to-GDP ratios and subsequent average GDP growth in both AEs and EMEs as well as the existence of threshold effects.¹⁹ There is also significant evidence that the crowding out of private spending is exacerbated by how exposed financial institutions are to public debt, as illustrated by the close link between sovereign and bank ratings (Graph 8.A).²⁰ Such exposure has been on the rise in EMEs since the mid-2010s (Graph 8.B). Unsurprisingly, concerns about crowding out of private investment are larger for central banks in economies with higher shares of public debt (Graph 8.C). In the segmented credit market of China, the sharp increase in local public debt has been shown to have crowded out investment at the most dynamic private manufacturing companies while not affecting state-owned enterprises (Huang et al (2020)).

Avoiding financial crises is key to supporting long-run growth

One important reason why debt can be excessive is that it can increase the probability and intensity of financial crises, especially if the market conditions that have enabled

¹⁹ While the evidence is generally consistent with the existence of turning points, estimating these precisely has proven technically challenging. These are very much likely to be country specific. See, for example, the survey in Fatás et al (2020).

²⁰ The channels are described in detail in Borio et al (2023), along with a review of the empirical evidence. The adverse interaction of financial and fiscal risks (or so-called "doom loops") is a feature of both AEs and EMEs. In EMEs they can be exacerbated by sharp movements in the exchange rate.

credit expansion (eg low global interest rates, strong global growth or optimism about future technological innovation) were to turn. So far, with a few exceptions, major EMEs have not experienced financial crises since the early 2000s (Annex A, Graph A.1). But questions arise about whether the era of very low global interest rates may be ending (eg Benigno et al (2024)).

Should a crisis occur, the negative impact on GDP growth is likely sizeable and long-lasting. The accompanying recessions are deeper and longer-lasting than normal recessions. Not only the most inefficient firms but also those with high productivity are typically forced out of the market, including a disproportionate number of young firms. It may take time to repair firm-finance links and retrain unemployed workers. Public investment might be depressed for a long time until fiscal positions improve. As a result, financial crises are likely to permanently reduce output levels (eg Cerra and Saxena (2008)) and temporarily halt convergence of EMEs to richer economies (Reinhart and Reinhart (2015)).

The persistence of any growth effects additionally depends on the structure of financial intermediation. Bank finance, which is mostly conducted on banks' own balance sheets with high leverage and maturity mismatch, can make bank-based systems more vulnerable to shocks compared with market-based finance, which passes any losses onto borrowers. Consistent with these vulnerabilities, bank-based financial systems tend to exhibit higher systemic risk (Bats and Houben (2020)) and experience deeper and more prolonged financial crises (Gambacorta et al (2014)). In these circumstances, market financing can work as a "spare tire", substituting for bank credit and thus contributing to a reduction in systemic risk (Greenspan (1999), Levine et al (2016)).

What could boost the long-run growth impact of finance?

At least three factors might shape future financial development in EMEs: the further expansion of market-based finance; new digital technologies; and macro-financial stability. How these factors will play out and ultimately affect long-term growth will depend crucially on policy intervention. This section turns to each in turn.

The development of market-based finance

Many EMEs can benefit greatly from further development of market-based finance. Recent studies suggest that, at more advanced stages of financial development, market-based finance can yield greater productivity gains than bank-based finance (eg Demirgüç-Kunt et al (2013), Gambacorta et al (2014), Hsu et al (2014)).²¹ As economies develop, market-based finance is often better at financing larger and more complex investment projects. The variety of financial claims and greater potential for investors to diversify risk in capital markets boost their appetite for financing high-risk, high-productivity investments. In addition, the information

²¹ These findings are largely based on equity finance, but evidence from AEs suggests that bond finance has an independent influence on growth (Fink et al (2003) and Pradhan et al (2016)), contradicting earlier evidence (eg Levine (2002)). Unfortunately, data limitations on bond markets, especially for EMEs, prevent reaching a definitive conclusion.

aggregation activity of capital markets helps facilitate efficient resource allocation for innovative investment opportunities.

Risk sharing possibilities in corporate bond markets could also help EME firms meet larger financing needs, including for the green transition or infrastructure.²² Country notes describe how specialised bonds for green finance are already helping to meet these financing needs by attracting sizeable ESG (environmental, social and governance) capital flows (see also Mojon (2023)). This finance could further stimulate new drivers of growth and may itself help to deepen domestic currency corporate bond markets (see note from Mexico).

Equity markets, in particular, are good at promoting innovation-based growth. Going public can help reduce financial constraints by providing new and cheaper capital to fund investments (Kim and Weisbach (2008), Brav (2009)). Although the overall contribution of equity capital towards firms' day-to-day financing is small compared with credit, equity markets provide an important exit option and source of liquidity for entrepreneurs and early-stage investors.²³ Stock options also help firms with high growth potential attract knowledge-based employees.²⁴

Statistical analysis finds an inverted U-shaped relationship between equity market size and per capita GDP growth (Graph 9.A and Annex B). However, unlike for private credit (Graph 3.A), EMEs are still very far from the estimated turning point, suggesting that further deepening of equity markets might be associated with stronger growth than any addition to credit.

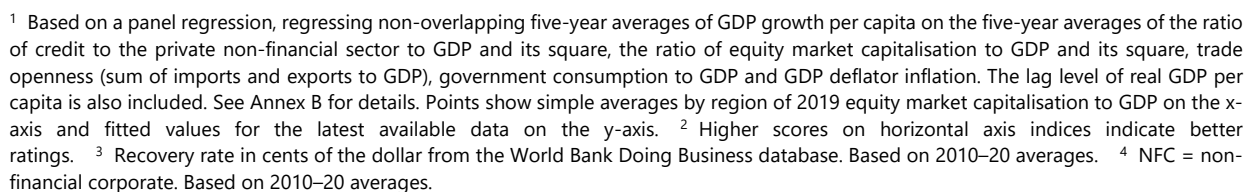
That said, major leaps in market-based finance are likely to require the strengthening of relevant institutions (CGFS (2019)). The arm's length nature of market-based finance relies heavily on a supportive legal and regulatory environment, including greater judicial protection of property rights, more efficient litigation processes and greater respect and support for enforcing contracts (see eg La Porta et al (2008)). Their importance for efficient intermediation is confirmed by central banks (Annex A, Graph A.10).

Unfortunately, indicators of property rights and impartiality of EME legal systems have barely moved in two decades, leaving a significant gap with AEs (Annex A, Graph A.11). In some EMEs, improving securities market regulation could help deepen equity markets, given the strong correlation between the perceived strength of securities market regulation and market size (Graph 9.B). Regarding debt markets, inefficient insolvency regimes continue to hold back the size of corporate bond markets in some EMEs (Graph 9.C). In countries where insolvency regimes are efficient, such as Korea, Malaysia and Singapore, non-financial firms have significantly larger amounts of bonds outstanding compared with countries with lower recovery rates. Developing complementary markets, such as for hedging, can also support the resilience of debt markets when faced with shocks (Doornik et al (2024)).

²² See the note from Hungary on the development of a covered bond market for mortgages.

²³ For example, research finds that successful IPOs allow entrepreneurial human capital to be reallocated to new firms, leading to greater overall startup activity (Babina et al (2017)).

²⁴ Consistent with this, the literature on middle-income traps suggests that the development of equity markets can not only reduce the cost of finance but also improve the incentives to invest in skills (Agénor (2017)). Equity finance might also reduce the probability and intensity of financial crises compared with debt.



Sources: IMF; Penn World Tables; World Bank; World Economic Forum, *The Global Competitiveness Index 2018 database*; BIS.

Improvements in legal and regulatory frameworks alone may not suffice. Efforts to mobilise savings towards market-based finance by developing the institutional investor base may also be needed (CGFS (2019)). In this regard, in some countries pandemic-related pension fund withdrawals have set back the deepening of the investor base (Annex A, Graphs A.3 and A.4; see the note from Chile). As mentioned in several country notes, obstacles for further development include high fees, fund distribution controlled by banks, retail investors with short horizons and low household wealth leading to a preference for bank deposits. Overcoming them will require additional policy efforts for fostering competition, financial literacy and consumer protection (see the note from Poland).

Technological progress has substantially reduced the cost of gathering, storing, processing and distributing information, and it will continue to do so in the future, especially as a result of advances in artificial intelligence and quantum computing (eq

Goldfarb and Tucker (2019)). In the financial industry, this trend has initiated several profound changes.

First, it has led to the establishment of new, cheaper and more convenient forms of payments. Mobile technology, in particular, allows users to store money and make payments through mobile phones, without relying on physical bank branches. This benefits especially poorer, rural populations and previously financially excluded households and firms (eg Alfonso et al (2020), Frost et al (2021), Demirgüç-Kunt et al (2022)).

Second, digital platforms (big techs) have started offering financial services alongside their main services, normally matching buyers and sellers of non-financial products (eg Alibaba, Amazon, Mercado Libre). These platforms enjoy significant economies of scale and scope. The more users they have, the bigger the benefits for others to join the platform. At the same time, they are able to gather and analyse vast amounts of data from users' activities to provide more personalised financial offerings (see eg BIS (2019)).

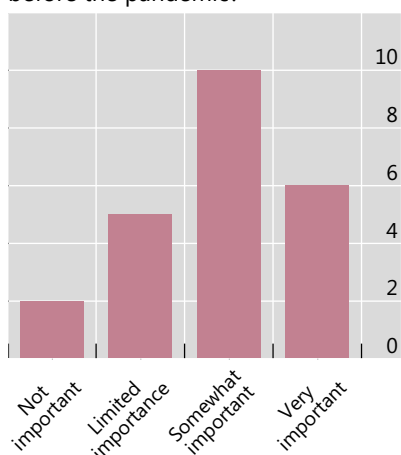
Third, new digital technologies can in principle improve credit risk assessment and reduce the need for collateral. E-commerce platforms, existing banks and more specialised fintech firms have started using these technologies to analyse data from online applications, digital payments and other sources. A potential benefit is that even unbanked individuals and informal firms can be screened based on their online activities (eg mobile payments, e-commerce and social media) (Frost et al (2019), Beck et al (2022)).

Central banks' views on digital innovation in finance

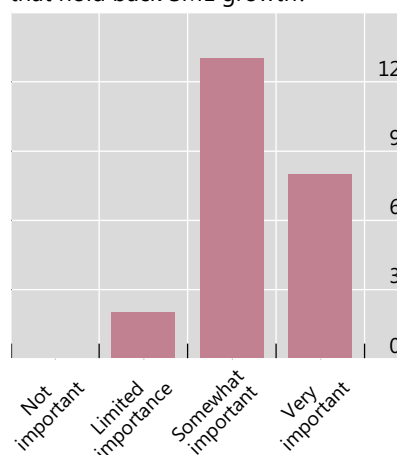
Number of central banks

Graph 10

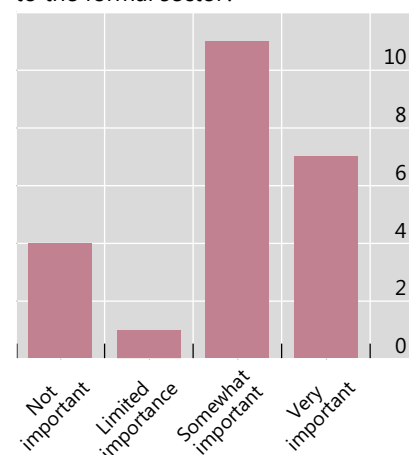
A. How important have recent digital innovations been in reducing SME credit constraints compared with before the pandemic?



B. How important could digital innovations in finance potentially be in alleviating the credit constraints that hold back SME growth?¹



C. How important could digital innovations in finance potentially be to help firms move from the informal to the formal sector?



¹ SME = Small and medium-sized enterprises.

Source: BIS survey responses.

These changes, and especially their implications for financial inclusion, are highlighted in several central bank notes and the BIS survey. For instance, the notes

from Hong Kong SAR and Thailand discuss how “alternative data” from utility bills, mobile phone bill records and spending behaviours on e-commerce platforms enable banks to better screen borrowers. In Thailand, such information has already helped firms and households access the formal financial system. Several notes describe how fintech firms have used new credit risk models to increase the sophistication and speed of providing credit.²⁵ In China and Thailand, fintech has helped micro and small enterprises gain access to credit. In the BIS survey, central banks mention that recent digital innovations have already helped to reduce small and medium-sized enterprise (SME) credit constraints compared with before the pandemic, and there is scope for further gains (Graphs 10.A and 10.B).²⁶

That said, the adoption of technology is not without challenges. In Hong Kong SAR, pilot studies with new technology and data helped improve measures of SMEs’ short-term credit risk. Yet, for longer-term predictions, some models did not perform better than a coin toss, even when allowing for retraining with additional data. In Korea, peer-to-peer loans are skewed towards household mortgages, while credit to firms has yet to benefit significantly. In Colombia, banks do not have systematically large exposures to high-growth firms. This suggests that even with technological advances, difficulties in identifying the best performers might persist.

The ongoing digital transformation will bring major benefits in terms of greater inclusion and lower informality, with large positive spillovers on aggregate growth. Better access to credit should strengthen resilience and capital deepening.²⁷ Moreover, the expected reduction in informality (Graph 10.C) should encourage firms to grow and achieve optimal scale (Aguilar et al (2024)). That said, not everyone agrees on the quantitative relevance of these effects. For example, Rodrik and Stiglitz (2024) argue that the bulk of informal enterprises are unlikely to ever become productive. In their view, the best option is to encourage the expansion of existing formal firms and increase productivity among the more dynamic informal firms.

The realisation of these benefits very much depends on policy intervention. The private sector generally has a stronger capacity for innovating and tailoring new technologies to meet the demands of end users. Yet, their incentives are not always aligned with social goals. Economies of scale and scope may lead – and in some economies have already led – to a small number of large financial providers, with adverse implications for financial stability, competition and, ultimately, further innovation. Traditional bank incumbents may also prevent the emergence of new more technologically advanced competitors. Additional risks concern the misuse of sensitive personal information and underinvestment in cyber security.

To protect the safety of payments and competitive practices, central banks and other public agencies have already taken several initiatives.

²⁵ As mentioned in some notes, fintech firms are already competing with incumbent banks or are at the forefront of managing customer relationships.

²⁶ Strides in financial inclusion are also taking place through the reorganisation of traditional business lines, as described in the country notes. For example, in the Philippines, money service businesses that intermediate remittances have partnered with banks, while pawn brokers have specialised in providing credit to SMEs. In Peru, microfinance, which initially filled the gap for lending to agriculture when state-backed lending declined, has since diversified into micro- and small-firm lending.

²⁷ See also Mehrotra and Yetman (2015) for evidence on how greater financial inclusion helps consumption smoothing.

First, several EMEs have established fast payment systems (FPS), which permit almost instant settlement of retail payments 24/7. They are normally based on open public infrastructure to ensure a level playing field among payment service providers (PSPs) and, to avoid boycott, are sometimes complemented by the legal requirement for large financial institutions to participate. They have also been designed to maximise ease of use (with multiple use cases). Because of the great convenience and low or no fees for users, several FPS have already been widely adopted (eg Pix in Brazil, the Unified Payments Interface (UPI) in India and PromptPay in Thailand; see also the note from Argentina).²⁸

Second, many EMEs have imposed common standards to improve interoperability among different PSPs as an alternative or complement to public platforms. Common standards are also key to open banking. This is the sharing through application programming interfaces (APIs) of data by banks and non-banks with third parties (including individuals' and firms' personal and financial information, with their consent). In turn, these third parties can leverage the data to offer more specialised financial services (see, for example, notes from Israel, Philippines, Thailand and Saudi Arabia).²⁹ Common standards also facilitate the creation and maintenance of credit registries. As highlighted in some country notes, central banks have set up credit registries to help reduce information asymmetries.

Third, several EMEs are taking steps to adapt their financial stability, antitrust and privacy frameworks. For example, to address the increasingly blurred boundaries between banks, fintechs and big techs, China has brought all financial activities under financial supervision. Several country notes (eg Israel, Philippines, Thailand) stress the need to have a regulatory framework that facilitates not only the entry but also the monitoring and supervision of new players, including virtual banks and fintechs.

Macro-financial stability

Historically, financial development has been hindered by macro-financial instability. In particular, high and variable inflation and frequent defaults tend to coincide with a smaller financial sector, worse bank performance and lower average growth (see eg Choi et al (1996), Boyd et al (2001), Boyd and Champ (2006, 2009), Rousseau and Wachtel (2002)). As noted earlier, macro-financial stability has greatly improved since the early 2000s in most EMEs, allowing their financial systems to develop rapidly. This period was not without challenges though. EMEs had to face large swings in capital flows and exchange rates and, more recently, a sharp tightening in global interest rates. Even in the face of these new challenges, they have proved remarkably resilient.

Undoubtedly, the improved performance of EMEs owes a lot to historically low global interest rates and the growth impetus of globalisation. Yet, better policy has also contributed. First, EMEs tightened banking regulation and supervision in the wake of crises in the 1980s and 1990s, which allowed many to go through the GFC

²⁸ Central bank digital currencies (CBDCs) can play a similar function as a common platform on which private providers can build customer-tailored services. So far, CBDCs are operational only in a handful of countries: The Bahamas, Eastern Caribbean, Jamaica and Nigeria (Alfonso et al (2022)).

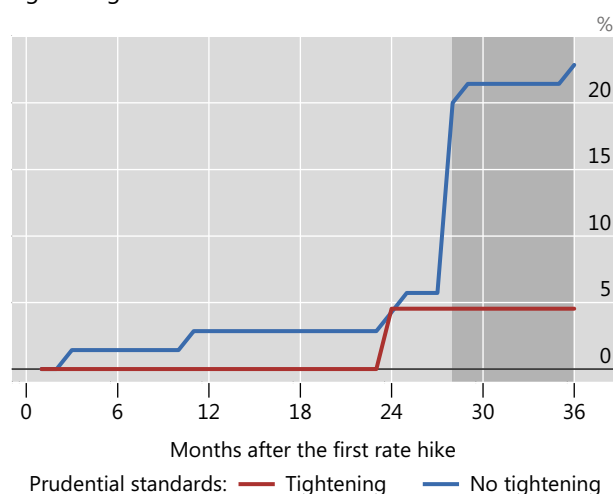
²⁹ India has established the legal framework for a class of regulated data fiduciaries, called account aggregators, which enable customer data to be shared within the regulated financial system with the customer's knowledge and consent.

unscathed. Second, central banks were granted greater autonomy as of the late 1990s and subsequently abandoned fixed exchange rates for inflation targeting as their nominal anchor. Third, they have kept improving their policy frameworks to deal with large swings in capital flows and exchange rates, increasing the use of foreign exchange (FX) intervention and macroprudential measures alongside interest rate policy (eg BIS (2022); see also the note from Indonesia).

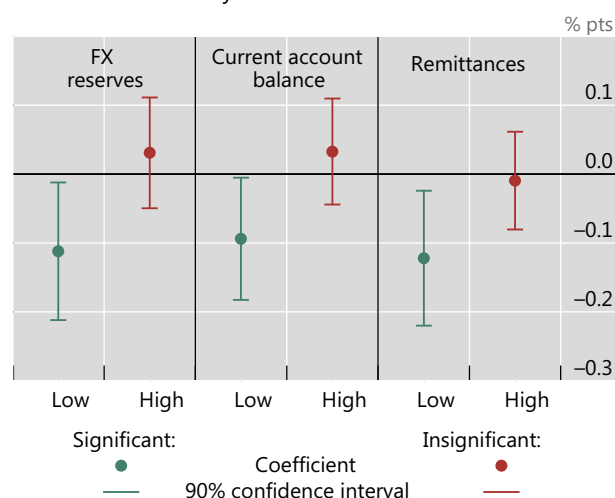
Stronger MFSFs make economies more resilient

Graph 11

A. Lower probability of financial stress during MP tightening¹



B. Better fundamentals make EMDE growth less sensitive to the G7 financial cycle²



¹ Financial stress measured as the incidence of a banking crisis. Red line (blue line) shows the probability of financial stress during monetary policy tightening where prudential standards were also tightened (were not tightened) during the two years before the first policy rate hike. Based on 92 monetary tightening episodes. Shaded areas indicate that the difference in the probability of financial stress between prudential tightening and non-tightening is statistically significant at the 10% level. ² The graph shows the coefficient on the sensitivity to the G7 financial cycle in a growth regression, for emerging market and developing economies with different levels of macro-financial buffers. See Annex E for details.

Sources: Boissay et al (2023); World Bank; BIS.

The effectiveness of macroprudential policy and accumulation of international reserves is well documented in the literature (as reviewed, for example, in BIS (2018)). Recent analyses provide additional support. For example, as shown in Graph 11.A, economies that had implemented macroprudential measures had a lower probability of financial distress during monetary tightening episodes compared with economies that had not implemented them beforehand (Boissay et al (2023)). The accumulation of larger FX reserves – along with other improvements in macroeconomic fundamentals – significantly reduces the sensitivity of long-term growth in emerging and developing economies to swings in the G7 financial cycle (Graph 11.B) (see also Banerjee and Mian (2023)).³⁰ Similarly, a more active use of macroprudential policy tends to be associated with a lower volatility of long-run growth, working partly

³⁰ The literature tends to consider two different notions of financial cycles. In terms of components, the domestic variant includes credit and property prices, whereas the global one includes financial asset prices and capital flows (see Aldasoro et al (2023)). The exercise in Graph 11.B uses an aggregation of the domestic financial cycles in G7 economies.

through the reduced incidence of low growth outcomes (“growth at risk”) (Boar et al (2017) and Galán (2020)).

Going forward, EME policymakers might find it more challenging to maintain macro-financial stability, for at least three reasons. First, the external landscape is likely to be less benign. Due to geopolitical fragmentation and climate change, supply shocks may increase in frequency, intensity and persistence (see the note from Vietnam). Greater investment needs and higher debt may eventually put an end to the era of very low global interest rates (Benigno et al (2024)). Second, new players are entering the financial ecosystem. In particular, the share of NBFIs in total financial sector assets has already expanded rapidly in several EMEs (Annex A, Graph A.3). Technology is also shifting business away from traditional banking. Nonetheless, most macroprudential tools operate largely through banks. Finally, fiscal risks might become more prominent as population ageing and climate change put more pressures on fiscal resources. MFSFs need to be ready to meet these challenges.³¹

³¹ For a discussion of how the fiscal policy pillar of MFSFs can be strengthened, see Borio et al (2023). For how EME banking systems could adapt to climate-related risks, see Mojon (2023).

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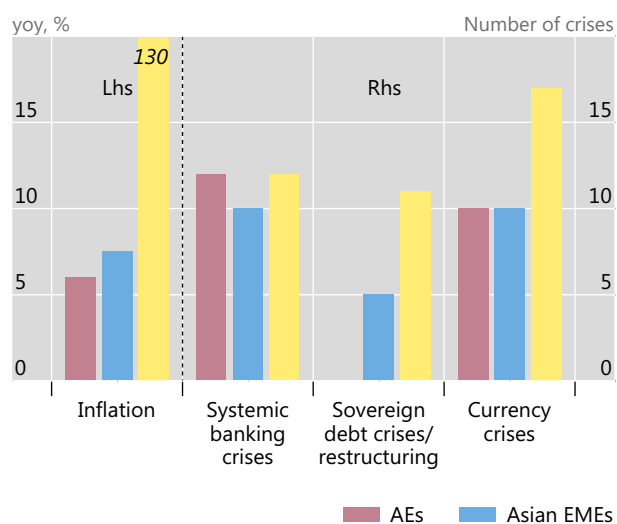
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Annex A: Additional Graphs

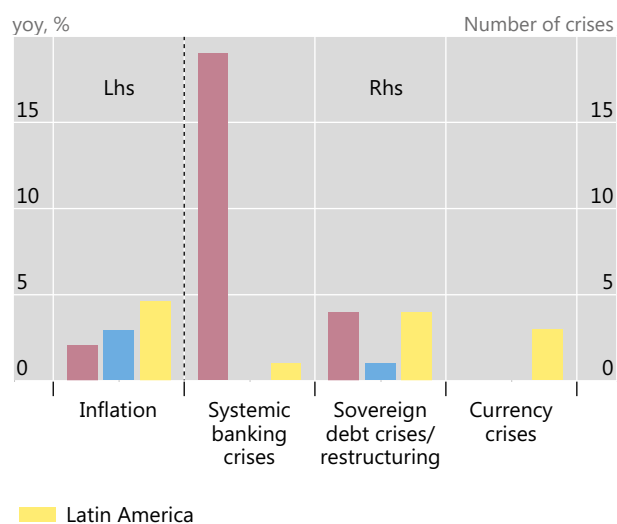
Inflation and crises¹

Graph A.1

A. 1970–2000



B. 2001–17



AEs = AU, CA, CH, DK, EA, GB, JP, NZ, NZ, SE and US; Asian EMEs = CN, HK, ID, IN, KR, MY, PH, SG, TH and VN; Latin America = AR, BR, CL, CO, MX and PE.

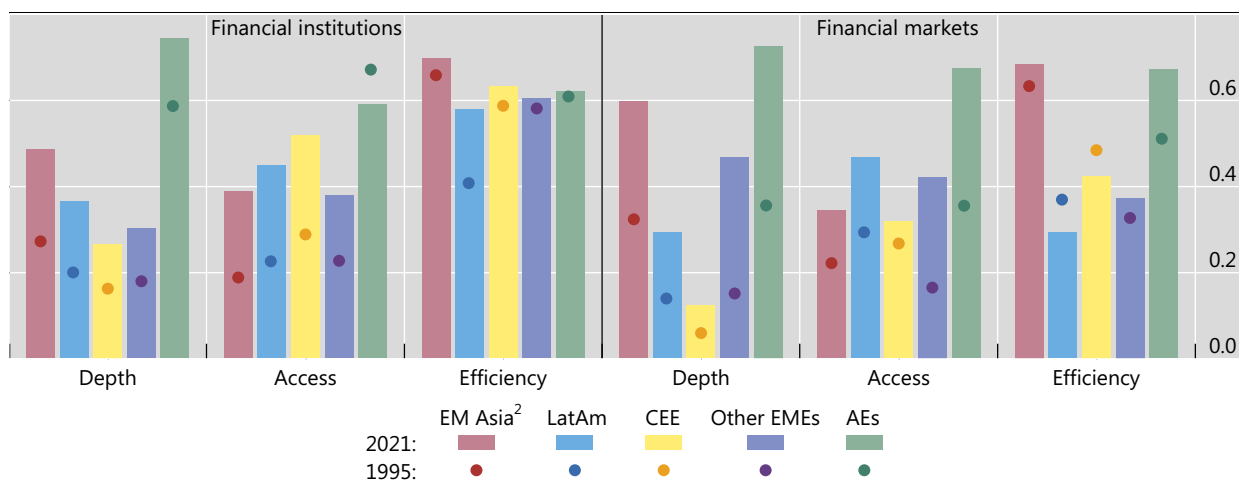
¹ Median annual inflation across countries within each region, simple average of medians for each period.

Sources: Laeven and Valencia (2020); national data; BIS.

Broader measures of financial development¹

Index

Graph A.2



EM Asia = CN, ID, IN, KR, MY, PH, TH and VN; Latin America = AR, BR, CL, CO, MX and PE; CEE = CZ, HU and PL; Other EMEs = AE, DZ, IL, SA, TR and ZA; AEs = AT, AU, BE, CA, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, JP, LU, NL, NO, NZ, PT, SE and US.

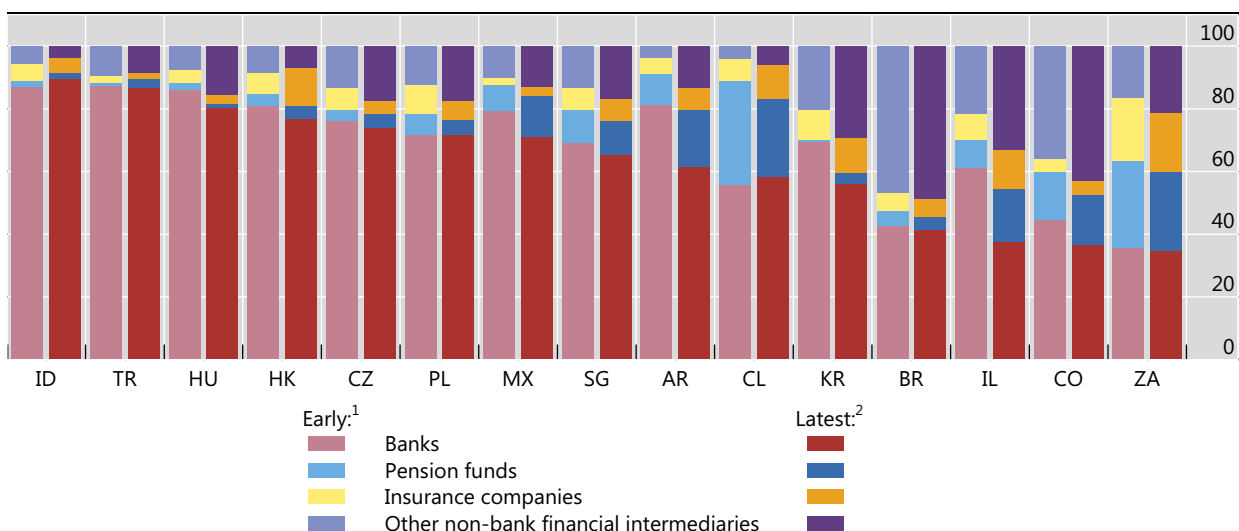
¹ Data used to compile the subcomponents of the aggregate index: financial institutions' depth: private-sector credit to GDP; pension fund assets to GDP; mutual fund assets to GDP; insurance premiums, life and non-life to GDP. Financial institutions' access: bank branches per 100,000 adults; ATMs per 100,000 adults. Financial institutions' efficiency: net interest margin; lending-deposits spread; non-interest income to total income; overhead costs to total assets; return on assets; return on equity. Financial markets' depth: stock market capitalization to GDP; stocks traded to GDP; international debt securities of government to GDP; total debt securities of financial corporations to GDP; total debt securities of non-financial corporations to GDP. Financial markets' access: percent of market capitalization outside of top 10 largest companies; total number of issuers of debt (domestic and external, non-financial and financial corporations). Financial markets' efficiency: stock market turnover ratio (stocks traded to capitalization). See K Svirydzenka (2016). ² Excluding HK and SG.

Source: IMF, *Financial Development Index Database*.

Several EMEs financial systems continue to be dominated by banks

As percentage of total financial system assets

Graph A.3



¹ For AR, CL and HU, figures for 2000; for IL, 2001; for PL, 2003; for CZ, 2004; for CO and HK, 2007, for KR, 2008; for MX, TR and ZA, 2010; for BR, ID and SG, 2018. ² Figures for 2022 but, for IL 2021 and for CZ, June 2023.

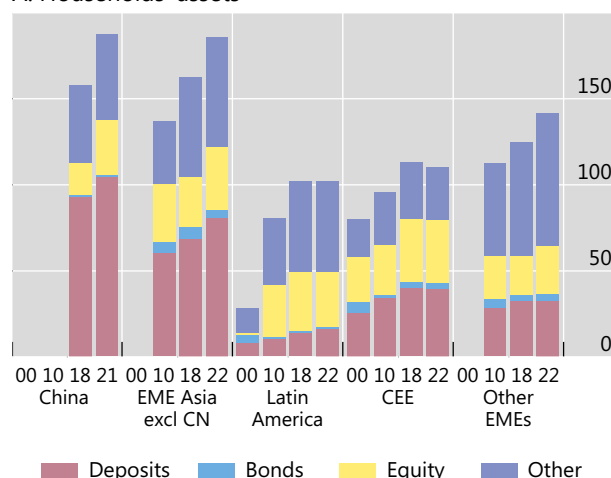
Source: BIS survey responses.

Allocation of domestic savings

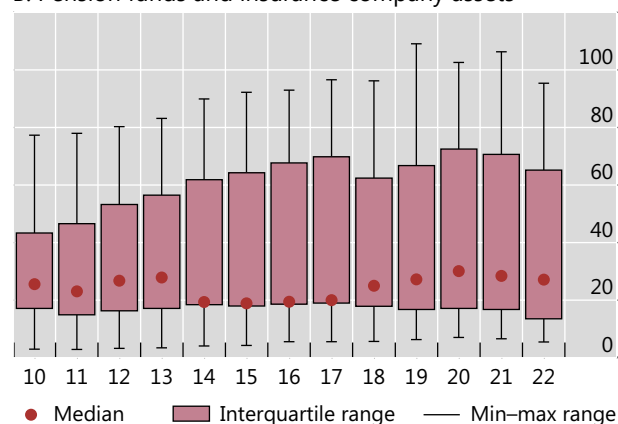
As a percentage of GDP

Graph A.4

A. Households' assets¹



B. Pension funds and insurance company assets²



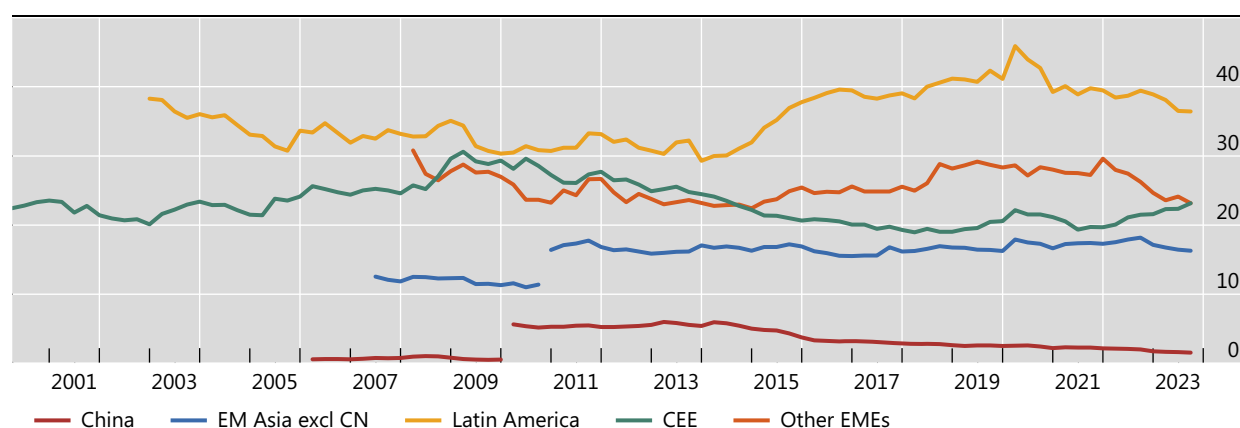
¹ Sum across countries in the region. EME Asia excl CN = KR and MY; Latin America = CL, CO and MX; CEE = CZ, HU and PL; Other EMEs = IL, TR and ZA. For Latin America data for 2000 corresponds only to CO. For IL, data for 2022 corresponds to 2021. ² Statistics across 10 EMEs upon data availability.

Sources: national data; BIS survey responses.

Foreign currency debt of non-financial corporates in EMEs¹

As a percentage of total debt of NFCs

Graph A.5



EM Asia excl CN = CN, ID, IN, KR, MY and TH; Latin America = AR, BR, CL, CO and MX; CEE = CZ, HU and PL; Other EMEs = SA, TR and ZA.

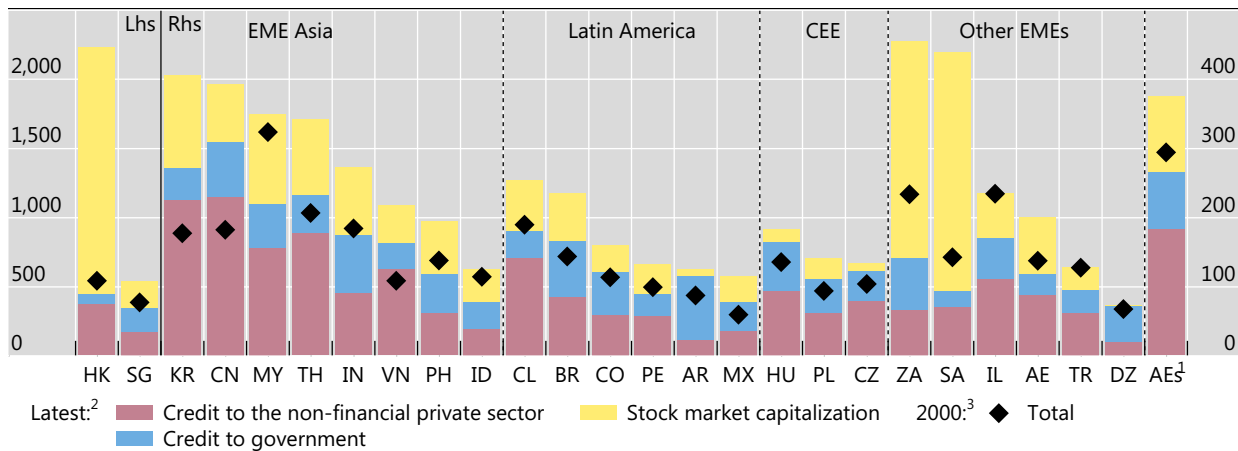
¹ Simple average across countries in the region. Total debt of non-financial corporates is based on national financial balance sheet accounts for those countries that compile these data. For others (ID, IN, MY, SA, TH and ZA), the BIS's estimates sum cross-border and domestic bank credit, and do not capture non-bank creditors' holdings of debt securities; for CN, credit from non-banks is also included.

Sources: Dealogic; Euroclear; LSEG; Xtrakter Ltd; national data; BIS locational banking statistics by residence; BIS credit to the non-financial sector statistics; BIS.

Financial structure

As a percentage of GDP

Graph A.6



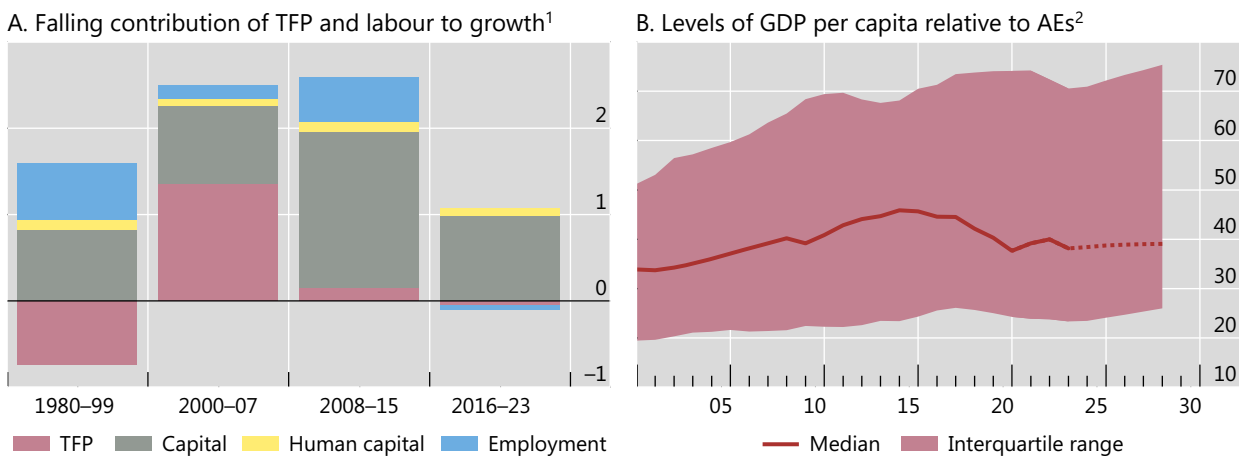
¹ Simple average across 22 AEs upon data availability. ² For credit to the non-financial private sector and total credit to government at nominal value, latest figure correspond to last available quarter in 2023. For AE, DZ, PH, PE and VN data corresponds to general government debt (central government for PE) and private debt (loans and debt securities) for 2022. For stock market capitalization, data are as of 2020, except for AR, 2019 and for DZ, 2018. ³ Figures for ID and TR as of 2001; for HU, as of 2002; for CN, as of 2003; for CO, as of 2005; for AE as of 2007; for CL and VN, as of 2008; and for SA, as of 2009.

Sources: Mbaye et al (2018); World Bank; national data; BIS.

EME growth slows

In per cent

Graph A.7



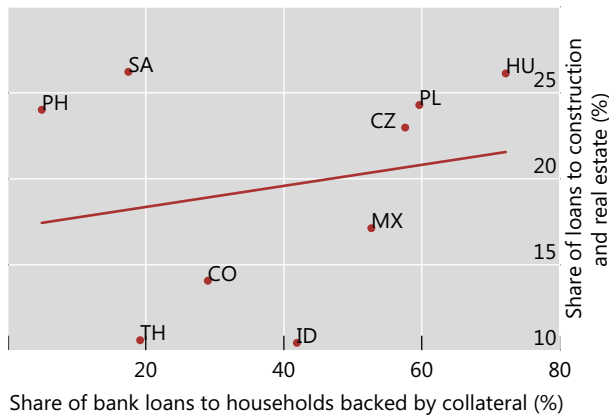
¹ Contributions to EME growth convergence relative to average AE growth. ² Statistics across 25 EMEs ratios to that of regional aggregate for seven AEs. Based on purchasing power parity 2017 international dollar. Dashed line corresponds to forecasts.

Sources: Conference Board; IMF; World Bank.

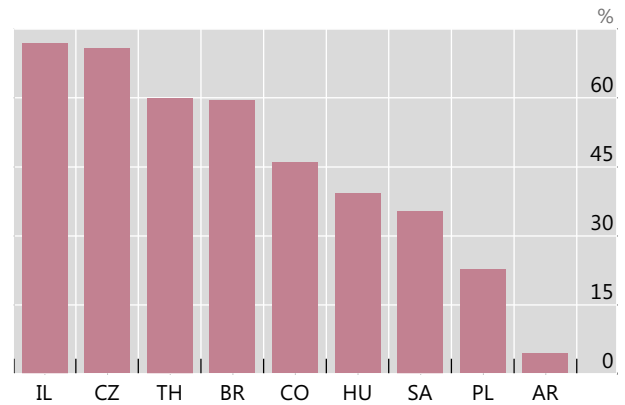
Collateral use in lending

Graph A.8

A. Bank loans to households backed by collateral and loans to construction and real estate¹



B. Share of bank loans to non-financial corporations backed by collateral



¹ Simple average from 2000–23 upon data availability for both variables.

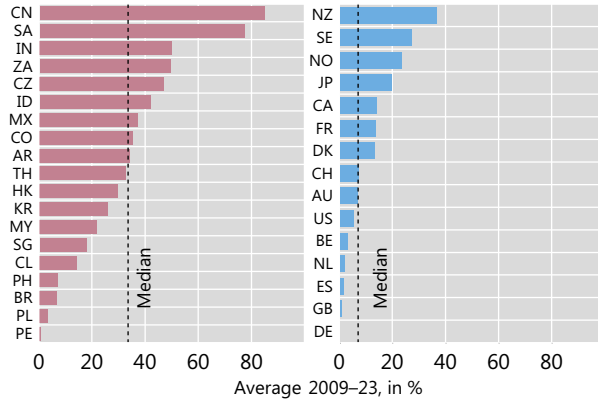
Sources: Müller and Verner (2023); BIS survey responses.

Comparing debt securities markets in EMEs and AEs

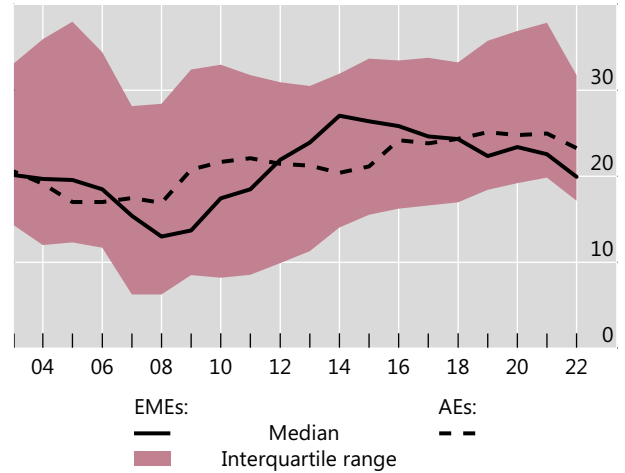
In per cent

Graph A.9

A. Share of bonds outstanding issued by state-owned enterprises¹



B. EME debt securities relative to bank credit²



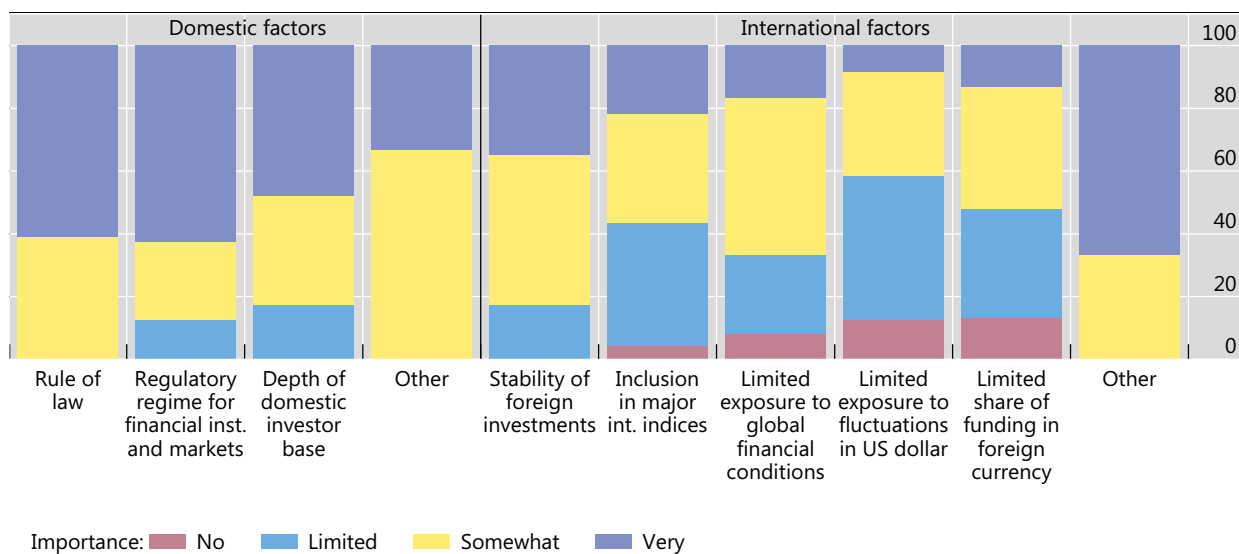
¹ Domestic issuance by nationality. "State-owned" defined as government majority-owned enterprises. ² Market capitalisation excluding top 10 companies to total market capitalization in per cent.

Sources: World Bank; Dealogic; BIS debt securities statistics.

Factors facilitating the allocation of capital for growth

As percentage of respondents

Graph A.10

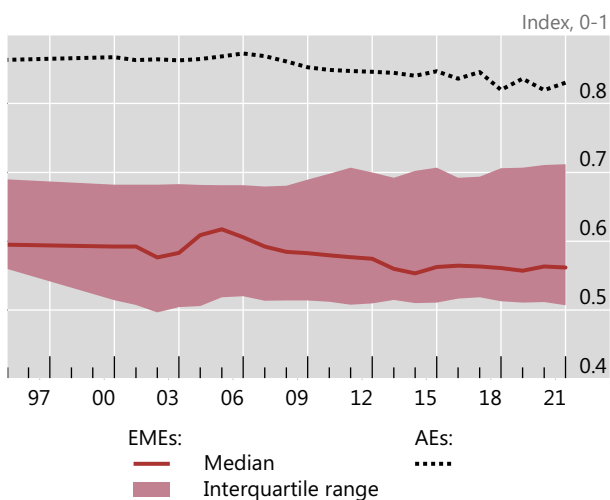


Source: BIS survey responses.

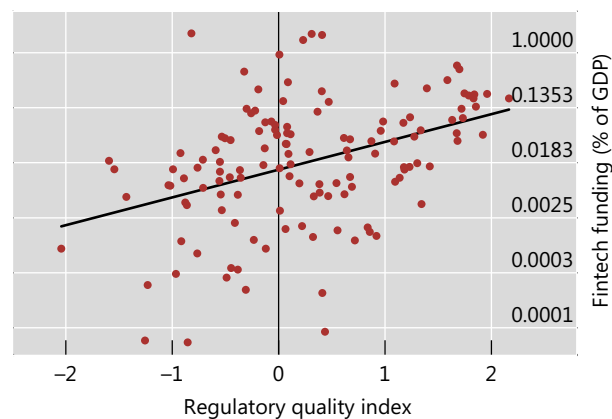
Scope to enhance institutions for growth and finance

Graph A.11

A. Limited change in EME legal systems¹



B. Fintech funding increases with higher regulatory quality²



¹ Legal system and property rights, no gender adjustment. Statistics across 17 AEs and 25 EMEs. ² Each dot corresponds to a country average over 2010–22 for 132 countries. Fintech funding to GDP is winsorised at the 1st and 99th percentiles. Fintech funding relative to GDP is shown on a logarithmic scale. Regulatory Quality captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. It gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5.

Sources: Fraser Institute; IMF; World Bank; PitchBook Data Inc.

Annex B: The inverted U-shaped relationship between finance and growth

Many studies show that financial depth plays a positive role in promoting economic growth (see Levine (2005), (2021) for surveys). Deeper financial systems can be better at allocating capital, monitoring investments, sharing risk and facilitating trade.

However, a number of studies find that at some point financial depth may weigh on growth. These studies specifically find that too much credit can be a drag on growth (eg Arcand et al (2015), Cecchetti and Kharroubi (2012), Mian et al (2021)).

A number of factors could be at play. Too large a financial system may compete for highly skilled works diverting them from more productive sectors. Credit that grows too fast increases the risk of financial crises. Large debt service burdens may weaken demand, which then weighs on growth in the long run.

To assess the relationship between finance and growth, we consider the following specification, which closely follows Cecchetti and Kharroubi (2012):

$$\Delta y_{c,t+5,t} = \alpha + \beta_1 \left(\frac{Credit}{GDP} \right)_{c,t+5,t} + \beta_2 \left(\frac{Credit}{GDP} \right)_{c,t+5,t}^2 + \beta_3 \left(\frac{Equity}{GDP} \right)_{c,t+5,t} + \beta_4 \left(\frac{Equity}{GDP} \right)_{c,t+5,t}^2 + \gamma X_{c,t+5,t} + \theta M_t + \varepsilon_{c,t}$$

where $\Delta y_{c,t+5,t}$ is the growth rate of GDP per worker between year t and $t + 5$ in country c . Financial depth is measured by two variables: first, total credit to the private non-financial sector (private credit in short) and, second, equity market capitalisation. Both variables are averaged between year t and $t + 5$ in country c and scaled by GDP. The squared terms for credit and equity market size are meant to capture any non-linearities in the relationship with these variables. X is a vector of control variables averaged between year t and $t + 5$ in country c : government consumption to GDP; inflation; and trade openness. M represents control variables at the beginning of the period that capture convergence forces: log level of per capita GDP; and the size of the capital stock or level of TFP. The estimation is based on an unbalanced sample of 59 countries between 1975 and 2020. Each observation is a non-overlapping five-year window.

The estimation results indicate the existence of an inverted U-shaped relationship between private credit to GDP and growth. Consistent with the positive benefits of financial depth, at moderate levels of credit an additional unit of credit is associated with stronger growth in GDP per worker (Table B.1, column (1)). However, the negative coefficient on the square of credit to GDP shows that at some point, more credit starts to detract from growth. The estimates suggest that private credit to the private sector starts to exert a negative effect on growth when it reaches around 130% of GDP.

Greater equity market depth does not appear to be a drag on growth at present. Although equity market size also displays an inverted U-shaped relationship, with a positive coefficient on equity market capitalisation and a negative coefficient on its square in column (2), the turning point is much higher, at just under 500% of GDP. All EMEs, apart from financial centres, have far smaller equity market capitalisations. Column (3) shows that these results do not change when including both credit and equity in the same regression.

The relationship between finance and growth

Table B.1

	GDP-per-worker growth ¹			
	(1)	(2)	(3)	(4)
Credit/GDP ¹	0.0815** (0.0251)		0.0483* (0.0238)	0.0508* (0.0252)
Credit/GDP squared ¹	-0.0310*** (0.0079)		-0.0192** (0.0077)	-0.0193** (0.0082)
Equity mkt cap/GDP ¹		0.0338*** (0.0039)	0.0290*** (0.0043)	0.0272*** (0.0048)
Equity mkt cap/GDP squared ¹		-0.0037*** (0.0003)	-0.0029*** (0.0003)	-0.0028** (0.0004)
Log real GDP per worker ²	-0.0208* (0.0077)	-0.0212*** (0.0060)	-0.0229** (0.0076)	-0.0236** (0.0077)
Government consumption/GDP ¹	-0.0011 (0.0006)	-0.0007 (0.0005)	-0.0008 (0.0006)	-0.0008 (0.0006)
Inflation ¹	0.0016* (0.0009)	0.0015* (0.0007)	0.0017* (0.0008)	0.0018* (0.0008)
Trade openness ¹	0.0261*** (0.0051)	0.0244** (0.0073)	0.0233** (0.0070)	0.0237** (0.0072)
Financial crisis ³				-0.0308*** (0.0087)
R-squared	0.158	0.169	0.181	0.186
Observations	187	187	187	187

¹ Non-overlapping five-year average. ² Start of period level. ³ At least one financial crisis within the five-year window.

Driscoll-Kraay standard errors in parenthesis. *, **, *** denote significance at the 10%, 5% and 1%, respectively. Similar results obtained with country and country-year fixed effects.

Financial crises detract from growth, but they do not fully explain the U-shaped relationship between credit and growth. Column (4) includes a dummy variable indicating whether there was a crisis within the five-year window. The negative coefficient suggests that a financial crisis reduces annual GDP growth by around 3 percentage points on average. However, the point estimates on credit and equity to GDP and their squares remain broadly unchanged.

Annex C: Credit expansions and medium-run growth

To examine the effect of credit expansions on medium-run growth, a panel regression similar to Mian et al (2017) is estimated:

$$\Delta_3 y_{it+3} = \alpha_i + \beta_{hh} \Delta_3 HH\_debt_{it-1} + \beta_{nfc} \Delta_3 NFC\_debt_{it-1} + \beta_{gov} \Delta_3 Gov\_debt_{it-1} + \gamma X'_{i,t-1} + \varepsilon_{i,t}$$

In the equation above, $\Delta_3 y_{it+3}$ denotes the change in log real GDP from year t to $t + 3$. $\Delta_3 HH\_debt_{it-1}$, $\Delta_3 NFC\_debt_{it-1}$ and $\Delta_3 Gov\_debt_{it-1}$ are the changes in household, non-financial corporate and government debt ratios, respectively, from four years ago to last year.¹ The vector $X'_{i,t-1}$ includes three lags of the dependent variable as additional control variables. α_i are country fixed effects.

The equation is estimated with annual data for 78 AEs and emerging market and developing economies (EMDEs) for an unbalanced panel. The sample runs from 1964 to 2019, depending on data availability. For several EMDEs, the series are much shorter.

The results suggest that household debt expansions are associated with lower real GDP growth in the medium term (Table C.1). In particular, when the debt ratios of all three sectors are included (columns (4) and (5)), only the coefficient on household debt remains statistically significant at conventional levels. While corporate debt is statistically significant when included on its own or together with household debt (columns (2) and (3)), this result is not robust to including additional controls. The coefficient estimate on household debt implies that a one standard deviation increase (6.5 percentage points over three years) in household indebtedness is associated with a 1.4 percentage point decline in real GDP growth over the next three years.

Taken together, these results – especially the role of household debt in dampening medium-run growth – are similar to Mian et al (2017). However, they are obtained here using a larger sample of economies.

Debt expansion and medium-term growth					Table C.1
	(1)	(2)	(3)	(4)	(5)
Δ_3 Household debt ($t - 1$)	-0.213** (0.082)		-0.198** (0.081)	-0.211** (0.081)	-0.221*** (0.081)
Δ_3 Corporate debt ($t - 1$)		-0.035** (0.014)	-0.016* (0.008)	-0.011 (0.008)	-0.011 (0.007)
Δ_3 Government debt ($t - 1$)				-0.027 (0.030)	-0.019 (0.036)
Distributed lag in Δy	No	No	No	No	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes
R-squared	0.237	0.220	0.239	0.225	0.228
Observations	1,859	1,857	1,854	1,723	1,706

Robust standard errors clustered by country and year in parentheses. *, **, *** denote significance at the 10%, 5% and 1%, respectively.

¹ Household and non-financial corporate debt includes both loans and debt securities. Government debt refers to only central government debt due to data availability. For the part of the sample where both series are available, the correlation between central and general government debt is high, at 0.93.

Annex D: Influence of credit on misallocation within sectors

The dispersion of revenue-based total factor productivity across firms is a key measure of resource misallocation (see Hsieh and Klenow (2009)). If this productivity differs between two firms, then transferring one unit of capital or labour from the lower-productivity firm to the higher-productivity firm would increase aggregate output without using additional resources.² Dispersion in the level of revenue-based total factor productivity across firms captures misallocation because it shows that there are gains from transferring capital or labour until productivity of the two firms are equalised.

Due to potential differences in sectoral demands, researchers typically use the dispersion of within-sector revenue-based total factor productivity as a cleaner measure of misallocation. This helps to avoid conflating misallocation with shifts in demand towards lower-productivity sectors. While this measure is a useful guide to misallocation, it is not perfect. It fails to capture increases in the size of more productive firms that would increase aggregate productivity of the sector, even if the dispersion of productivity increases. Misallocation will also be mismeasured if firms face different cost and demand conditions (Haltiwanger et al (2018)).

To measure within-sector productivity dispersion, we estimate firm-level revenue-based total factor productivity in a sample of 629,247 firm-year observations in 15 sectors across 55 countries. Due to data availability, firm-level productivity is estimated between 2005 and 2021.

The estimates of firm-level productivity show rising dispersion of within-sector productivity in EMEs. Notably the increase in within-sector dispersion for sectors at the 75th percentile has been larger in EMEs than in AEs since 2005 (Graph 6.A). This suggests that the misallocation of capital and labour may have increased.

Credit may lead to capital and/or labour misallocation. Gopinath et al (2017) find that credit frictions in southern Europe resulted in capital misallocation. This was because, as interest rates declined, larger low-productivity firms were able to borrow and invest, while credit frictions constrained the expansion of small higher-productivity firms.

To test the potential influence of credit on misallocation, we consider the following regression specification:

$$\begin{aligned} & \text{Standard deviation of within sector productivity}_{cst} \\ &= \beta_1 \Delta \frac{\text{Credit}}{\text{GDP}}_{ct} + \beta_2 \Delta \frac{\text{Sector Credit}}{\text{GDP}}_{cst} \\ &+ \beta_3 \text{Standard deviation} \left(\Delta \frac{\text{Sector Credit}}{\text{GDP}}_{cst} \right)_{ct} \\ &+ \gamma X_{cst} + \mu_c + \delta_s + \varepsilon_{cst} \end{aligned}$$

where the standard deviation of within-sector productivity in country c , sector s and year t is based on firm-level productivity estimates following Kharroubi et al (2023a). To test the potential influence on credit, we consider three variables. The first is the annual change in credit to the private non-financial sector as a share of GDP in country c and year t . This captures aggregate credit conditions. The second variable is the annual change in credit to the specific sector as share of GDP. Finally, the third variable is the standard deviation of the annual change in sectoral credit to GDP

² As Hsieh and Klenow (2009) show, revenue-based total factor productivity is proportional to the geometric average of the marginal revenue products of capital and labour.

within a country in a given year. This captures the heterogeneity of sectoral credit growth in a country, ie if one or a few sectors are experiencing stronger credit growth than others.

The regression also includes a number of control variables, drawing on Kharroubi et al (2023). The level of the aggregate credit-to-GDP ratio, and the level of sectoral credit to GDP help to distinguish credit expansions from the level of credit relative to output. Government consumption to GDP captures the possibility that, as credit booms increase tax revenues, the size of the government sector – which generally features lower productivity growth – rises. The level of inflation controls for inflation-induced misallocation, given that higher inflation increases the noise that agents receive about relative prices. Trade openness captures productivity changes across sectors that result when those with comparative advantage benefit from trade-driven reallocations. Finally, a dummy variable for financial crises controls for misallocation driven by financial stress.

The results show that credit matters for misallocation (Table D.1). In particular, column (4) shows that sectors with particularly strong credit growth experience misallocation. In addition, greater dispersion of credit growth across sectors within a country is associated with greater capital misallocation. That is, periods when credit growth is particularly rapid in some sectors but less so in others are times when misallocation rises.

Dispersion in credit growth across sectors associated with resource misallocation					Table D.1
	(1)	(2)	(3)	(4)	(5)
Δ Total NFC credit/GDP	0.0971 (0.1663)			–0.0852 (0.0999)	–0.1178 (0.1214)
Δ Sector credit/GDP		0.9111** (0.3912)		1.205*** (0.3199)	1.838*** (0.4972)
Standard deviation of Δ Sector credit/GDP in a country			3.239*** (1.026)	3.260*** (1.034)	2.052 (1.188)
Additional controls	Yes	Yes	Yes	Yes	Yes
Fixed effects	Country, sector	Country, sector	Country, sector	Country, sector	Country, sector
Sample	All countries	All countries	All countries	All countries	EMEs only
R-squared	0.0033	0.0059	0.0066	0.0068	0.0094
Observations	3,783	3,783	3,783	3,783	2,122

Driscoll-Kraay standard errors in parenthesis. *, **, *** denote significance at the 10%, 5% and 1% respectively. Similar results obtained with country-sector-year as well as only country and no fixed effects.

The economic effect of credit on misallocation is relatively modest (Graph 6.B). For example, a two standard deviation in the dispersion of credit growth across sectors is associated with an increase in within-sector productivity dispersion of around 10%. Overall, the analysis suggests that while credit may influence misallocation, many other factors are also likely to be relevant.

Annex E: Long-run growth in EMDEs and the G7 financial cycle

To evaluate how the sensitivity of domestic GDP growth to the G7 financial cycle (G7FC) affects long-run growth in emerging market and developing economies (EMDEs) (Graph 11.B), an analysis similar to Banerjee and Mian (2023) is undertaken.

In the first step, the sensitivity of domestic growth to the G7FC is estimated. For each of the G7 economies, the domestic financial cycle is obtained as the medium-term cycle in real credit, the credit-to-GDP ratio and real house prices, using a band-pass filter. To obtain a proxy for G7FC, a simple average is taken across the G7 domestic financial cycles. Then the sensitivity of EMDEs' GDP growth to the G7FC is obtained by regressing, for each EMDE, domestic real GDP growth on the G7FC, the latter expressed in first difference form. From this simple bivariate regression, the coefficient on $\Delta G7FC$ is taken as a measure of the sensitivity of domestic growth to the G7 financial cycle.

In the second step, the analysis uses the sensitivities to G7FC, obtained from the first step, in a growth regression. The following model is estimated for a cross-section of EMDEs:

$$\Delta y_i^{ave} = \alpha + \beta G7FC_i^{sens} + \gamma X'_i + u_i$$

where Δy_i^{ave} is the average GDP growth per capita over the sample for economy i , and $G7FC_i^{sens}$ is the sensitivity to the G7FC for economy i (as estimated in the first-step regression). X contains as control variables the starting level of GDP per capita, to capture convergence, as well as the average investment-to-GDP ratio. The analysis uses data for 126 EMDEs for 1995–2022 or as available.

Graph 11.B shows the results for EMDEs with different degrees of macro-financial fundamentals. In particular, it shows the coefficient on the sensitivity to the G7FC for different groups of EMDEs: those below/above the EMDE median in terms of FX reserves, the current account balance and remittance inflows, all expressed as average ratios to GDP over the sample.

The results suggest that long-run growth in EMDEs with lower buffers has been somewhat dampened by the vagaries of global finance. In particular, Graph 11.B shows that the sensitivity to the G7FC enters the growth regression in a negative and statistically significant way only for EMDEs with lower buffers (green lines). As an example of the magnitude, in the group of EMDEs with lower FX reserves, a one standard deviation increase in the sensitivity to the G7FC is associated with around 0.5 percentage points lower growth in the long run. As a caveat, the result is only weakly statistically significant. For EMDEs with larger buffers, there is no statistically significant association between sensitivity to the G7FC and long-run growth (red lines in Graph 11.B).

Bank of Algeria's short note for the BIS Annual Meeting of Emerging Market Deputy Governors

The changing nature of the financial system: implications for economic resilience and long-term growth

Bank of Algeria

While the financing of infrastructure and long-term growth had dominated Algeria's financial scene since 2002, a resurgence of twin deficits following the 2014 oil shock led to the use of so-called "unconventional"¹ financing to support the economy. This already vulnerable financial situation was further weakened by the double shock of the Covid-19 pandemic and the collapse in oil prices. This led to the emergence of new refinancing programs, such as the Special Refinancing Program, to support the national economic recovery program launched in June 2020. These factors, combined with internal political developments and recent geostrategic events, have triggered changes in Algeria's financial landscape.

Changes to the financial landscape

Key events include the adoption of the new *Monetary and Banking Act* in June 2023, which aims to adapt the legal and regulatory framework to tackle profound economic and financial changes, as well as technical and technological challenges, and enable the opening up to new players.

In addition to strengthening the governance of the banking system, greater attention is being paid to financial stability and financial inclusion. This has been demonstrated by the creation of a Financial Stability Committee, tasked with macroprudential oversight and crisis management, and a National Payments Committee, entrusted with drawing up the draft national strategy for the development of electronic means of payment and monitoring their implementation.

Islamic finance is also gaining momentum in Algeria. A good number of banks now offer a range of products and services in line with Islamic precepts, helping to mobilize savings.

While the central role of banking intermediation in the Algerian financial system persists, with a predominance of public banks, the opening up of the capital of a public bank, namely "Le Crédit Populaire d'Algérie" in January 2024, represents a pivotal step in the transformation of the Algerian financial market. This decision is

¹ Amendment to article 45 of the Ordinance on Money and Credit, in 2017, instituting, on an exceptional basis and for a period of five (5) years, the purchase, by the Bank of Algeria, directly from the Treasury, of securities issued by the latter.

part of the ongoing reform of the financial sector, with a view to improving governance and access to financing, particularly for the private sector.

Resource allocation and long-term growth

As financial reforms progress, capital markets will become an important source of financing for long-term growth in Algeria. Indeed, a shift in the importance of banking intermediation and capital markets is essential to diversify and increase the sources of financing required for sustainable, inclusive growth. With this in mind, it is expected that the capital of a second public bank will be opened up before the end of 2024, to revitalize the Algiers stock exchange and the Algerian financial market.

This is particularly necessary in the light of the fact that several factors have limited the efficiency of Algerian banks in financing long-term growth, notably the concentration of the banking sector, which limits competition and the diversification of products and services offered. The structure of private sector companies, most of which are small, is also an obstacle to the efficient allocation of resources for financing long-term growth.

To overcome these challenges and reduce the risk of crowding out lending to the private sector, a lot of efforts have been, and continue to be, deployed. Of note is **the adoption of a new investment law, as of July 2022**, that enshrines freedom to invest as well as transparency and equality in the treatment of investments. Also, the development of an internal credit rating system for non-financial companies will enable the growth of credit to small and medium-sized enterprises in the private sector.

In the same vein, digital innovation has the potential to expand access to financing, stimulate economic growth and reduce informality in Algeria. The informal sector occupies a significant share, **another drag on the banking system's efficient allocation of resources**. In this regard, the reforms currently undertaken also aim at promoting digital innovation in Algeria's financial sector, **which will facilitate a better allocation of capital, thus boosting the country's growth potential**.

Excessive finance and resilience, long-term growth and policy measures

To ensure robust and sustainable growth while maintaining a balanced financial structure, Algeria must pursue the ongoing structural reform program. These reforms include diversifying the economy and sources of financing, promoting financial inclusion and stimulating financial markets, while also ensuring financial and macroeconomic stability.

To achieve this, it is crucial to:

- **invest in research and development**, education and training,
- improve the regulatory environment,

- encourage financial innovation,
- invest in technology and human capital,
- develop non-oil sectors,
- strengthen financial institutions, and
- adopt pragmatic and prudent fiscal and monetary policies.

In Algeria, markets with strong development potential include credit and bond markets, as well as equities and mutual funds, where significant growth is expected to be one of the outcomes of current financial reforms.

Thus, the role of the central bank, in addition to ensuring price stability, involves implementing monetary policies conducive to financial stability, regulating the banking system and overseeing payment systems, stimulating financial innovation and actively collaborating with market players. **This will also benefit from** the opportunities for long-term growth offered by digital innovations, while mitigating emerging risks.

This set of structural measures will facilitate the improvement and consolidation of a business climate conducive to the emergence of a competitive private sector in an environment favourable to sustainable and balanced territorial development.

Finally, it is noteworthy that the “optimal” financial structure is a dynamic concept that requires permanent adjustments and adaptations, depending on economic developments and conditions.

The changing nature of the financial system: implications for resilience and long-term growth in emerging market economies¹

Central Bank of Argentina

Introduction

In Argentina, the financial system is small, short-term and transactional, while largely bank-based. A key factor for financial development and intermediation has been the elusive quest for macroeconomic stability and, particularly, fostering a stable local currency in which long-term financial contracts can be denominated. As a result of successive macroeconomic crises, savings in Argentina are not channelled through the financial system, with currency substitution standing out among the system's features. This note reviews the current structure of the Argentine financial system, its recent evolution, the economic effects of its main features, and the key points looking ahead. In order to foster financial development, these include restoring fiscal and external balances as anchors of macroeconomic stability and leveraging on new technologies.

1) Financial sector structure

Argentina's domestic financial sector is small compared to other emerging market economies (EMEs), and mainly bank-based (Graph 1). **Local capital markets complement banks in providing access to financing, though the size of these markets is small**, especially in terms of financing to the private sector.² The development of domestic capital markets remains a relevant policy objective.³

The main **investment alternatives** in domestic capital markets are government bonds (with outstanding stock representing around 62% of GDP as of December

¹ Central Bank of Argentina (BCRA). Note prepared for the Meeting of BIS Deputy Governors, Basel, 18–19 March 2024. Information is current as of December 2023.

² As well as, for instance, facilitating investment diversification and the possibility of hedging.

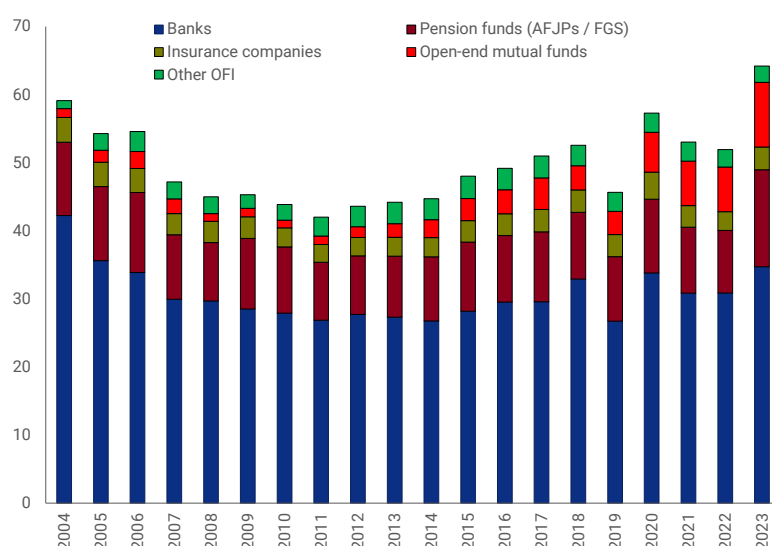
³ Note that, after registering significant volatility in both FX and government debt markets (that translated to the whole spectrum of securities) during 2018–19, by 2020 Argentina's public debt was restructured. On the other hand, several large corporations have made progress in terms of rescheduling their FX bonds since 2020. Certain new instruments have been developed in recent years (eg eCheck, trading of SME receivables – *factura de crédito electronica* — green bonds, etc) while others have been promoted (closed funds and special purpose vehicles (SPVs) related to real estate development, infrastructure funds, mutual funds related to sustainable finance, etc). The stocks of these instruments are in general negligible in terms of GDP.

2023).^{4,5} The weight of other (less liquid) alternatives, like provincial and corporate bonds, is more modest (in a 5%-7% range of GDP in both cases, including debt issued in domestic and international markets). In turn, the market capitalisation of listed domestic firms represented around 12% of GDP as of December 2023. Trade in derivatives is concentrated in USD/ARS futures/forwards and options on stocks (and the volumes are not significant).⁶

The main **institutional investors** are the FGS (sovereign pension reserve fund that manages the assets from the nationalisation of private pension funds in 2008), which represents 14% of GDP, open-end mutual funds (9.5% of GDP) and insurance companies (with a portfolio of financial assets representing around 3% of GDP).⁷ Government bonds are the securities with the highest weight in the portfolios of these investors, representing 71% of the FGS portfolio (followed by stocks, which represent 14%) and 39% of the insurance companies' portfolio (followed by investments in mutual funds and corporate bonds, with weights of 33% and 13%, respectively).

Argentina's financial sector – main players, breakdown in terms of assets % of GDP

Graph 1



Estimation based on non-consolidated assets.

Source: BCRA based on National Social Security Administration (ANSES), Sustainability Guarantee Fund (FGS), National Securities Commission (CNV), Superintendence of Insurance (SSN) and Cámara Argentina de Fondos Comunes de Inversión (CAFCI).

⁴ Outstanding bonds net of non-marketable securities and of public sector position in bonds.

⁵ All figures as of December 2023 unless otherwise noted.

⁶ Other derivatives, for instance interest rate derivatives, have a negligible volume, while CDS are not traded locally.

⁷ Before 2008, a defined contribution private pension scheme was in place. This system switched to a public defined benefit scheme in 2008, and the former private pension funds' investments were transferred to the FGS. The FGS is an Argentine sovereign pension reserve fund (public institution) with the mission of preserving capital to, eventually, help pay the benefits of the current pension scheme and meet future commitments made by the "Historical Reparation" Law (Law 27,260). Note that the FGS per se has no direct liabilities (therefore, there is no intermediation involved). For more information see: fgs.anses.gob.ar/pregunta-frecuente.

The scope of non-bank financial activities is relatively modest (aggregated other financial intermediary (OFI) assets reported represent around 12% of GDP, with open-end mutual funds acting as the main player) and relatively unsophisticated vis-à-vis the situation of developed economies or other EMEs in the region.⁸

The main non-bank financial players are traditional **capital market investment vehicles and agents** (representing almost 90% of reported OFI assets). These include mainly **open-end mutual funds** (with a portfolio of around 9.5% of GDP). Fifty-two per cent of the outstanding stock of open-end mutual funds corresponds to MMFs (money market funds, which invest mostly in bank deposits), while fixed income funds account for 31%. The remainder consist of blend funds, SME funds, infrastructure funds, equity funds, total return funds and green finance funds. The aggregate investment portfolio of mutual funds includes 54% of liquidity (usually sight deposits in banks) and time deposits, 23% of government-related fixed income, and 11% of corporate debt, among others.

Open-end mutual funds represent one of the most dynamic elements of domestic capital markets in the last decade (increasing their size from the equivalent of 2% of GDP as of December 2012 to almost 9.5% of GDP as of December 2023). In particular, **since 2018 MMFs have grown remarkably: they were on average 22% of total mutual funds in 2013–18, and doubled their share to an average of 49% of total mutual funds in 2019–23.** This was due to several factors, including an increasing demand for liquidity in a context of high volatility in domestic markets and the reprofiling of treasury bills in 2018–19 (that led to reallocation from fixed income funds to MMFs).⁹ The increasing demand for CPI-adjusted bonds has influenced the dynamics of fixed income funds (especially since 2021).

Other OFIs are:

- **Structured finance vehicles** (with a stock of less than 1% of GDP). These vehicles are mostly related to securitisation of consumer loans and credit card receivables, though there are also other types of operations (infrastructure, agribusiness, etc).
- Other OFIs also relates to capital markets, including central counterparties (CCPs), non-bank clearing and settlement agents and closed-end funds, all with a negligible GDP share (0.1–0.3% of GDP in each case as of December 2022 –last data available—).
- Total OFI assets also include different types of **non-bank loan providers**, mostly related to personal loans and consumer credit (usually small and medium-sized loans) and with a diverse (but generally low) degree of interconnection with the banking system. These include: **credit card systems** (consumer financing), with financing of 0.5% of GDP; **other credit providers** (0.3% of GDP), a heterogeneous segment, comprising for this exercise information about 200 agents that provide data to the BCRA (a significant part comprised by large

⁸ Following, for instance, the concepts used in the Financial Stability Board's annual non-bank financial intermediation (NBFI) monitoring exercise, OFIs include all non-bank entities except pension funds and insurance companies.

⁹ While not the main factor, the presence of e-wallets that started to offer their users the possibility of investing account balances in MMFs partially explains this trend. For instance, the main domestic e-commerce fintech (that also offers payment solutions) had started to do this by 2018.

retailers, while other types of credit providers included in this category are non-bank loan providers – mostly personal and consumer loans – online personal loan providers and microfinance entities); and **credit unions**, with a stock of financial assets that amount to 0.3% of GDP (in this last case, data as of December 2022).¹⁰

2) Banking sector: main features and recent evolution

The Argentine financial system's structural characteristics help keep systemic risks contained: (i) limited credit to private sector depth in the economy; (ii) largely traditional financial intermediation (with low relevance of complex transactions and short-term bias); (iii) relatively high coverage margins (liquidity, provisions and capital); (iv) low interconnectedness among financial institutions; and v) low foreign currency credit risk given regulatory measures taken after the demise of the currency board in 2002. **The regulatory and supervisory framework is in line with international standards and best practices.**

In recent years, the evolution of the banking system reflects fiscal and monetary interactions. **The primary fiscal deficit reached almost 6% of GDP during the pandemic, ranging between 2 and 3% of GDP in the following years. With limited access of the government to sovereign debt markets, direct and indirect monetary financing from the central bank was increasingly used to cover the fiscal deficit.** Direct financing involved temporary loans and the transfer of central bank profits. Indirect financing took place through central bank purchases of government bonds in the secondary market.

Much of the monetary expansion to finance the National Treasury was sterilised through the issuance of BCRA bills (remunerated liabilities). Moreover, remunerated liabilities also continued to grow endogenously through the rising interest rate. All this led to remunerated monetary liabilities reaching ARS 24.8 trillion as of November 2023, almost three times the monetary base, and generating an annualised quasi-fiscal deficit close to 10% of GDP at the end of 2023 (Graph 2).

The demand for loans – weakened by the situation of the economy – competed with the issuance of the BCRA's remunerated liabilities, so private credit found little room to develop. Commercial banks started to act less and less as financial intermediaries, losing their role as agents that take deposits and provide credit to the private sector. The monetary financing of fiscal deficits and their subsequent sterilisation crowded out private credit, which reached a historical minimum of 7% of GDP by end-2023.

¹⁰ In recent years a fintech segment has started to emerge (internet-based lending, P2P lending schemes and crowdfunding platforms). Since data about this segment were limited and heterogeneous, efforts were made to monitor their evolution. Fintech agents are included in the "other credit providers" aggregates. This is still a small (though dynamic) segment.

Central bank's remunerated liabilities – as percentage of GDP

Graph 2

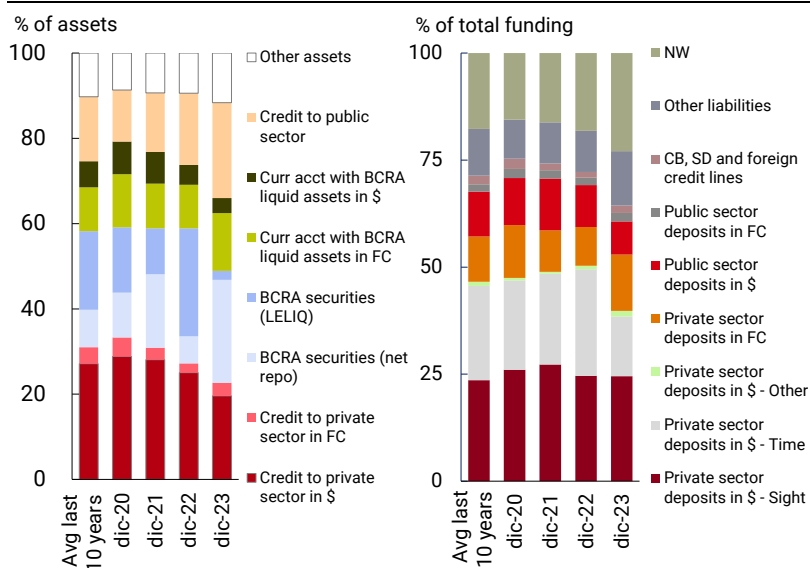


As a result, the **banking system's balance sheet** has shown an increase in the relative share of the BCRA's instrument holdings (mostly net repo for the BCRA) and loans to the public sector (Graph 3). Liquid resources (including monetary regulation instruments) accounted more than 43% of assets in December 2023.

Composition of assets and total funding

Financial system – share in percent

Graph 3

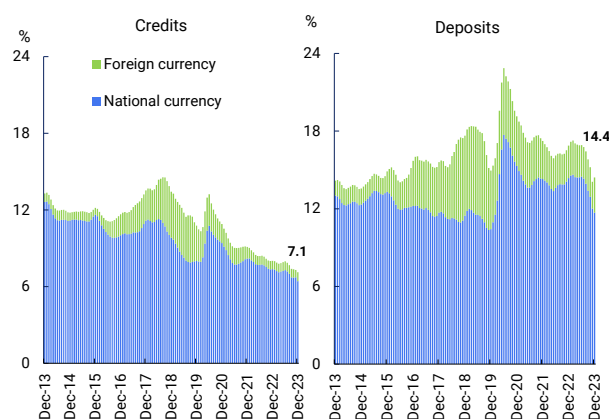


Following weak performance of financial intermediation activity, the stock of credit in domestic currency to the private sector reduced its share in total assets, accounting for approximately 19.6% in December 2023 (-7.6 pp in comparison to the average of the last 10 years).

With regard to **funding sources**, total deposits (in domestic and foreign currency) accounted 62.7% of total funding as of December 2023. Private sector deposits in pesos stood at 39.8% of total funding, below the average of the last 10 years. The remaining funding of the ensemble of financial institutions consisted in net worth (22.9%; +5.2 pp compared to the average of the last 10 years) and, to a lesser extent, in foreign credit lines, corporate bonds and subordinated debt, which remained small (only 1.7% of the total).

The depth of the financial system remains limited (and is decreasing; Graph 4), well below credit and deposit levels of previous years, and those of other economies (Graph 5).

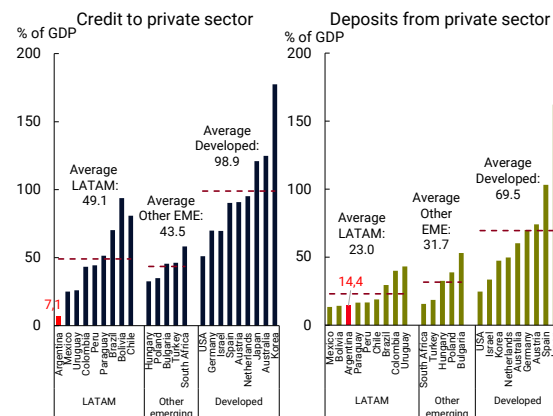
Financial system intermediation as a percentage of GDP – private sector



Quarterly averages of both the numerator and denominator are considered.

Source: BCRA, INDEC.

Financial system intermediation as a percentage of GDP – international comparison



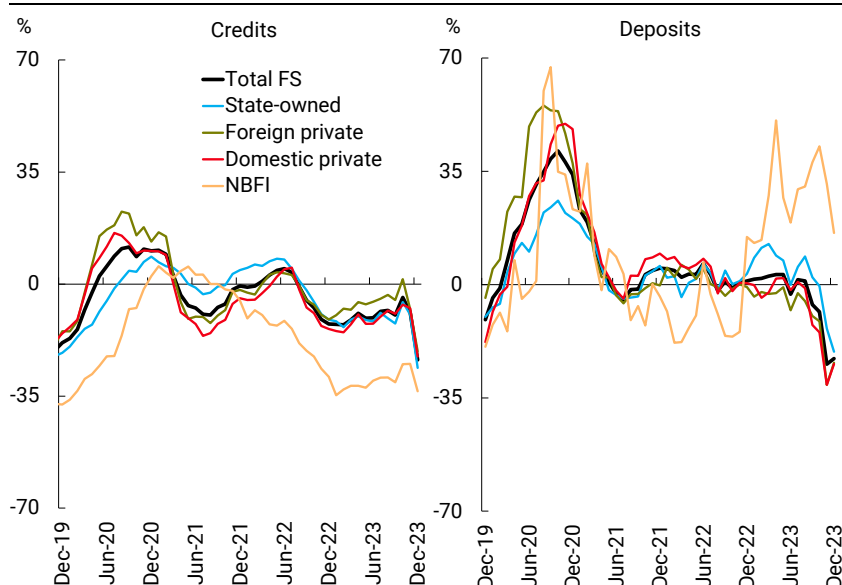
Sources: BCRA; IMF, International Financial Statistics; INDEC.

Financial intermediation with the private sector has been weak in recent years (Graph 6). Financing in pesos to the private sector has dropped 23.7% year on year in real terms. This credit performance was widespread across all groups of financial institutions and all credit segments, with commercial lines showing the smallest relative drop (-19.7% in real terms). The real stock of deposits in pesos from the private sector accumulated a 22.8% drop year on year in December 2023.

Financial system intermediation – private sector

Year-on-year variation in real terms, in per cent

Graph 6



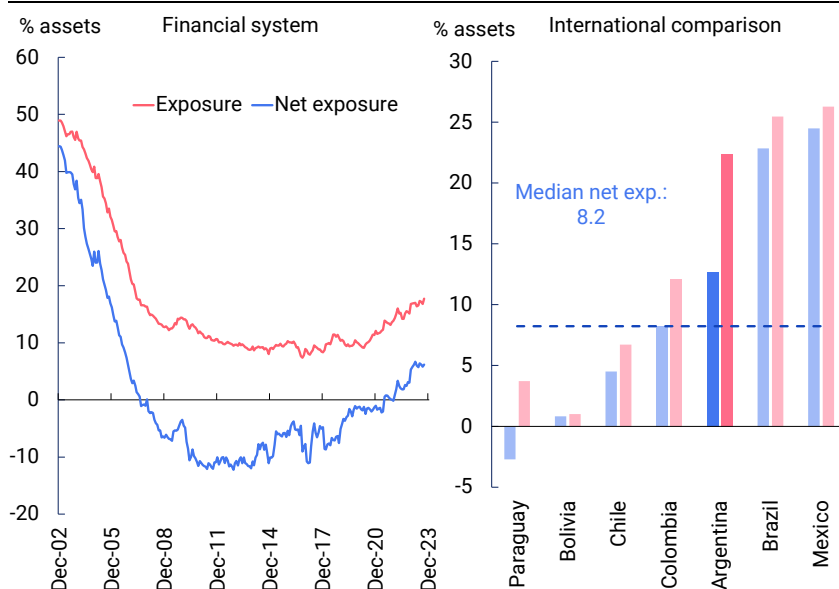
Not seasonally adjusted. Commercials include overdraft, promissory notes and leasing. Real guarantee: mortgages and pledge-backed. Consumption: personal and credit cards. Capital adjustments are included in each segment. The total also includes accrued interest.

Source: BCRA.

As previously noted, **the exposure of the financial system to the non-financial public sector has increased in recent years**, standing at 22.4% in December 2023 (+11.1 pp compared to the average of the last 10 years). Taking into account the funding obtained by the financial system from the public sector (through deposits), this indicator reached 12.7% of total assets on aggregate. This level is above the median of other economies in the region (8.2% for the median, Graph 7). Since the local crisis of 2001–02, all financial institutions must verify regulatory limits on financing to the non-financial public sector (for each level of government and for the total), set according to the entity's regulatory capital and total assets.

Credit to the public sector and public sector deposits in terms of financial system assets

Graph 7



Exposure: (Position in government securities (not including BCRA securities) + Loans to the public sector) / total assets. Net exposure: (Position in government securities (not including BCRA securities) + Loans to the public sector – Public sector deposits) / total assets. Public sector includes all jurisdictions (national, provincial and municipal). Data to December 2022, except Argentina, as of September 2023.

Sources: BCRA; IMF, International Financial Statistics.

The ratio of non-performing loans to the private sector reached 1.9% at the beginning of 2024, falling 1.3 pp in a year-on-year comparison, standing below the local average of the last 10 years and the average of Latin American countries (3%).¹¹ The performance was explained by the corporate financing segment, mainly due to the effect of the transfer of non-performing credit (defaulted 5 years ago) to off-balance sheet accounts. **Provisions** accounted for 3.6% of lending to the private sector and 191% of non-performing loans in early 2024.

Given the regulatory measures taken after the abandonment of the convertibility regime in 2002, there is **low foreign currency credit risk**. Foreign currency lending to the private sector and deposits remains limited (Graph 8). The stock of loans to the private sector in foreign currency accounted for 13.5% of total loans to the private sector in December 2023, standing below the levels of the late 2010s and 2000s. **Macprudential** regulations limit the application of deposits in foreign currency only to debtors whose income is correlated with the exchange rate and define that deposits in foreign currency not applied to loans are kept in available accounts at the BCRA. In turn, the stock of deposits in foreign currency totalled 25% of private sector deposits in December 2023, standing above the level of December 2020, but below the value of December 2010.

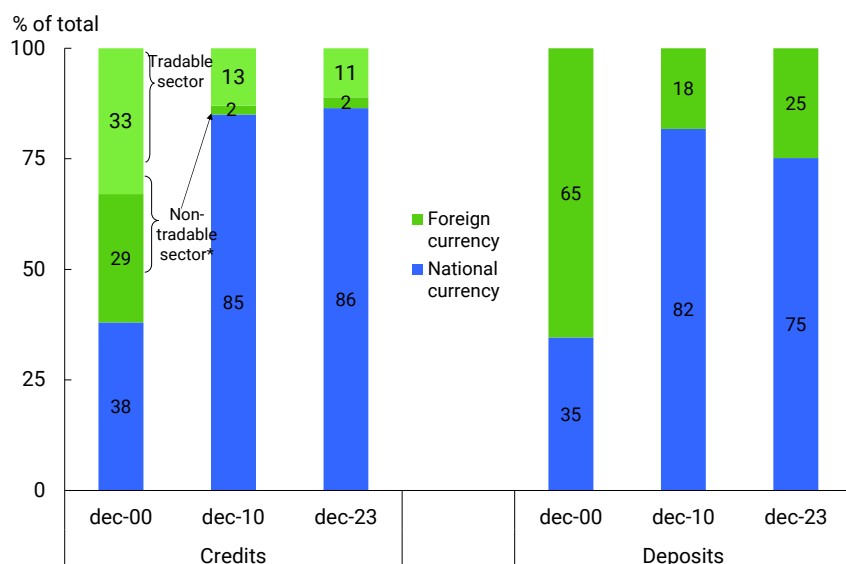
The banking system as a whole continues to operate with high liquidity margins. The aggregate banking system's broad liquidity stood at 88.6% in terms of

¹¹ Average for the last information available in the IMF's *Financial Soundness Indicators* (IMF FSI) of the following countries: Bolivia, Brazil, Chile, Colombia, Mexico, Paraguay and Peru.

total deposits in December 2023 (88.5% for items in pesos and 88.7% for those in foreign currency).¹²

Financial intermediation with the private sector by currency Financial system

Graph 8



Non-tradable sector financing estimation considers loans in foreign currency to households, construction sector, gas, water, electricity and other services.

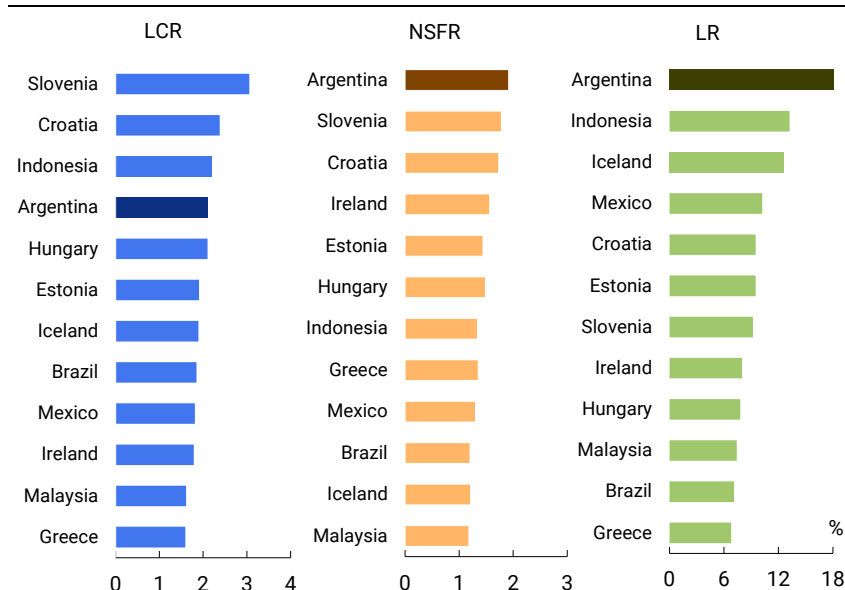
Source: BCRA.

Liquidity ratios defined by Basel Committee recommendations – the Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR) have also remained high at the aggregate level, above the minimum required by local regulations and those included in international standards (Graph 9).

Capital ratios are standing at high levels. In recent years the regulatory capital (RC) for the aggregate financial system has increased in terms of risk-weighted assets (RWAs), standing at 32.5% in December 2023. Common Equity Tier 1 – with greater capacity to absorb potential losses – explained 98% of the RC, standing above the average of other countries. Additionally, there was high compliance with the additional regulatory capital buffers by institutions in the last few years.

According to the definition of the **Basel Committee's guidelines, the leverage ratio (LR)** has remained sizeably above the minimum requirements, reaching 18.3% for the financial system (Graph 9). This ratio has kept exceeding – on average – the ratios observed in other countries.

¹² Takes into account the stock of liquid assets, concepts included in compliance within the minimum cash regime and BCRA instruments, in both domestic and foreign currency items.



Latest available information.

Sources: Central Banks; IMF, Financial Soundness Indicators; and BCRA.

3) The banking system's features and implications for financial stability, growth and monetary policy

The main characteristics of the Argentine banking system have an impact on financial stability, the growth potential of the economy and the transmission of monetary policy. Among its strengths, the banking system's high resilience to shocks stands out. The drought of early 2023 weighed on exports and activity, and on FX and prices. On top of this, financial and market volatility, typical of presidential election years, only added to this pressure. Indeed, FX market pressure led to higher depreciation and acceleration of (already high) inflation. Before the change of government on 11 December, the central bank had hiked interest rates several times since August, as well as devaluing the official exchange rate.

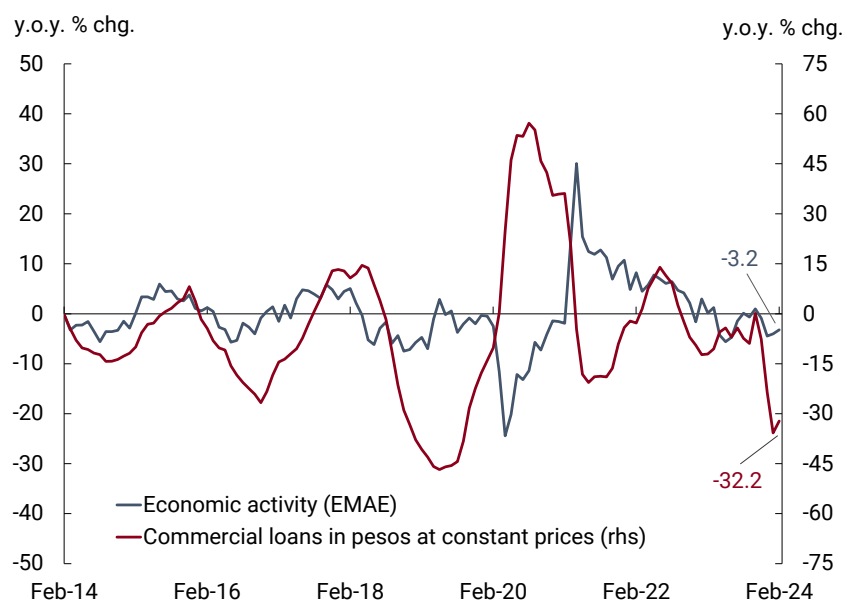
With higher domestic and global uncertainty, total financial intermediation with the private sector was weak during 2023 in a year-on-year comparison, but the financial system remained resilient. Within the prudential regulatory framework in force, **financial institutions' risk coverage margins – in terms of liquidity, provisions and capital – have been high compared to both previous years and other countries.** In fact, this is one of the main strengths of the Argentine financial system. Other aspects that limit vulnerabilities are the currently moderate exposure to private sector credit risk, and the low share of loans and deposits in foreign currency in the aggregate balance sheet.

Given these features, the Argentine financial system is expected to sustain its resilience if an adverse scenario is observed. A scenario in which risk factors materialise would have to be *highly* extreme to have a significant impact on local financial stability. The main potential exogenous risk factors in the short and medium term are the short-term impact of recent fiscal, monetary and exchange rate measures to stabilize the economy, with weaker than expected growth and decelerating but still high inflation; and a more adverse external context related to a “higher for longer” scenario, which may be amplified by global vulnerabilities and could raise new adverse external shocks. **Among the weaknesses of the financial system, low market development is notable. This feature has a negative impact on both monetary policy implementation and growth.** Low financial deepness means that maturity transformation is carried out to a very limited extent.

Reduced intermediation implies that companies and households rely on their own funds for key production and investment decisions (including real estate, which is a largely cash-driven market). It also means that credit typically follows growth. In fact, empirical evidence corroborates that Granger causality runs from GDP to credit in many EMEs, while the often-claimed causality from credit to GDP is a feature observable much less frequently – this behaviour is observed only in financially developed countries (Bebczuk et al (2011)). Indeed, the evidence for Argentina also suggests that real GDP Granger-causes credit, but not the other way around (Errea (2020) and own estimates for 2004–19; Graph 10).

Bank loans to the private sector and economic rate growth, year-on-year percentage variation in real terms

Graph 10



Sources: BCRA.

In its conventional form, monetary policy influences private sector decisions through intertemporal substitution. This allows policymakers to regulate aggregate demand and hence inflation dynamics. **However, under low financial intermediation, interest rate changes have a subdued impact on consumption.**

In shallow financial markets, maturity decisions may be compressed to less than a year, with scarcely any long-term credit to speak of. In Argentina, the average maturity of the most representative lines of loans to companies ranges from less than two months to one year. This in turn lessens the influence that monetary policy may have on aggregate demand through credit. Short bond maturities also constrain the transmission from short-term to long-term interest rates. Finally, the menu of instruments available for open market operations is also limited.

Rather than intertemporal substitution through financial intermediation, private sector decisions are about currency substitution. In other words, consumers and companies decide not so much about whether to borrow or lend at shorter or longer terms as about saving in either local or foreign currency. Financial decisions across currencies tend to dominate those over time.

The exchange rate channel of monetary policy thus becomes more important. While pass-through is endogenous and dependent on the monetary policy stance, exchange rate pass-through coefficients in Argentina continue to be four to eight times higher than in other Latin American countries. Consequently, exchange rate policy loses effectiveness to deal with negative external shocks.

Currency factors also have a financial stability dimension. As savings decisions are not so much about how to smooth intertemporal consumption over time, but about how to allocate wealth in local or foreign currency, exchange rate swings may have a much greater impact on financial stability than could be expected. In Argentina, there is a robust negative relationship between savings in local currency and FX volatility.

For the reasons just outlined, FX intervention policy becomes a relevant monetary policy tool. In a relatively small foreign exchange market like that of Argentina, very small movements can easily become amplified. This reinforces the motivation for central bank intervention when such movements are unrelated to economic fundamentals. It can – as is the case in Argentina now – serve as a complementary anchor for expectations.

4) Challenges/looking ahead

Looking ahead the main challenges for the banking system in Argentina are to increase financial deepening and intermediation. In this context, a key factor for financial development and intermediation has been the elusive quest for macroeconomic stability and, particularly, fostering a stable local currency in which long-term financial contracts can be denominated. As a result of successive macroeconomic crises, savings in Argentina (which are broadly in line with those of other Latin American countries) are not channelled through the financial system, which is short-term and transactional.

Accelerating inflation in recent years and restrictions over the FX market have only worsened the problem of underdevelopment of the financial system, to a point that stabilisation measures are imperative to lower inflation sustainably. In this context, the new administration that took office on December

2023 has decided a series of measures towards a regime that ensures macroeconomic stability by restoring fiscal and external balances.

One of the pillars is to eliminate the fiscal deficit and its monetary financing. Another one is the accumulation of international reserves. Along with the reduction of imbalances, other central elements are cutting red tape and correcting relative prices, especially the exchange rate and public utility prices. The main measures taken so far include the following:

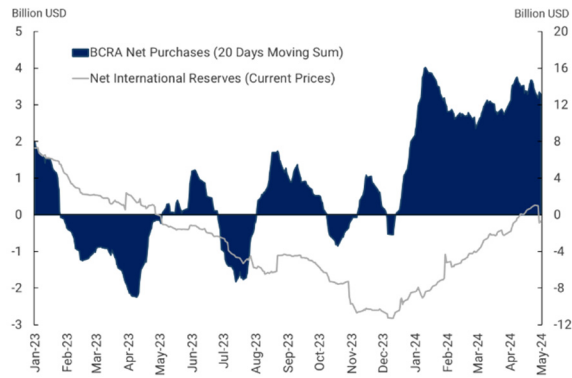
- **A fiscal consolidation program, aiming at fiscal-financial balance in 2024.** This will eliminate the fiscal deficit as one of the sources of money supply growth.
- **Distorted relative prices were corrected, especially the exchange rate, as a prerequisite to reducing inflation.** The official exchange rate was depreciated, along with a crawling peg of 2%. This is essential to restore external balance, while gradual FX depreciation serves as a complementary anchor for inflation expectations. Public utility prices have also been raised, to reduce the impact of subsidies on public accounts. Price controls have been eliminated.
- **The Central Bank's balance sheet is being cleaned up, reducing quasi-fiscal deficit generated by interest payments on its remunerated liabilities.** The monetary policy rate was changed from the interest rate of the 28 days liquidity bill (Leliq) to the one-day repos rate and was reduced several times from 133% to 40% (annual rate).
- **The debt of importers reached an all-time high of USD 58 billion towards the end of 2023 due to inconsistent and discretionary management of foreign exchange and foreign trade policy.** This problem is being solved with the issuance of voluntary instruments, the Bonds for the Reconstruction of a Free Argentina (BOPREAL), which provide deferred access to foreign currency predictably through the Free Exchange Market.
- **Some FX market restrictions have been eliminated.** Achieving fiscal and external balances, together with the strengthening of the Central Bank's balance sheet will help to progressively eliminate them.

Although the results in terms of well-being (lower inflation, economic growth, improvement in income and living conditions) will take some time, the actions implemented since December 10, 2023 are already beginning to generate some positive results.

Official FX depreciation and lower access restrictions to the FX market helped unlock foreign trade flows. This allowed for a fast reversal of the trade deficit and, together with the stop of monetary financing to the Treasury, for the BCRA to accumulate international reserves again (Graph 11). Also, a **quick agreement with the International Monetary Fund also made it possible to clear up the uncertainty surrounding disbursements** with a view to meeting principal maturities. The impact on the financial markets was immediate: the FX stabilized, the FX gap decreased and country risk fell sharply (Graph 12).

BCRA USD purchases and net international reserves – USD billion

Graph 11



Source: BCRA.

Exchange rate gaps – Parallel FX rate vs official FX rate, in percentage

Graph 12



Sources: BCRA.

The higher FX rate and the correction of relative prices (public utilities, transportation costs and other regulated prices) inevitably generated a discrete jump in the price level by late 2023. This is essentially the reflection of trends that were repressed by unsustainable regulations and interventions.

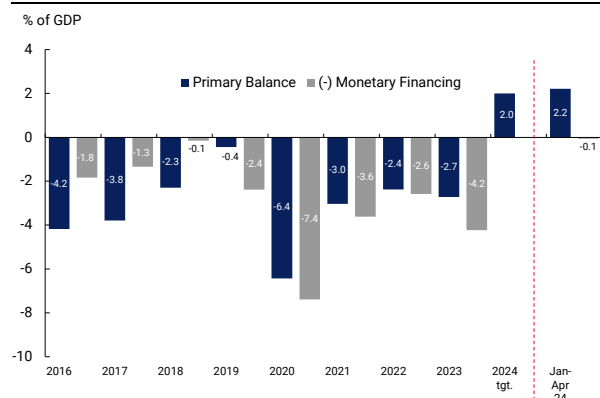
However, thanks to the firm commitment to achieve fiscal balance, the decision to stop the monetary financing to the National Treasury and the stabilization of the exchange rate, inflation expectations and inflation are already showing signs of slowing down (Graph 13 and Graph 14). It had gone from 12.8% monthly in November to 25.5% in December and then dropped to 8.8% in April. Retail inflation shows significantly lower exchange rate pass-through compared to previous experiences; and a lower trajectory than expected.

Over time, as inflation goes down, activity recovers, and the general outlook improves, money held by banks will gradually go to private sector credit, which is at historic lows (barely 4.6% of GDP). **Macroeconomic stabilisation will allow for genuine credit supply to the private sector, an essential input for financing investment and growth.** The BCRA will keep micro- and macroprudential regulation updated, based on international standards, while recognising the characteristics of the Argentine financial market. In addition, it will continue to monitor banks' performance, aiming to keep adequate levels of liquidity and solvency.

Finally, the BCRA will continue promote financial inclusion and the modernisation of payment methods: access to and use of financial services (transactions, payments, savings and credit) at a reasonable cost, in a manner which is safe for the consumer and sustainable for suppliers.

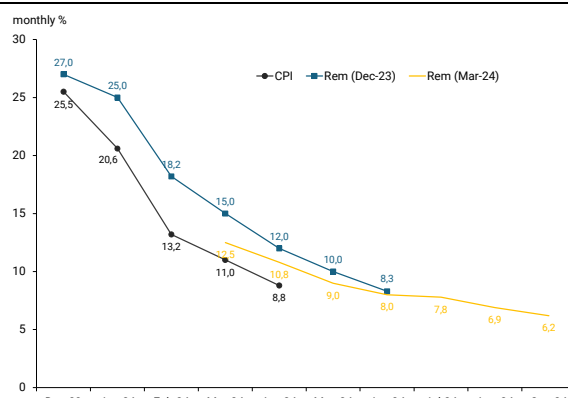
Primary balance of NFPS and deficit monetization – percentage of GDP

Graph 13



Inflation and inflation expectations - monthly percentage change

Graph 14



For 2021 SDR allocation of USD427.4 billion is not considered. For 2022 excess primary income from primary debt placements is not included. Jan to Apr-24: seasonally adjusted annualized fiscal balance (April data estimated). Monetary financing since 10th Dec-23 up to Apr-24.

Sources: BCRA and INDEC.

Sources: BCRA, Mecon and INDEC.

A key and related concern in this process is to actually develop capital markets in local currency with a broad domestic investor base. This is a challenge at multiple levels: a) broadening access to equity markets to more companies, including SMEs; b) recreating the local currency bond markets; c) fostering a strong domestic investor base. In particular, b) and c) are interrelated.

Over and above the key issue of macroeconomic stabilisation for financial market development, there are innovations that entail different “initial conditions” for policies. One of these is the development of digital technology applied to payments and credit. The ongoing digital transformation is causing a revolution in payment systems and, potentially, in different forms of money. This is reflected in an increase in the holdings and use of cryptoassets, as a phenomenon that is rapidly expanding on a global scale and that appears to have accelerated with the pandemic.

This process has a series of benefits related to improvement in local and international financial transactions in terms of cost and speed and to its decentralised operations registry technology. But without adequate regulation, these developments also pose potential risks for monetary policy, financial stability, consumer rights and the environment.

Cryptoassets (including so-called stablecoins) do not currently show significant levels of domestic adoption and use in Argentina. Nevertheless, the speed of developments and the risks and challenges they pose for users, investors and the financial system as a whole suggests the need for a precautionary approach. **Stablecoins may also entail additional financial risks, especially for EMEs.** For

instance, the existence of a stablecoin pegged to a foreign currency might lead to a relatively more volatile demand for assets denominated in domestic currency; it could even be the case that a stablecoin displaces the domestic currency for domestic transactions (or currency substitution).

Other innovations such as CBDCs also pose risks to financial stability related to international spillovers and capital flows, and to disintermediation of the domestic financial system. In the case of retail CBDCs, their implementation has to be analysed in relation to the fast payment systems in place.

Argentina has a fast payment system (FPS), which has proved successful in terms of lower payment costs and financial inclusion, by facilitating interoperability and instant payments in a secure and competitive environment.

This FPS is operated by the private sector and not by the central bank, although it operates according to the BCRA's regulation and is subject to its oversight and supervision. It was first launched in 2012, comprising push transfers only, and in later years new functionalities were incorporated. In fact, back in 2020 it was completely overhauled and renamed Transferencias 3.0: among other amendments, interoperability was reinforced and a new payment instrument – Pay with Transfer – was developed, allowing users to make instant payments with electronic wallets triggered by QR codes. Nearly 99% of adults have an account and the quantity of instant transfers per adult has grown fivefold in the last two years, while the quantity of instant transfers between payment providers and banks – indicating interoperability – has grown threefold in the last year. Instant transfers initiated in mobile devices explain the dynamic, and merchants pay a fee of 0.8% of the transaction value for an instant payment, almost three times below the cost of a credit card payment – available between eight and 18 days after.

Retail CBDCs' adoption might require significant investment in infrastructure and technology, which may not be cost-effective if an interoperable FPS is already in place, widespread and being used massively by individuals and firms. Although the issuance of an rCBDC eliminates the operational costs of physical money, its advantages for financial inclusion and formalising the economy may be larger in jurisdictions where the financial system is not so widespread and FPS are not in place.

All in all, stabilising the economy is a necessary condition to foster financial development in Argentina. At the same time, new technologies, if properly applied, can help to catalyse such development.

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The changing nature of the financial system: the Chilean experience¹

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Key takeaway

- In Chile, pension funds are the dominant force among non-bank financial intermediaries, managing 21% of financial assets (equivalent to approximately 72% of GDP), allocating around 50% of their assets internationally and being the main investor base in the sovereign bond market and a key source for banks' funding.
- As such, pension funds have contributed significantly to economic growth and financial stability by reducing sovereign interest rate and exchange rate volatility, providing currency hedging for the real sector, and providing a stable source of funding for banks' lending.
- However, significant shifts in pension fund allocations can create important challenges. Ongoing policy considerations and regulatory frameworks underscore the importance of sustaining the pension fund system's strength and addressing challenges for continued financial stability and growth.

1. Introduction

This note provides an overview of the structural evolution of the Chilean financial system from 2002 to 2022, emphasising its key components and addressing associated challenges and risks. A central focus is given to the interplay between non-bank financial intermediaries (NBFIs), particularly pension funds, and their interconnectedness with the banking sector.

The development of the financial system has been instrumental in propelling Chile's economic growth over the last three decades, with GDP per capita soaring from approximately USD 2,500 in the early 1990s to over USD 16,000 by the end of 2022. This economic growth has been significantly supported by a well-functioning financial sector providing liquidity, managing risks, and facilitating payments.

A robust regulatory framework, implemented post the 1982 banking crisis, has been pivotal in shaping the financial landscape. This framework, among other things, not only ensured stability within the banking sector but also nurtured the growth of the capital market. Critical reforms in pension systems, securities market laws and corporate regulations initiated in the early 1980s have been complemented

¹ Note prepared to be presented at the BIS meeting of Deputy Governors on 18–19 March 2024.

by successive capital market reforms, strengthening both the banking system and the broader capital market. Furthermore, during the 2000s, Chile enhanced its economic policy framework, enabling monetary and fiscal policies to act countercyclically. This included a reinforced inflation targeting framework, increased capital account integration and a more flexible exchange rate regime, which was fully adopted in September 1999 (Berstein and Marcel (2019)).

In particular, the introduction of the pension fund system marked a paradigm shift, positioning Chile as a global pioneer. This departure from conventional pension systems allowed private institutions to manage individual pension accounts, introducing a novel era of individual capitalisation.

Accordingly, pension funds emerged as a cornerstone of the financial system, managing 21% of Chilean financial assets (approximately 72% of GDP). This figure surpasses those of other emerging market economies (EMEs) and is nearly double that of advanced economies. Notably, a substantial portion of these assets is held in the form of banks' liabilities, contributing to the resilience and expansion of the financial system, and facilitating local agents' access to long-term debt at lower rates.

Pension funds dominate the bond market investor base, representing a direct source of long-term financing to the non-financial private and public sectors. In particular, and unlike those in other EMEs, the Chilean sovereign bond market relies less on non-resident investors (Alfaro and Calani (2018)).

NBFIs, encompassing pension funds (PFs), insurance companies (ICs), mutual funds (MFs) and non-bank lenders (NBLs) have become pivotal in providing financial services to households and firms. While their credit to the non-financial sector was minimal in the mid-1980s, it surged to represent around 70% of GDP by the end of 2022.

Institutional investors have acted as a stabilising factor in the national long-term debt market. By adopting a long-term investment horizon characterised by a buy and hold strategy in managing their investments, especially in the fixed income market, PFs have significantly reduced the volatility of sovereign interest rates (Álvarez et al (2019)).

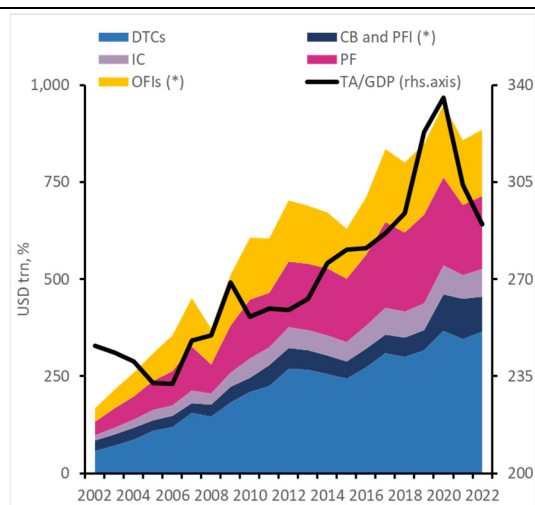
2. Financial assets overview

As of the end of 2022, financial institutions in Chile held financial assets amounting to 289.9% of GDP, marking a decline from the peak observed in 2020 (335.6%). While this places Chile's total financial assets as a percentage of GDP on par with other EMEs (348%), it is notably lower than the figures for advanced countries (768%). In terms of dollars, total financial assets reached USD 885.6 trillion by the end of 2022, reflecting a 3% increase from the previous year. This growth comes after a 10% contraction witnessed in 2021 (Figure 1). Taking a longer perspective, total financial assets as a percentage of GDP exhibit a slight increase since the early 2000s. However, this growth is relatively moderate compared to other countries, indicating a phase of consolidation following the rapid expansion experienced a decade earlier (FSB (2020)).

By the end of 2022, private NBFIs held 48.5% of total financial assets, equating to 140.7% of GDP, and were playing a central role as the primary intermediary sector in Chile. Deposit-taking corporations (DTCs), primarily banks, accounted for 41.3% of total financial assets, showcasing an increasing participation in recent years. The remaining share is collectively held by the central bank (CB; 9%) and public financial intermediaries (PFIs; 1.2%). When benchmarked against other countries, NBFIs' share of total financial assets in Chile (48.5%) falls between that of advanced economies (54.5%) and EMEs (27.8%). This represents a contraction from its pre-pandemic level (56.6%) and a decrease from its historical peak observed before the Great Financial Crisis (59.8%; Figure 2).

Chile's substantial reliance on NBFIs can be primarily attributed to the pronounced presence of PFs, which exceeds the averages in both advanced and emerging market economies. PFs account for a noteworthy 21.2% of total financial assets, with other financial intermediaries (OFIs) holding 19.4% and ICs 8%. Consequently, PFs emerge as the dominant subsector within NBFIs, holding 43.7% of NBFI assets, followed by ICs (16.4%) and OFIs (12.5%). In comparison to other economies, the share of total financial assets held by PFs in Chile surpasses the percentage observed in advanced economies (11.3%) and significantly exceeds that in EMEs (1.5%; Figure 3).

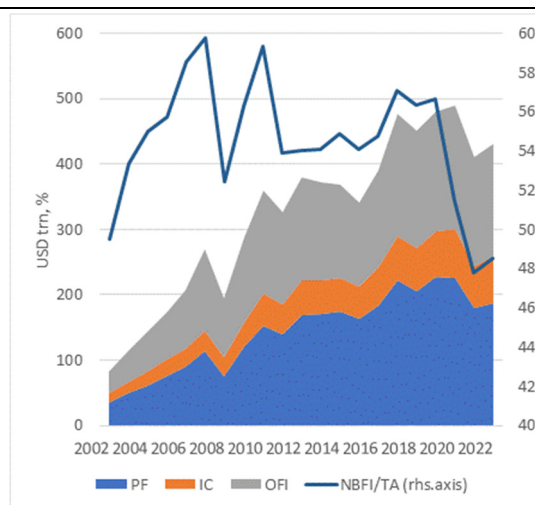
Figure 1: Chile: Total financial assets by type of intermediary



* CB and PFI: Central bank and public financial institutions. OFIs: Other financial intermediaries include mutual funds, investment funds and other funds.

Source: Central Bank of Chile, based on FSB (2020).

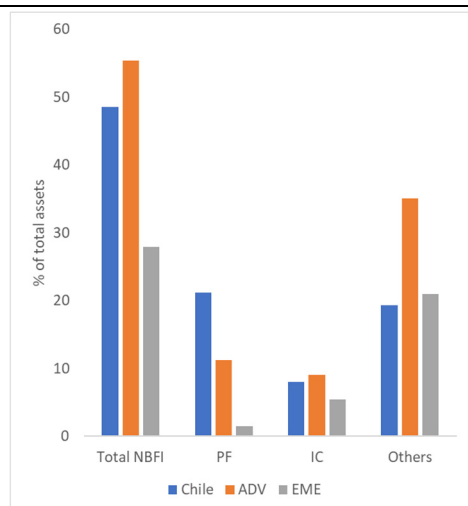
Figure 2: Chile: Non-bank financial intermediaries (NBFIs)*



* NBFIs include pension funds (PFs), insurance companies (ICs) and other financial intermediaries (OFIs).

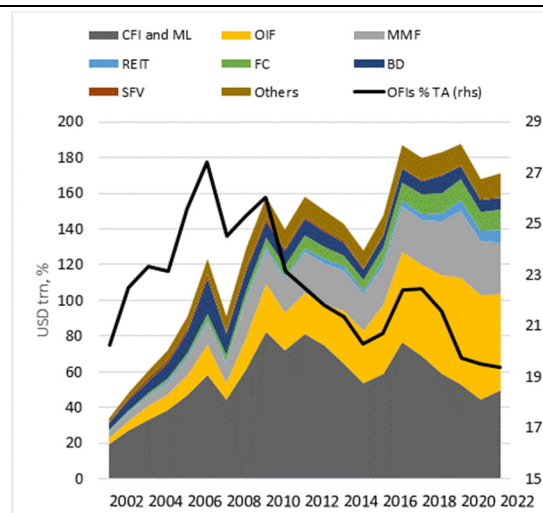
Source: Central Bank of Chile, based on FSB (2020).

Figure 3: NBFIs by type



Source: Central Bank of Chile, based on FSB (2020).

Figure 4: Chile: Other financial intermediaries (OFIs)*



(*) OFIs includes Money market funds (MMF), other investment funds (OIF), real estate investment trusts and funds (REIT), finance companies (FC), broker dealers (BD), structured finance vehicles (SFV), captive financial institutions (CFI) and money lenders (ML), and others, including non-banks credit card issuers, credit insurance, and non-profit social security benefits administrators.

Source: Central Bank of Chile, based on FSB (2020).

Chile's financial system exhibits a lesser dependence on OFIs. OFIs hold 19.4% of NBFI assets, equivalent to 56.1% of GDP, a substantially smaller proportion than observed in advanced economies (34.2%) and more closely aligned with EMEs (20.9%). The current share of OFIs in total financial assets is below its historical average (22%) and the peaks observed in 2007 (27.4%) and 2010 (26%), when the value of the equity positions in investment funds substantially increased. Presently, the sectoral composition of OFIs is characterised by a notable rise in assets held by "other investment funds" (31.3%), which can be partially attributed to tax incentives established in 2012, followed by "captive financial institutions and money lenders" (CFI and ML, 29.1%) and "money market funds" (MMFs, 16.9%). Significantly, when measured relative to GDP, all these categories have experienced a decline over the last three years.

Financial assets held by NBFIs as a percentage of GDP has experienced a decline since 2019 in Chile. The ratio of NBFI assets to GDP decreased from 182.9% in 2019 to 140.7% in 2022. This contrasts with the global trend, where NBFI assets have shown robust growth. The decline in Chilean NBFI assets can be attributed to decreases across all components of NBFI, primarily influenced by a substantial reduction in PFs' assets from 86.7% of GDP in 2019 to 61.5% in 2022. OFIs' assets declined from 69.7% to 56.1% of GDP, while ICs' assets dropped from 26.6% to 23.1% of GDP over the same period. Among OFIs' subsectors, "captive financial institutions and money lenders" experienced a decline from 22.4% to 16.3% of GDP during the 2019–22 period, and "other investment funds" also saw their assets decrease by 3.4% as a percentage of GDP in 2022 compared to 2019. However, when measured in dollar

terms, certain NBL subsectors, notably the PF, IC, CFI and ML sectors, saw increases in 2022 compared to 2021 (Figure 4).

The combined financial assets of the CB and PFIs amount to USD 90 trillion, constituting 10.2% of total financial assets. Following a peak in 2021 at USD 103 trillion, the assets held by the CB and PFIs experienced a 13% decline in 2022 compared to the previous year but still remained 4% above the pre-pandemic level. In a global context, the financial assets held by the CB in Chile, equivalent to 26% of GDP at the end of 2022, are notably lower than those of advanced economies (62%) but comparable to the figure for EMEs (33%). Conversely, the assets held by PFIs in Chile are nearly negligible at 1.2% of GDP, contrasting sharply with both advanced and emerging market economies (30% and 20% of GDP, respectively).

Although the total financial assets held by DTCs have continue to grow in dollar terms, there has been a decline in their percentage relative to GDP. As of the close of 2022, the assets held by DTCs represented 120% of GDP, reflecting two years of decreases from the peak in 2020 (130% of GDP). Banks account for 99% of the assets held by DTCs and 85% of these assets are held in the form of loans.

Credit assets amount to 190.9% of GDP, with most of the intermediation facilitated by DTCs. By the close of 2022, credit assets, encompassing loans and deposits, constituted 65.9% of total financial assets. DTCs assert dominance in this domain, holding 61.7% of these assets – equivalent to 117.7% of GDP. Other key contributors include PFs (17.2%), OFIs (11.9%) and ICs (9.2%). In comparison to global counterparts, the share of DTCs in credit assets is notably lower due to the significant involvement of PFs, which hold deposits in other financial institutions equivalent to 32.9% of GDP.

Total loan assets, amounting to 112.2% of GDP, are primarily held by DTCs (84.6%), followed by OFIs (22.7%) and ICs (4.9%). The proportion of non-banks (ICs and OFIs) holding loan assets experienced a gradual increase in the years leading up the pandemic, reaching 27.3% of total loan assets by the end of 2020. However, post-pandemic, the share of banks in loan holdings has reasserted its prominence, reflecting strategic financial policies implemented during the Covid-19 crisis (Figure 5).

While the NBL sector in Chile constitutes a modest 2% of total financial assets, its role in the consumer loan segment is notably significant. Comprising savings and loans associations (S&Ls), factoring, leasing and automobile finance companies, family compensation funds (CCAFs) and non-bank credit card issuers, the NBL segment plays a pivotal role in the consumer credit landscape, commanding a 23% share. Within this segment, factoring companies have experienced robust growth in recent years, while major retail credit card issuers have shifted their credit portfolios to the banking sector through banking services support companies. Despite its smaller scale in terms of assets, the NBL sector relies on financing from banks to furnish consumer loans, introducing additional interconnection between NBLs and the commercial banking sector (Central Bank of Chile (2021)).

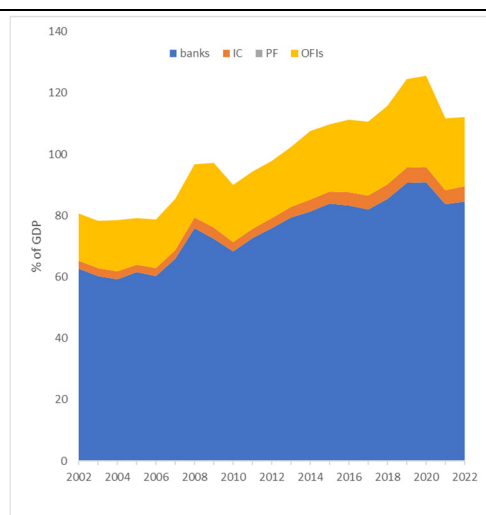
PFs in Chile exhibit a distinctive trend of allocating more than half of their assets internationally, aligning with a pattern observed in other economies reliant on commodity exports. However, Chile's PFs surpass their counterparts in both advanced economies and EMEs in terms of the extent of foreign holdings (Figure 6).

PFs in Chile maintain approximately 50% of Chilean sovereign bonds within their portfolio. Despite their historically dominant position, recent trends indicate an uptick in non-resident investors' participation in this market, peaking at almost 20% before the onset of the pandemic. Nevertheless, as of the close of 2022, foreign investors accounted for just 11% of local currency government debt (Figure 7). This figure falls below the average observed in EMEs and notably lags behind the corresponding percentages in advanced economies.

In Chile, the narrow measure for NBFIs, reflecting diverse risks contingent on their economic functions, has experienced rapid growth since the early 2000s. As of the close of 2022, the narrow NBFI measure stood at USD 63.7 trillion, constituting 7% of total financial assets. This relatively modest representation of the narrow NBFI measure can be attributed to stringent regulatory oversight of non-bank entities. Over the long term, the narrow NBFI measure has risen from 14.7% of GDP in 2002 to over 20% of GDP in 2022.

Figure 5: Loan assets by financial intermediaries

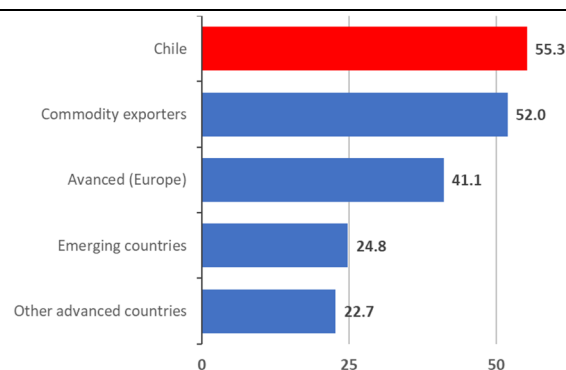
As a percentage of GDP



Source: Central Bank of Chile, based on FSB (2020).

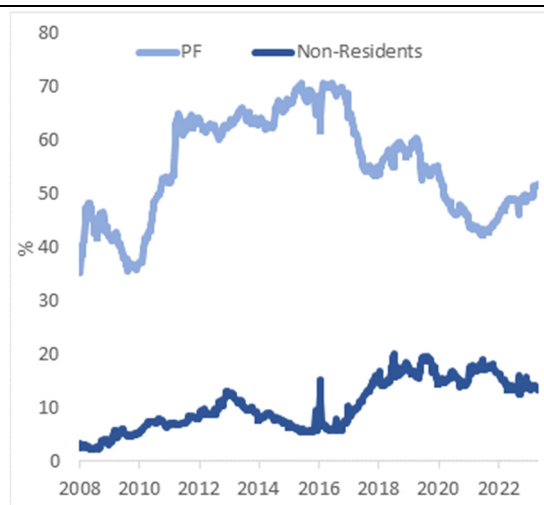
Figure 6: Pension funds' investment abroad

In per cent



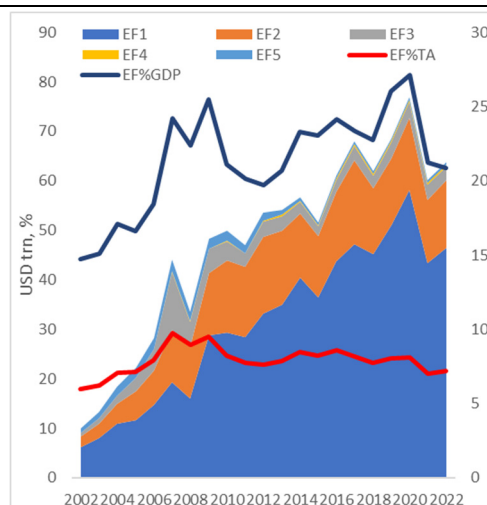
Source: OECD.

Figure 7: Sovereign bonds investor base



Source: Central Bank of Chile.

Figure 8: NBFI economic function



EF1: Management of collective investment vehicles with features that make them susceptible to runs. EF2: Loan provision that is dependent on short-term funding or on secured funding of assets. EF3: Intermediation of market activities that is dependent on short-term funding or on secured funding of client assets. EF4: Facilitation of credit creation. EF5: Securitisation-based credit intermediation and funding of financial entities.

Source: Central Bank of Chile.

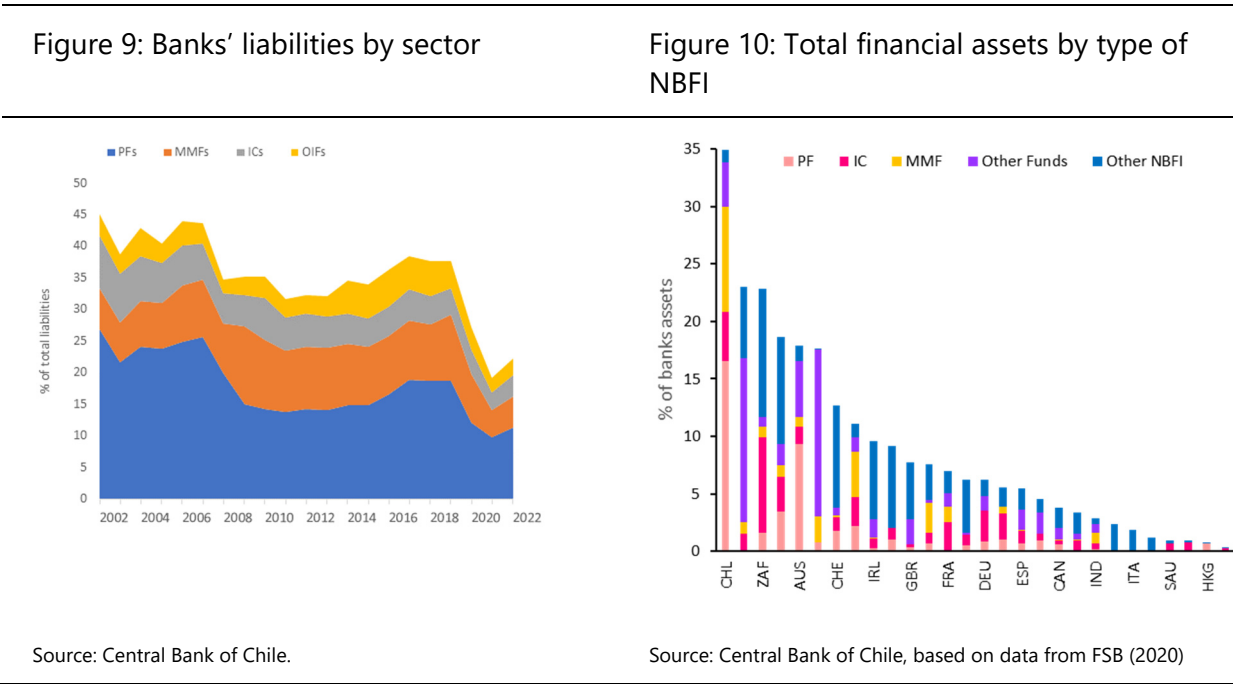
The predominant economic function within the narrow NBFI measure is the management of collective investment vehicles with features that make them susceptible to runs (EF1). These assets encompass 73% of the total narrow NBFI measure and are primarily constituted by MMFs and fixed income open-ended funds (FIFs). By the end of 2022, around 50% of MMFs' assets consisted of time deposits in the domestic banking system, indicating a recovery from the substantial decline witnessed in 2021, attributed to policy measures enacted to mitigate pandemic-induced impact. In fact, the assets held by the CB (USD 90 trillion by 2022) emerged as the largest funding source for banks, owing to special lending facilities implemented to facilitate credit flow. The second most significant economic function within NBFIs involves loan provisions reliant on short-term funding or on secured funding of assets (EF2), featuring notable contributions from finance companies (62%), a non-profit social security benefits administrator (30%) and non-bank credit card issuers (6.3%).

3. Challenges and risks

As well as their level of interconnection, the high funding exposure of banks to NBFIs (including PFs and MMFs) compared to the international average presents risks akin to traditional banks (Figures 9 and 10). While current regulations mitigate risks associated with NBFIs, their significant presence and interconnected nature raise concerns. Nonetheless, recent policies during the pandemic have

lessened banks’ exposure to these entities, as banks have increased reliance on CB funding. Having said that, continued improvements are essential to prevent potential risks from impacting the broader financial system. The significant presence and interconnectedness of NBFIs in Chile’s financial system present a vulnerability. While NBFIs contribute to stability and development, their relatively large sector in Chile raises concerns.

The substantial reliance on institutional investors, particularly MFs and PFs, as a primary source of bank funding serves as a stabilising force during normal market conditions. However, this symbiotic relationship reveals vulnerabilities when subjected to stress scenarios, marked by the abrupt reduction or non-renewal of institutional funding. The discernible sensitivity of MFs and PFs to market signals has impacted the funding conditions of certain banks, especially those of smaller stature. Recent episodes underscore their susceptibility to market dynamics, presenting funding challenges for banks, with a pronounced impact on smaller entities that remain considerably reliant on MF funding, albeit witnessing a recent decline. Furthermore, banks, irrespective of their size, may encounter heightened funding costs in scenarios where reputational risk or perceived vulnerability to excessive risk-taking is evident in the market. This escalation in funding costs poses a potential threat to financial stability. Nevertheless, the regulatory framework on bank liquidity management established by the CB emerges as a pivotal mitigating factor in addressing these funding risks.



Institutional investors, typically a stabilising force, can turn into a risk factor during periods of market stress, as witnessed in advanced economies during the Great Financial Crisis (GFC). The spectre of intensive asset liquidation, though not realised in Chile, raises concerns about potential volatility and necessitates regulatory interventions. In ordinary circumstances, institutional investors play a stabilising role by facilitating risk diversification among a diverse group of investors with varying risk appetites, acting as a buffering agent against financial shocks. However, in times of stress, the need for rapid asset liquidation due to high withdrawal levels may compel these investors to amplify market effects. The GFC showcased instances where MMFs, despite not being catalysts for the crisis, exhibited the capacity to propagate its impacts. The attractiveness of investing in MMFs lies in the stability of their amortised cost valuation. Paradoxically, this stability can induce investors to redeem their funds during stress, providing an advantage to those activating redemptions first. Although Chile has not experienced this risk, events preceding 2011 highlighted potential vulnerabilities in MMF share revaluation, prompting regulatory changes to reduce discretion and align share values more closely with market prices, thereby mitigating volatility effects.

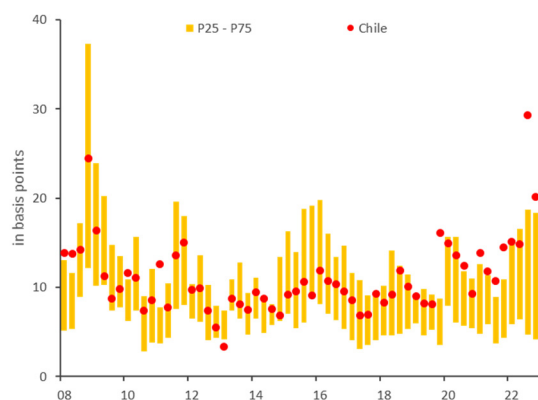
The multi-fund system inherent in PFs, while designed to cater to diverse risk-return preferences, introduces risks stemming from sizeable shifts between funds. These substantial movements, triggered by affiliates' choices, necessitate rapid portfolio rebalancing, resulting in distortions and adverse impacts on the local market. The vulnerability is particularly pronounced during periods of legislative changes, exemplified by the recent early withdrawal allowance for PF savings, culminating in extensive liquidation. The multi-fund system's flexibility, allowing affiliates to freely transition between fund types, poses challenges for fund managers. The need for abrupt portfolio rebalancing to align with affiliates' changing preferences amplifies the potential for market distortions and adverse effects, underscoring the importance of vigilant risk management strategies within the PF landscape.

The growing reliance on non-resident investors within the sovereign bond market introduces potential vulnerabilities, giving rise to risks such as heightened interest rates and increased exchange rate volatility (Figure 11). Institutional investors, notably PFs, traditionally exhibit a long-term investment horizon, and have adhered to a buy and hold strategy, especially within the fixed income market. The empirical evidence underscores that such characteristics contribute to diminishing the volatility of sovereign interest rates (Álvarez et al (2019)). In the Chilean context, the persistently low volatility of the 10-year central bank rate aligns with a substantial presence of institutional investors in the sovereign debt market. However, the buy and hold strategy's impact on liquidity in the capital market is a nuanced concern, further explored in subsequent discussions.

The evolution of the Chilean financial system has positioned the economy to harness increased financial integration, avoiding typical vulnerabilities linked to excessive capital flow volatility. In contrast to more advanced economies, the impact of the GFC on Chile was mitigated due to the heightened reliance on traditional NBFIs like PFs, MFs and ICs, all encompassed within the ambit of robust financial regulation and supervision. Notably, PFs and ICs exhibit a preference for local market liabilities, fostering countercyclical responses to shocks and cultivating a heightened awareness of external risks. Although PFs have diversified their

investment overseas, ICs maintain a bias towards local currency and inflation indexation. However, it is important to note that institutional investors can exhibit procyclical behaviour in the face of adverse shocks originated locally.

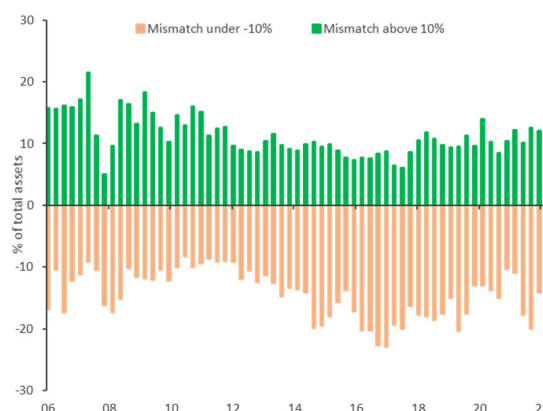
Figure 11: Sovereign rate volatility in EMEs



EMEs include Brazil, China, Colombia, Hungary, India, Indonesia, Malaysia, Mexico, Peru, Poland, Russia and Turkey. Annualised standard deviation of daily return during each quarter.

Source: Central Bank of Chile based on Bloomberg data.

Figure 12: Exchange rate mismatch



Considers sample of companies reporting their balance sheets in pesos. The mismatch measures dollar liabilities minus dollar assets, minus net position in derivatives, as a percentage of total assets. Does not consider state-owned companies or those classified in the financial services and mining sectors.

Source: Central Bank of Chile based on Financial Market Commission (FMC) data.

PFs serve a pivotal role by assuming the counterparty position for domestic entities exposed to currency risks from foreign liabilities.

In a context of higher exchange rate volatility, the corporate sector exhibits a limited currency mismatch (Figure 12). Thus, companies with a mismatch of more than 10% accumulate 11% of total assets, while those with a mismatch of less than –10% account for 15%. Firms and financial institutions strategically leverage PFs in domestic or global markets to offload interest rate and currency risk, aligning with their strategic goals. Notably, PFs engaging in foreign investments strategically undertake the role of a counterparty for corporations grappling with currency risk associated with external debt. This risk management approach within the financial market empowers economic agents to make informed decisions on risk exposure and critical investments.

Recent developments have introduced dynamics that challenge the traditional stabilising role of institutional investors.

Over the past decade, factors such as increased movement between PF types and successive legislative approvals enabling early PF savings withdrawal have altered the historical behaviour of pension funds. This is evident in substantial shifts between funds with different risk profiles, rising from 8.1% in 2014 to 25.6% in 2019. The Covid-19 pandemic further accelerated this trend, compelling the liquidation of over USD 36 billion in diverse financial assets within a brief period. The magnitude of these events has introduced tension into the financial system, prompting ongoing studies to unravel their deeper effects on both the capital market and the broader economy (Ceballos and Romero (2020)).

4. Some policy considerations

The main NBFIs in Chile are subject to a robust regulatory and supervisory framework. The risk of PFs is mitigated by the legal framework and the supervision of the Superintendence of Pensions. The investment made by a PF is regulated in detail, with investment caps per instrument and issuer that limit the funds' exposure to individual entities. MFs, in turn, are under the supervision of the Financial Market Commission (FMC) and subject to regulation by the Single Funds Act, which corresponds to a legal framework that has harmonised and unified the rules governing mutual and investment funds and established various safeguards on their investments. In the case of ICs, mitigators are mainly related to the solvency and risk management requirements established in the relevant statutory decree, which were recently strengthened, and supervision by the FMC.

Furthermore, the CB's regulations on bank liquidity risk management constitute an important mitigator for funding risk. Historically, the CB's regulations on liquidity risk have established 30- and 90-day maturity mismatch limits. In 2015, regulatory limits were established for the Liquidity Coverage Ratio (LCR), whereby a high level of liquid assets was required to adequately face stress scenarios, including the modelling of a possible sudden withdrawal of funding by institutional investors.

Chile follows international regulatory practice to stabilise the valuation of MMFs, aimed at mitigating the risks of intensive asset liquidation. Since 2010, the FMC regulations on the valuation of type 1 mutual funds (MF1) maintain amortised cost valuation of shares as a fundamental characteristic of MMFs and include mechanisms to reduce their deviation from market value.

The application of a risk-based supervision (RBS) model for ICs, as well as a move towards a supervisory framework for financial conglomerates, are still pending. Since 2012, the FMC has moved towards an RBS model for insurers, like the bases of the Basel Framework. However, this implementation would require a change in the applicable legal framework. On the other hand, the FMC is currently working on a methodology for monitoring conglomerates and on a legal proposal on consolidated supervision that grants it the necessary powers to supervise financial conglomerates effectively.

A consolidated debt registry would facilitate the measurement of direct and indirect risks implicit in consumer portfolios and the management of credit risk in general. In Chile, the FMC maintains a credit registry for the banking system. However, it does not include information on credit activity outside the banking system. The incorporation of retail credit cards into the bank credit registry in recent years has contributed to consolidating credit information. However, significant gaps remain with respect to the consolidation of information and the incorporation of data on credit provided by other NBLs, such as non-bank consumer loans, automobile loans, factoring and leasing, which have recorded high growth rates.

The regulatory frameworks for NBLs remain fragmented, which implies additional complexities in the propagation of risks to the banking industry. In particular, S&Ls have a dual supervision scheme, supervision of family compensation funds primarily aims to protect the integrity of social security benefits, while factoring

companies are not subject to different supervision schemes depending on whether they operate as bank subsidiaries or other corporate entities.

5. Conclusions

The structural evolution of the Chilean financial system from 2002 to 2022 reveals a robust and well-functioning landscape, with PFs emerging as a cornerstone, managing 21% of Chilean financial assets. The financial sector's instrumental role in economic growth is evident, with GDP per capita soaring from USD 2,500 in the early 1990s to over USD 16,000 by 2022. The introduction of the pension fund system marked a paradigm shift, positioning Chile as a global pioneer in individual capitalisation.

Despite challenges, including a decline in total financial assets from the peak observed in 2020, the system remains resilient. NBFIs, especially PFs, play a pivotal role in providing financial services, contributing around 70% of GDP by the end of 2022. However, challenges such as the high funding exposure of banks to NBFIs, significant shifts in pension fund allocations and potential vulnerabilities in the sovereign bond market pose risks that require ongoing vigilance.

Policy considerations include the need for continued regulatory oversight, risk management strategies and addressing gaps in credit registries. The regulatory framework has been pivotal in mitigating risks, but ongoing improvements are essential. Institutional investors, particularly PFs, are acknowledged as having a stabilising role during normal conditions but may pose risks during periods of market stress, requiring regulatory interventions.

In conclusion, the Chilean financial system's evolution positions it as a key player in economic growth and stability, with PFs playing a central role. Ongoing policy considerations and regulatory enhancements are crucial to addressing emerging challenges and ensuring the continued resilience of the financial landscape.

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Making China's financial system better serve the real economy

People's Bank of China

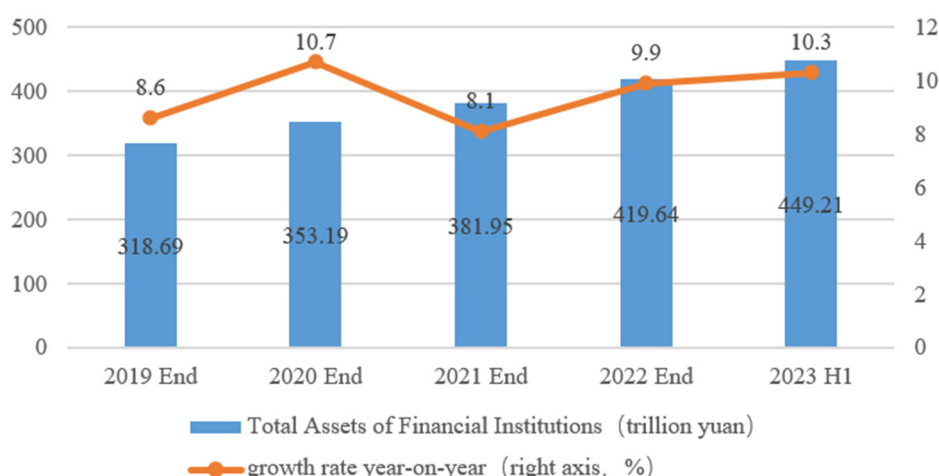
Finance is at the centre of the modern economy and the lifeblood of the real economy. In recent years, China has continued to improve the quality and efficiency of financial services provided to the real economy, and a virtuous circle between finance and the real economy has gradually taken shape. The structure of the financial system is closely related to a country's history, institutional setting and political system, which vary from country to country. The primary purpose of China's financial system is to serve the real economy. Bank credit, the bond market and the stock market have different priorities and work together to support the development of the real economy.

1. Overview of China's financial system

China's financial system has continued to develop in the past decades, and now covers a wide range of institutions conducting banking, securities, insurance, funds and futures businesses in a fully competitive manner. In recent years, the total assets of financial institutions have increased at an average annual rate of more than 9%. By the end of the second quarter of 2023, the total assets of financial institutions stood at CNY 449.21 trillion, an increase of 10.3% over the same period the previous year. China's banking system and bond and stock markets have provided strong support for long-term stability and healthy development of the economy and society. Fintech has effectively supported inclusive finance and improved the quality and efficiency of financial services.

Total assets of financial institutions

Figure 1



Source : People's Bank of China.

Broken down by types of financial institution, the banking sector has played a dominant role, accounting for more than 90% of total financial sector assets. Non-bank financial institutions (NBFIs) including securities and insurance firms have developed rapidly, and their share of total assets has stabilised at around 9.5% since 2021. In general, the assets in China's banking, securities and insurance industries account for, respectively, 90%, 3% and 7% of total financial industry assets. In addition to their growing share in total assets, NBFIs have played an increasingly important role in the money market and bond market, thereby becoming important players in monetary policy transmission. At present, NBFIs are the most important net borrowers in the market. During the first half of 2023, the amount of repurchase and interbank borrowing conducted by securities and insurance companies and other NBFIs totalled CNY 403.2 trillion.

Share of banking sector and NBFIs in total financial assets

Figure 2



Source : People's Bank of China.

Broken down by indirect and direct financing, total social financing (TSF)¹ has continued to grow rapidly, the banking sector remains the dominant channel of financing and direct financing channels have become more streamlined. By the end of September 2023, the stock of TSF was CNY 372.5 trillion, an increase of 9% year on year (Table 1). During the first three quarters of 2023, the cumulative increase in TSF was CNY 29.3 trillion, an increase of CNY 1.4 trillion over the same period in 2022. Among the various components of TSF, CNY loans issued by financial institutions to the real economy increased by CNY 19.5 trillion, an increase of CNY 1.5 trillion over

¹ TSF refers to the total amount of funds received by the real economy from the financial system. It can be measured by its flow or by its stock. It includes CNY loans, foreign currency loans, entrusted loans, trust loans, undiscounted bankers' bills of acceptance, corporate bonds, government bonds, domestic equity financing by non-financial enterprises, etc.

the same period in 2022, accounting for 66.6% of the increase in TSF in the same period. At present, indirect financing dominated by banks accounts for about 71% of the total stock of TSF and direct financing (corporate bonds, government bonds and equity financing) accounts for about 29%, a figure which has remained stable in recent years.

Stock of TSF to the real economy

Table 1

	TSF stock (CNY trillion)	Growth rate (yoy, %)	Share of CNY loans (%)	Share of net financing of corporate bonds (%)	Share of government bonds (%)	Share of equity financing on the domestic stock market by non-financial enterprises (%)
End-2019	251.41	10.7	60.3	9.4	15	2.9
End-2020	284.75	13.3	60.2	9.7	16.2	2.9
End-2021	314.12	10.3	61	9.5	16.9	3
End-2022	344.22	9.6	61.7	9	17.5	3.1
End-Q3 2023	372.50	9.0	62.5	8.4	17.8	3

Sources: People's Bank of China.

The rapid development of fintech in China has helped promote financial inclusion. In recent years, new technologies such as AI, big data, cloud computing, distributed ledger and e-commerce have integrated deeply with traditional financial services. This integration has improved financial innovation, created new businesses in areas such as mobile payment, fintech credit and online wealth management, and also promoted financial inclusion by extending coverage of basic financial services, especially to underserved customers in remote areas. Empowered by digital technologies, traditional financial institutions have increased support to small and micro businesses, effectively making financing more accessible. As of the end of the third quarter of 2023, outstanding inclusive loans to micro and small businesses (MSBs) stood at CNY 28.7 trillion, an increase of 16.9% compared with the beginning of the year. In addition, the coverage and quality of inclusive finance has improved. These types of loans were extended to 42.605 million clients (those with outstanding loans), an increase of 3.728 million (8.75%) compared to the beginning of 2023 (See Box A for details).

Rapid development of fintech has helped promote financial inclusion

Fintech has developed rapidly in China in recent years. Products and applications are increasingly diversified, while financial services have seen a big jump in efficiency and inclusion.

Greater use of electronic payment, mobile payment in particular, has made basic financial services more accessible. Fintech companies can serve underserved customers in some underdeveloped regions, because the marginal cost is low. During Covid-19, the use of electronic payment further increased. The penetration rate of mobile payment is now close to 86% in China. Almost all domestic deposits, withdrawals and remittances can be executed in real time.

Fintech has improved lending services to small and micro businesses as well as the self-employed. Empowered by digital technologies, financial institutions can digitalise every aspect of credit approval and risk control procedures, which enables them to provide services more quickly, target risks better, and serve more people. Meanwhile, reliance on collateral is reduced, which aligns well with the financing needs of small and micro businesses, which typically borrow in small amounts but need the money urgently.

The People's Bank of China (PBOC) is encouraging financial institutions to strengthen the use of fintech, make innovations in risk assessment, improve the efficiency of loan approval, and expand the coverage of small and micro clients. Empowered by fintech, financial institutions can digitalise client acquisition and expand service scenarios. For example, some banks have developed online products called "quick loans to MSBs", which enables contact-free services on a 24/7 basis, and completes the loan approval process (registration – identification – amount estimate – loan application – loan disbursement) within three minutes, much faster than the previous cycle of one to two weeks.

Looking ahead, the PBOC will continue to implement projects to improve financial institutions' ability to provide services to MSBs, encourage financial institutions to boost investment in inclusive financial technology, develop featured credit products and make them more convenient for the financing of small, medium-sized and micro enterprises.

2. Credit has grown rapidly with an improved structure

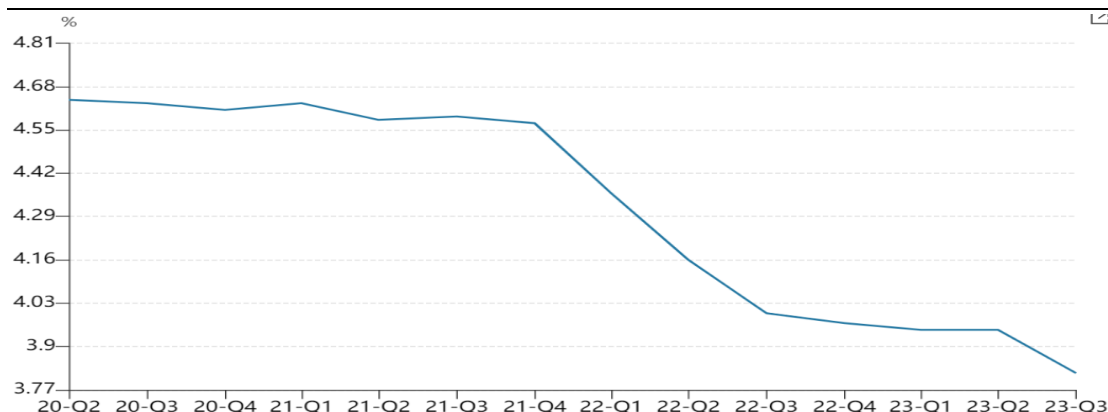
Lending by financial institutions is growing rapidly. At end-September 2023, outstanding CNY loans had grown 10.9% year on year to CNY 234.6 trillion. Currently, the amount of outstanding loans is roughly 10 times the yearly increase of new loans, maintaining a strong support to meet the financing needs of the real economy. In the first three quarters of 2023, new CNY-denominated loans amounted to CNY 19.7 trillion, increasing by CNY 1.6 trillion year on year.

The costs of corporate loans and consumer credit have continued to decline. In 2023, open market operation (OMO) repo operations and the medium-term lending facility (MLF) dropped 20 and 25 basis points (bp) respectively, causing the one-year and five-year loan prime rate (LPR) to decline by 20 bp and 10 bp to 3.45% and 4.20% respectively. In September 2023, the weighted average rate on new corporate loans and on personal mortgage loans registered 3.82% and 4.02%, respectively, down 0.18 percentage points (pp) and 0.32 pp year on year, both representing historical lows. As of end-September 2023, the interest rates of nearly 50 million existing mortgage loans with a total amount of CNY 22 trillion were cut on average by 0.73 pp to an average level of around 4.27%. Lower financing costs have

helped promote investment and consumption by enterprises and households, and support economic development.

Weighted average rate on corporate loans

Figure 3



Source : People's Bank of China.

The credit structure has continued to improve. In terms of the nature of the lending institutions, the stock of credit extended by large domestic commercial banks² accounted for 48.6% of the total by the end of September 2023, exhibiting an overall upward trend and playing a leading role in the expansion of total credit. **In terms of the nature of the borrowers,** by the end of the third quarter of 2023, the outstanding loans of enterprises and public institutions accounted for 65.3% of the total, an increase of about 1 pp from the end of 2022. The outstanding loans of the household sector accounted for 33.9% of the total, a decline of 1.1 pp from the end of the previous year. Generally speaking, the share of household loans has declined in recent years, which is mainly due to the profound shifts occurring in China's economic structure and the significant changes in the supply-demand relationship within the real estate market. It also reflects the fact that households have adjusted the allocation of their assets and liabilities. **In terms of the nature and duration of the loans,** the incremental household loans mainly came from an increase in operating and consumption loans. This reflects the post-pandemic recovery of production and business activities of the self-employed and small and micro business owners, as well as improvement in consumer demand. New corporate loans reached CNY 15.67 trillion in the first three quarters of 2023; medium- and long-term loans increased by CNY 11.93 trillion, providing sufficient medium- and long-term support for investment.

² Large domestic commercial banks are those with total assets equal to or more than CNY 2 trillion (as of year-end 2008, denominated in both CNY and foreign currencies) and include ICBC, CCB, ABC, BOC, CDS, BOCOM and the Postal Savings Bank of China.

Total amount and structure of outstanding CNY-denominated loans from end-2019 to Q3 2023

Table 2

	End-2019	End-2020	End- 2021	End-2022	End-Q3 2023
CNY loans (stock, CNY trn)	153.11	172.75	192.69	213.99	234.59
Growth rate (yoy, %)	12.3	12.8	11.5	11.1	10.9
of which :	based on type of lending institution				
Loans by large state-owned commercial banks (stock, CNY trn)	72.58	81.32	90.70	102.63	113.99
Share (%)	47.4	47.1	47.1	48.0	48.6
of which :	based on type of borrower				
Loans to households (CNY trn)	55.32	63.18	71.10	74.93	79.62
Share (%)	36.1	36.6	36.9	35.0	33.9
Loans to non-financial enterprises and government departments / organisations (CNY trn)	96.27	108.44	120.45	137.52	153.19
Share (%)	62.9	62.8	62.5	64.3	65.3

Sources: People's Bank of China; author's calculations.

In addition, banks continue to ramp up credit support for key fields and weak links, such as small and micro enterprises and green development. Support for inclusive finance, for example vis-à-vis small and micro enterprises, is stable. By the end of September 2023, the balance of China's inclusive loans to small and micro enterprises and the number of accounts increased by 24.1% and 13.3% respectively from the same period in the previous year. The weighted average interest rate of newly issued loans to small and micro enterprises in August was 4.81%, a decline of 0.55 percentage points from the same period in the previous year. By continuously increasing support for key fields and innovation, at the end of September 2023 the balance of medium- and long-term loans to the manufacturing sector had increased by 38.2% from the same period in the previous year. Moreover, the balance of medium- and long-term loans to the infrastructure sector had increased by 15.1% from the same period in the previous year.

Policies continue to guide the optimisation of the credit structure. In 2020, to help small and micro enterprises cope with the impact of Covid-19, the PBOC innovatively launched two facilities, namely the loan repayment extension facility for small and micro enterprises and the uncollateralised loan facility for small and micro enterprises. From 2020 to 2021, Chinese banking institutions granted deferral of principal and interest repayment in an amount of CNY 16 trillion, out of which CNY 13.1 trillion was for micro, small and medium-sized enterprises. A total of CNY 10.3 trillion in uncollateralised loans was disbursed for micro, small and medium-sized enterprises. These two facilities effectively reduced repayment pressures on enterprises during the height of the pandemic, and alleviated the financing difficulties of those enterprises that were lacking collateral. From the beginning of 2022, the loan repayment extension facility was converted into the inclusive credit facility for small and micro enterprises, to be effective until the end of 2024. In this new facility, the PBOC provides subsidised re-lending to locally incorporated banks in an amount as

a certain proportion of the incremental loans to small and micro enterprises. The PBOC will continue to improve the financial sector's ability to serve micro, small and medium-sized enterprises. For this purpose, we will continue to guide financial institutions to optimise institutional arrangements such as internal funds transfer pricing, performance appraisal and accounting, in order to make them willing and able to lend to micro, small and medium-sized enterprises.

Improving the credit structure and making it well aligned with high-quality development could improve growth potential. **First**, loans to micro, small and medium-sized enterprises have kept growing at a rate of above 20% year on year in the past four years in a row, and helped create jobs. **Second**, support for a green economy has been steadily increasing. Since 2022, the year-on-year growth rate of green loans has remained at around 40%.

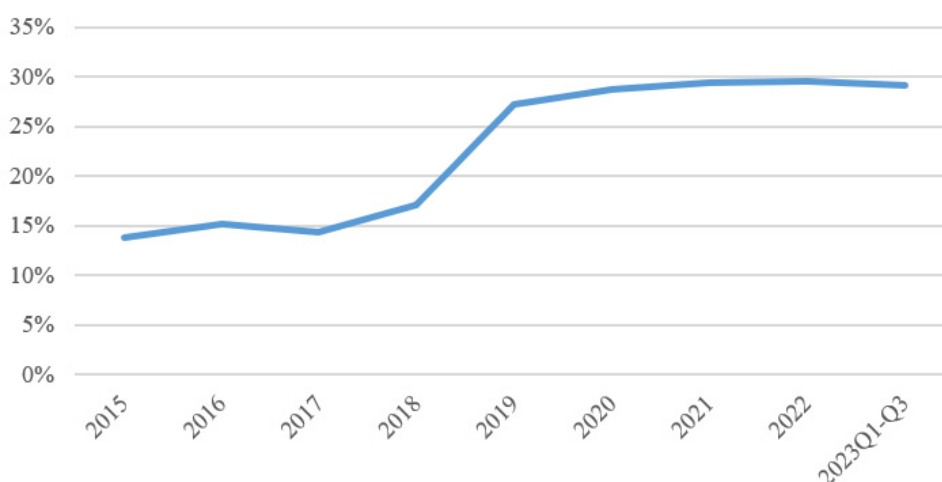
Going forward, the PBOC will continue to implement an accommodative monetary policy and keep it flexible, appropriate, well targeted and effective. The PBOC will maintain sufficient liquidity, and ensure that the size of TSF and the money supply are in line with economic growth and price expectations. We will also use structural monetary policy instruments to guide financial institutions to promote green transformation and financial inclusion.

3. As the capital market steadily develops, the proportion of direct financing has been on the rise

In recent years, China's bond and stock markets have developed rapidly, resulting in a steady increase in the proportion of direct financing. By the end of September 2023, the proportion of direct financing to TSF reached 29.2%.

Proportion of direct financing in the stock of aggregate financing to the real economy

Figure 4



Source : People's Bank of China; author's calculations

As for the bond market, it has played an important role in supporting the real economy. **First**, the market has continued to grow in size. By the end of September 2023, outstanding bond volume was about CNY 154 trillion, up by 56% from the end of 2019. China's bond market is the second largest in the world. **Second**, channels for direct financing have been broadened. More uncollateralised special bonds have been rolled out, such as bonds for green development, mass entrepreneurship and innovation, and rural area revitalisation. These could help new growth drivers to take shape. By the end of September 2023, the outstanding uncollateralised bonds for enterprises stood at CNY 32.4 trillion. Uncollateralised bonds have become the second largest financial instrument to channel funds to the real economy, exceeded only by bank loans. From January to September 2023, net financing through bonds amounted to CNY 7.6 trillion, accounting for 25.9% of TSF, an increase of 3.8 pp from the same period in 2017. **Third**, the development of the bond market has supported the implementation of China's proactive fiscal policy. At end-September 2023, China's government bond balance stood at CNY 66.2 trillion, with an average annual growth rate of 15.8%. **Fourth**, development of the bond market has enhanced the ability of financial institutions to support the real economy. Bonds issued by financial institutions stood at CNY 37.2 trillion at end-September 2023 and have become one of the major sources for policy banks and other financial institutions to replenish capital. Through issuance of financial bonds, policy banks set up special funds for infrastructure investment and key projects. In addition, banks can replenish capital by issuing perpetual bonds. By the end of September 2023, the balance of various types of capital replenishment bonds of commercial banks had reached CNY 6 trillion, which increased the average capital adequacy ratio of commercial banks by about 3 pp.

For the stock market, the A-share market provides an important channel for financing the real economy. From January to September 2023, 204 companies raised CNY 312.5 billion through initial public offerings (IPOs) on the Shanghai and Shenzhen stock exchanges. Among the over 5,200 A-share listed companies, many are industry leaders and small champion companies. They all play an important role in innovation, employment creation and economic stability.

Financing through the A-share stock market

Table 3

Year	2016	2017	2018	2019	2020	2021	2022	Q1–Q3 2023
A-share financing (CNY trn)	1.45	1.18	0.68	0.69	1.16	1.47	1.32	0.74

Sources China Securities Regulatory Commission.

Positive progress has been made in opening up the capital market. **As for the bond market, first**, efforts have been made to attract more foreign investors and issuers. As a result, foreign institutional investors in the bond market have expanded from foreign central banks, CNY clearing banks and participating banks to commercial banks, asset managers and pension funds. By the end of September 2023, 1,110 foreign institutional investors from more than 70 jurisdictions had entered China's bond market, and the number of foreign institutional investors has been growing at an average rate of about 100 per annum since 2017. **Second**, various connect programmes have linked the mainland market with the global bond market in an

orderly manner. The northbound and southbound connect programmes were launched sequentially under the Bond Connect scheme. The mainland bond market is now connected with that of Hong Kong SAR through interlinking of their respective infrastructures, so that overseas institutions can access the Chinese bond market through “one entry point”. At the end of September 2023, foreign investors held CNY 3.3 trillion in domestic bonds, up by 48% from the end of 2019.

Steady progress has been made in connecting the stock market with overseas stock markets, to allow enterprises to capitalise on the markets and resources both at home and abroad. The stock market connect scheme has been expanded from the previously launched Shanghai-London Stock Connect to the Shenzhen-London Stock Connect and then to other jurisdictions such as Switzerland and Germany. By the end of 2022, 14 A-share listed companies had issued global depositary receipts (GDRs) in the United Kingdom and Switzerland, raising about USD 9.2 billion in total.

However, the proportion of direct financing has remained subdued, and there is significant room for improvement. In recent years, the size of direct financing has increased significantly. But it still accounts for less than 15% after excluding government bonds (see Table 1 for details), which is dwarfed by the dominant position of indirect financing. This structural imbalance between direct and indirect financing is not in line with the shift towards an innovation-driven economic development model. Indirect financing dominated by banks prefers large traditional enterprises deemed to have mature operations and low risks, and naturally stays away from small and innovative enterprises deemed to have high risks and high returns. On the one hand, over-reliance on indirect financing for economic development would not only give rise to a high leverage ratio, but also have the potential to cause systemic financial risks. On the other hand, bank savings and wealth management products can no longer meet households’ growing demand for asset preservation. At present, financial products with stable returns are limited in the capital market. The supply and demand mismatch has distorted the allocation of economic resources, which is not conducive to sustainable development of the economy.

4. China’s financial system has remained stable

Financial risks are generally under control. The total assets of the banking industry account for about 90% of the total assets of the financial industry. As such, a stable banking system means financial stability. The results of a central bank rating of financial institutions conducted in the second quarter of 2023 showed that 24 major banks, accounting for about 70% of the combined assets of those rated banking institutions, had good ratings. This indicates that the overall operation of banking institutions is stable and risks are generally under control.

The main risk indicators are within a reasonable range, and China’s financial system is resilient. As of the end of the third quarter of 2023, the non-performing loan (NPL) ratio in the banking sector was 1.65%. The provision coverage ratio of commercial banks was 207.9%, the capital adequacy ratio 14.66%, and the Liquidity Coverage Ratio 143.5%. The average risk coverage ratio and average capital leverage ratio of securities companies were 255.38% and 18.78% respectively. Moreover, the

average comprehensive solvency adequacy ratio and core solvency adequacy ratio of insurance companies were 188% and 122.7% respectively.

The overall risk of small and medium-sized financial institutions is under control. Since 2018, China has prioritised defusing risks of high-risk institutions. The number of high-risk small and medium-sized banks has decreased from the peak of 600 to around 300. To date, the assets of these high-risk banks only account for about 1.7% of total assets. In those few provinces with a relatively high concentration of high-risk institutions, plans have been made or implemented to further defuse the risks through reforms. The PBOC will work with other relevant agencies to improve financial risk monitoring, assessment, prevention and control and to make the early correction mechanism for financial risks really binding, more standardised and enforceable.

The spillover of the real estate sector onto the financial system is limited. Outstanding real estate loans amount to about CNY 53 trillion, accounting for 23% of total bank loans. Around 80% of real estate loans are mortgage loans. China has always followed a highly prudential mortgage lending policy, and as a result, the NPL ratio for mortgage loans is only 0.52%. Loans to developers account for about 20% of real estate lending; their NPL ratio is 2.7%. In general, China's real estate sector is searching for a new equilibrium. As previously launched policy measures gradually take effect, there have been some positive signs in the real estate market. Looking ahead, as urbanisation continues and the large group of new urban residents is growing, the demand for basic and improved housing is likely to be substantial. This could help support healthy and stable development of the real estate sector.

Attention should be paid to the implications of the liquidity needs of NBFIs for financial stability, and monitoring and regulation should be strengthened. NBFIs have problems such as asset-liability mismatch, insufficient capital buffer, poor risk management and lack of deposit insurance coverage. In addition, they often borrow short and lend long, which results in frequent short-term liquidity demands. They borrow short-term funds from the money market, and raise leverage by rolling over maturities. This has made many NBFIs vulnerable to the month-end calendar effect, thus resulting in a temporary rise in financing costs.

A delicate balance needs to be struck between development and regulation to support healthy and steady development of big techs. The rapid development of fintech has enabled tech companies to thrive and prosper, which has improved efficiency, lowered transaction costs and enhanced financial inclusion. However, this rapid development of the fintech sector has also resulted in a number of problems such as unlicensed financial services, market monopoly, personal information leakage and potential contagion of financial risks. Therefore, from end-2019 China started to strengthen regulation of big techs through a multi-pronged approach. **First**, all financial activities were brought under financial supervision, and it was required that no financial services be offered without licences. **Second**, payment service providers were asked to focus on payment-related activities, and to cut off connections with financial products. **Third**, China strengthened antitrust efforts, so as to protect financial consumers. **Fourth**, we strengthened data protection by enacting new laws and regulations, and better regulating the credit information business. **Fifth**, prudential regulatory requirements were implemented in earnest with respect to online financial services. Certain big techs were asked to establish financial holding companies and bring all their financial services under the umbrella of these holding

companies. After a period of intense efforts, we have now entered a phase of routine regulation and supervision. Going forward, the PBOC will continue to follow market principles and the rule of law, encourage some big techs to resolve the few remaining problems, beef up the regulatory regime and capacity, and tap the role of big techs in promoting growth, job creation and innovation.

Some trends and patterns of firm financing in Colombia

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Central Bank of Colombia

1. Introduction

After a protracted period of financial deepening following a financial crisis at the end of the 20th century, the ratio of bank loans to GDP in Colombia stagnated between 2016 and 2019 (Graph 1). There were two opposite trends behind these dynamics. The ratio of commercial loans to GDP declined after 2016, whereas consumer and mortgage loan-to-GDP ratios kept increasing (Graph 2). The pandemic implied an increased volatility of these indicators since output declined and loans remained resilient. Post-pandemic, all the ratios have decreased.

Clearly, there has been a change in the composition of the bank loan portfolio towards household liabilities. While this is a natural development in an emerging market economy with greater financial inclusion, the reduction in the commercial loan-to-GDP ratio raises some questions about corporate financing in Colombia. Has there been a substitution of bank loans to other financial instruments linked to capital market development or enhanced foreign funding access? Or, has a healthy corporate deleveraging process taken place? Is the overall evolution of firms' financial leverage related to the behaviour of investment? This note explores these questions using aggregate data.

From a longer-term growth perspective, we also aim to investigate whether fast-growing firms differ from others in terms of their financial leverage. This could provide some indication about the role of financial intermediation or capital markets in the promotion of economic growth. Thus, based on disaggregated data, this note examines some features of the financing behaviour of non-financial firms that have exhibited greater sales growth rates or capital expenditure (CAPEX) to asset ratios in the past 17 years. Furthermore, we characterise those banks that have been more exposed to fast-growing or high CAPEX ratio firms with respect to profitability, loan interest earnings, operational efficiency and ex post loan risk.

In a nutshell, we find that the decline of the ratio of bank corporate loans to GDP is related to substitution of funding sources and is not part of a balance sheet deleveraging process. Total corporate leverage (total liabilities/assets) has exhibited an upward trend, while financial leverage (financial liabilities/assets) has declined. The

¹ Camilo Gómez, María Meneses and Angie Rozada are professional economists in the Financial Stability Department, Carlos Quicazán is the Director of the Financial Stability Department, Andrés Murcia is the Vice-President of Monetary Affairs and Foreign Investments, and Hernando Vargas is the Technical Deputy Governor of the Central Bank of Colombia. We are grateful to Juan Esteban Carranza and Leonardo Villar for their comments. All opinions are our own and do not necessarily represent those of the central bank or its Board of Directors.

slowdown in financial liabilities coincided with the decrease in the investment-to-GDP ratio that was part of the macroeconomic adjustment to a sharp deterioration of terms of trade between 2014 and 2016. An exploration of disaggregated firm data indicates that fast-growing enterprises (measured by their real sales growth) typically display greater total leverage ratios, but their relative reliance on financial liabilities is less clear. On the other hand, financial leverage is higher for firms that exhibit large CAPEX-to-asset ratios. Thus, the association between financial intermediation and investment seems to be stronger than that between financial intermediation and sales growth.

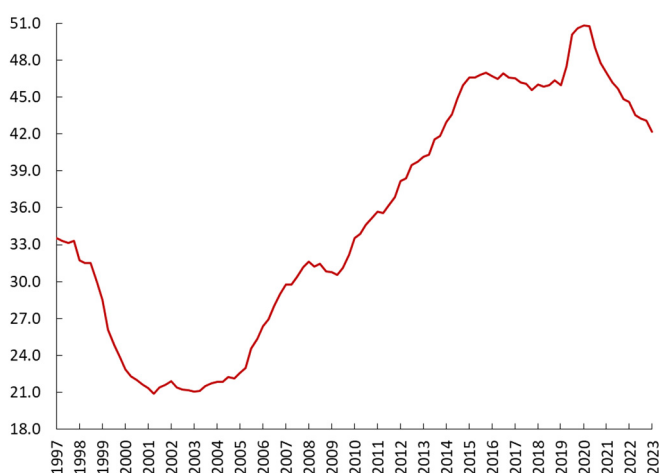
2. Some features of firm financing in Colombia

The total debt ratio measured as corporate debt as a fraction of GDP increased continuously between 2004 and 2016, with local bank loans and suppliers' loans being its main components (Graph 3). Interestingly, the importance of the debt held with foreign financial institutions has decreased compared with the beginning of the century, reflecting the reduction of currency mismatches that has accompanied the flexible exchange rate regime in place since 1999. Whereas the ratio of liabilities with domestic banks fell between 2016 and 2019, as mentioned above, total debt exhibited a smoother pattern.² Loans from parent companies abroad and local input supplier credit explain a large part of the difference. Nonetheless, the total corporate debt ratio has followed a declining trend after 2018 (with some volatility related to the pandemic in 2020 and 2021).

Total bank loans

As a percentage of GDP

Graph 1



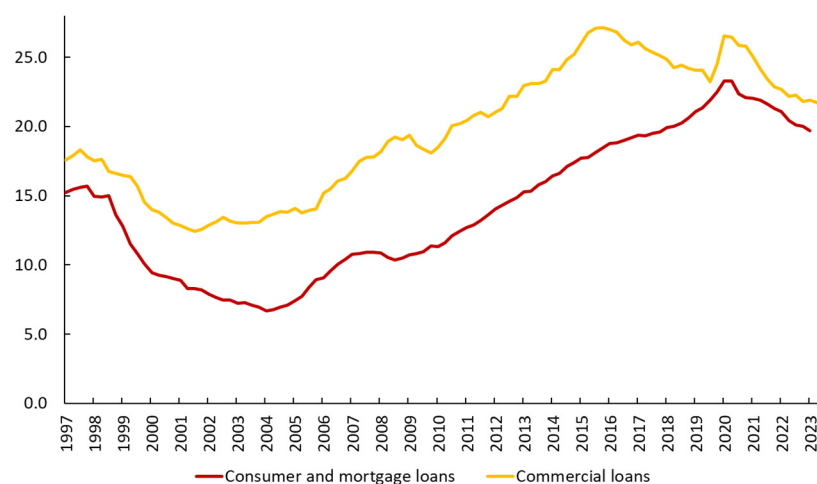
Sources: Central Bank of Colombia

² Unlike Graphs 1 and 2, Graph 3 includes foreign currency debts expressed in local currency using the average COP/USD exchange rate for the 2000–June 2023 period. This adjustment filters movements in the debt ratio that are due to valuation effects related to exchange rate fluctuations.

Commercial, consumer and mortgage loans

As a percentage of GDP

Graph 2

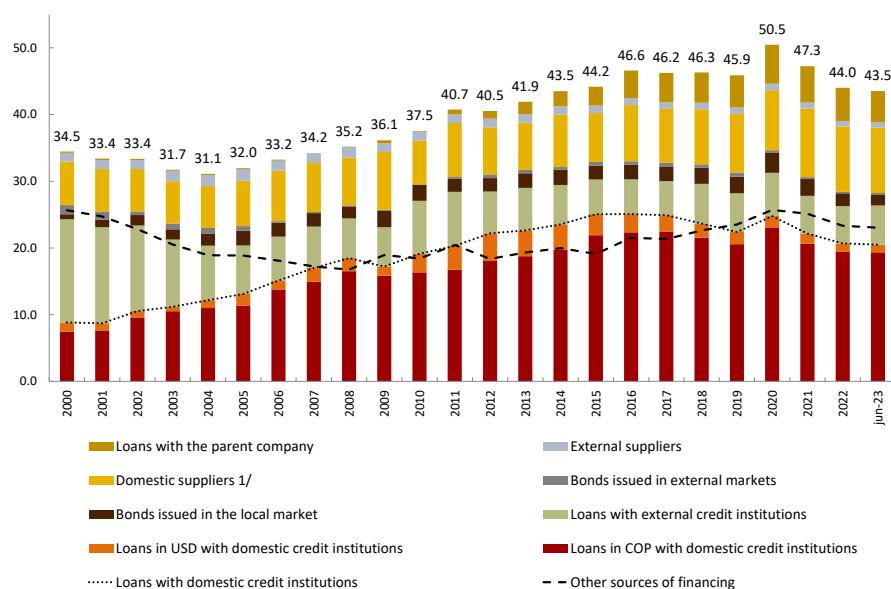


Sources: Central Bank of Colombia

Debt by instrument in the private corporate sector

As a percentage of GDP

Graph 3



^{1/} Only includes information from firms that report financial statements to the Superintendence of Corporations. In 2016, all firms reported their financial statements using IFRS, which did not allow the balance of domestic suppliers to be identified. To approximate this number, the average percentage of this account between 2007 and 2015 was used.

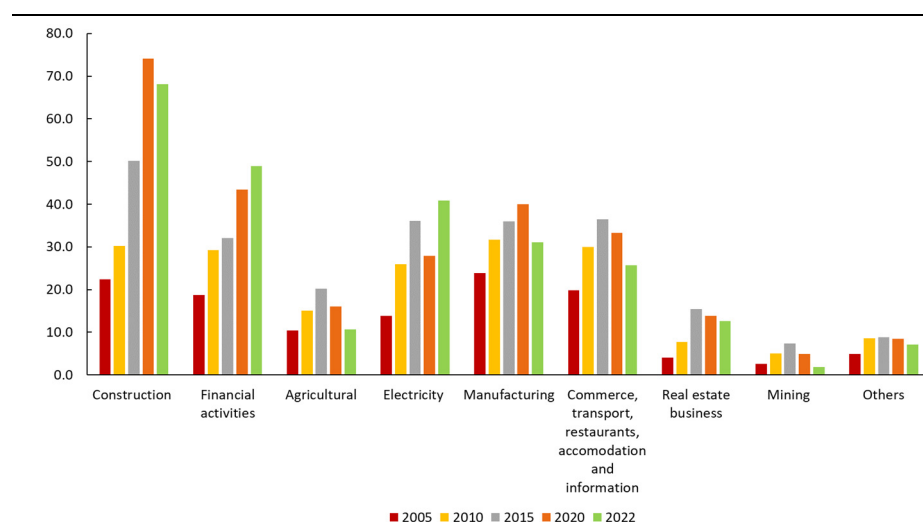
Sources: Central Bank of Colombia; Financial Superintendence; Superintendence of Corporations; Central Bank of Colombia calculations.

Sectoral local bank loan data also portray a general process of financial deepening up to 2015 (Graph 4). Afterwards, there have been heterogeneous patterns across sectors. Firms in construction, electricity and financial services³ display an increasing trend in their loan-to-GDP ratios, in contrast to the rest of the sectors.⁴ The sectoral composition of bank loans has changed over time. Bank credit to manufacturing and mining firms has decreased along with the share of these sectors in the economy, while loans to construction and real estate firms have increased their participation well above their share in total value added (Graph 5). Loans to agriculture and other sectors represent a fraction that is smaller than their share of total value added. Moreover, the participation of loans to the agricultural sector has fallen since 2005 (Graph 5).

Local credit to GDP by economic sector

In per cent

Graph 4



Note 1: Others include artistic, recreational activities, education, health, and public and defence administration.

Note 2: Financial activities include firms that are supervised by the Superintendence of Corporations but not by the Financial Superintendence. These firms are engaged in the purchase of credit portfolios or factoring, auxiliary financial activities, and purchase and sale of foreign currency, among others.

Note 3: Commerce represents 72% of the local credit in the correspondent sector.

Note 4: The increase in the financial deepening indicator observed in 2015 in most sectors is also explained by the change in the International Standard Classification of All Economic Activities (ISIC) from version 3 to 4 that increased the coverage of sectoral information reported.

Note 5: As of 2022, construction represents 9.6% of GDP, financial activities 8.0%, agriculture 14.2%, electricity 12.6%, manufacturing 9.4%, commerce, transport, restaurants, accommodation and information 9.6%, real estate business 8.4%, mining 19.5% and others 8.7%.

Sources: Financial Superintendence; National Administrative Department of Statistics; Central Bank of Colombia calculations.

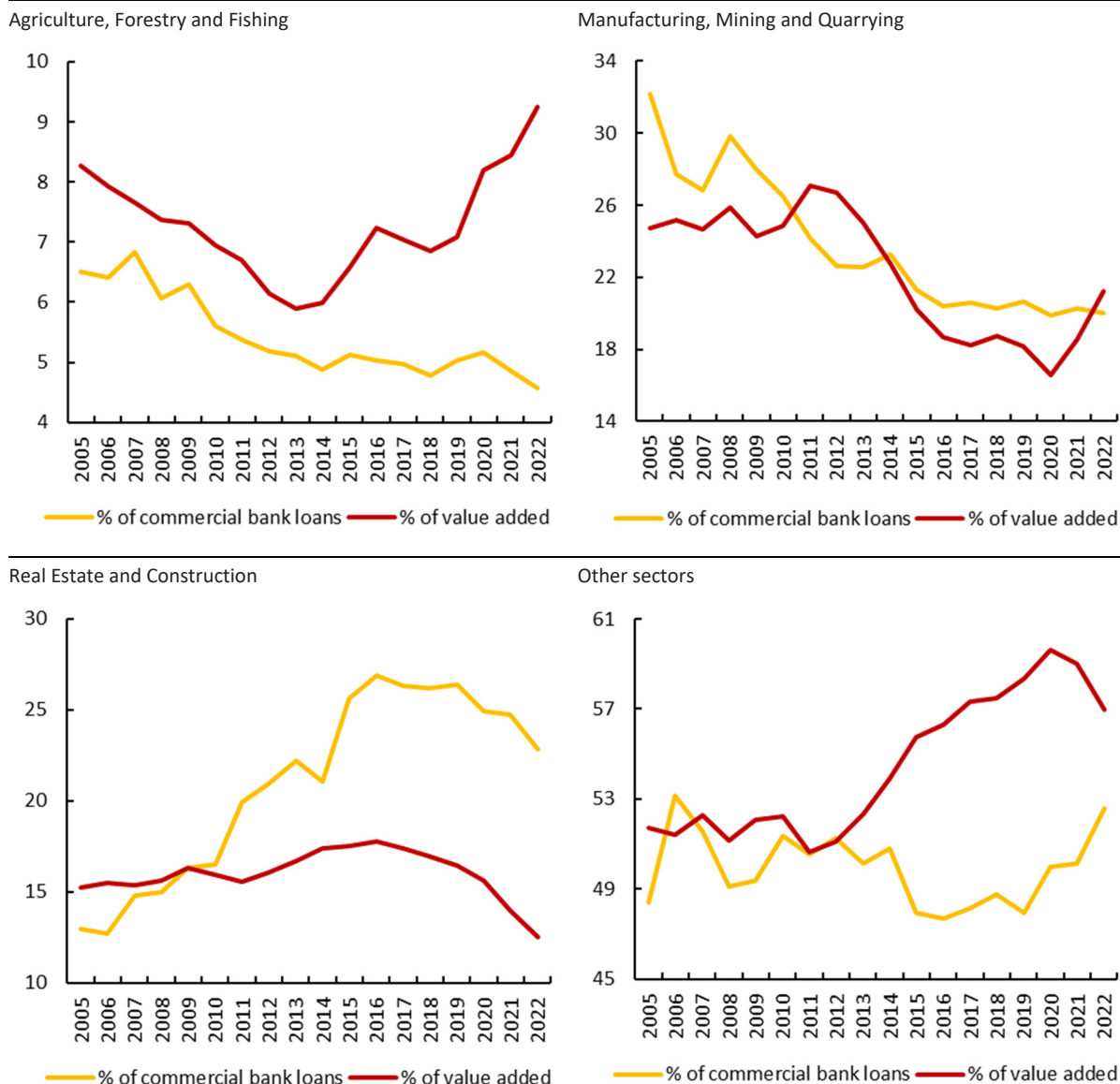
³ Factoring, foreign exchange bureaus and other auxiliary financial activities. This sector does not include depository institutions, insurance companies and brokers, stockbroker firms or mutual and pension funds.

⁴ As in Graph 3, Graph 4 includes foreign currency debts expressed in local currency using a constant exchange rate in order to filter movements in the debt ratios that are due to valuation effects related to exchange rate fluctuations.

Sectoral shares of bank loans and value added

In per cent

Graph 5



Source: Central Bank of Colombia and authors' calculations based on data from the National Administrative Department of Statistics.

A natural question that arises from the previous graphs is whether the declining trend of corporate financial debt after 2016 is part of a deleveraging process. Graph 6 shows the evolution and composition of the leverage ratio (liabilities/assets) for a sample of Colombian firms that report their financial statements to the Superintendence of Corporations.⁵ Total leverage was relatively stable between 2005

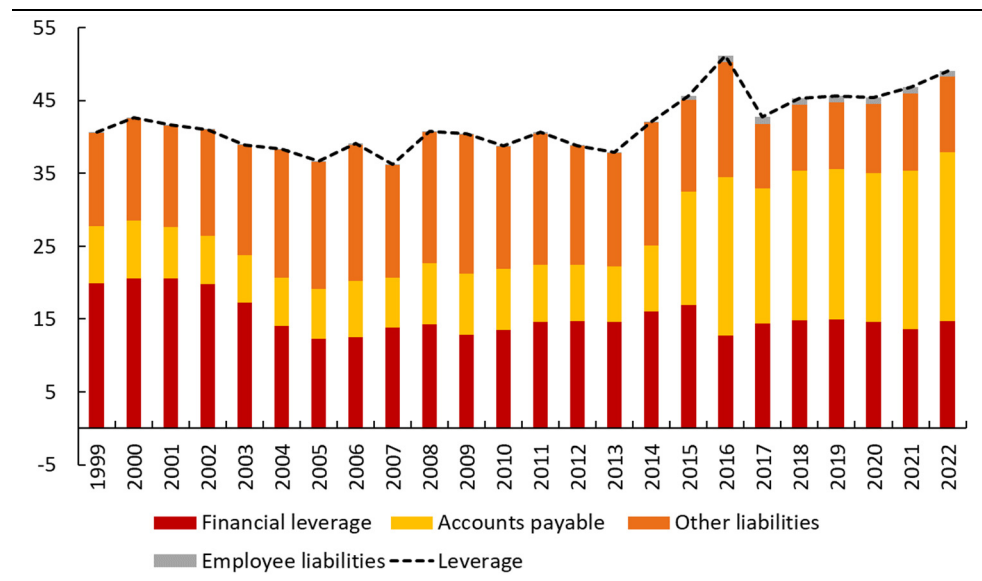
⁵ Firms with assets or earnings above 30,000 current monthly legal minimum salaries (CMLMS) must disclose annual financial information to the Superintendence of Corporations. As of December 2022, the sample included 29,935 firms (of which 42.3% were large) with COP 1.7 trillion in assets and COP 1.2 trillion in sales (85.9% of GDP). These firms account for 43.9% of the commercial loans provided by banks in Colombia.

and 2013. It has exhibited an increasing trend since then, with a peak in 2016. By contrast, financial leverage (financial liabilities/assets) decreased after 2015, in line with the above-mentioned reduction in the banks' commercial loan-to-GDP ratio. The difference between these trends is mainly explained by a greater participation of accounts payable in total assets. Hence, we infer that the decline in financial deepening is not related to an overall deleveraging process, but to a substitution of financial debt to other types of liabilities.⁶

Leverage of the private corporate sector

In per cent

Graph 6



Note 1: Leverage is defined as the ratio of total liabilities over total assets.

Note 2: Accounts payable include short- and long-run liabilities with suppliers, parent company and others. Other liabilities include short- and long-run tax liabilities and other liabilities.

Sources: Superintendence of Corporations; National Administrative Department of Statistics; Central Bank of Colombia calculations.

The increasing trend in total leverage is present in manufacturing, mining and agricultural firms, among others (Graph 7). The reduction in financial leverage since 2015 is observed in most sectors (Graph 8). Large enterprises explain the rising trend in total leverage (Graph 9), while small and medium-sized enterprises (SMEs) have displayed a stable ratio (Graph 10).⁷ For both types of firms, financial leverage

⁶ The change between 2015 and 2016 can be also explained by the introduction of IFRS accounting standards. Prior to 2015, companies were required to report their short- and long-term accounts payable excluding the liabilities to suppliers. Since 2016, short-term and long-term accounts payable include liabilities to suppliers and it is not possible to disaggregate this information. Nevertheless, we consider that this factor does not affect the interpretation of the results significantly, since financial leverage decreased in that period.

⁷ SMEs are defined as enterprises that have assets below 15,000 CMLMS and large enterprises are those that record assets above that amount. Given the criterion of the Superintendence of Corporations that only firms with earnings or assets above 30,000 CMLMS must disclose their financial statement, the SMEs group is tilted towards medium-sized enterprises.

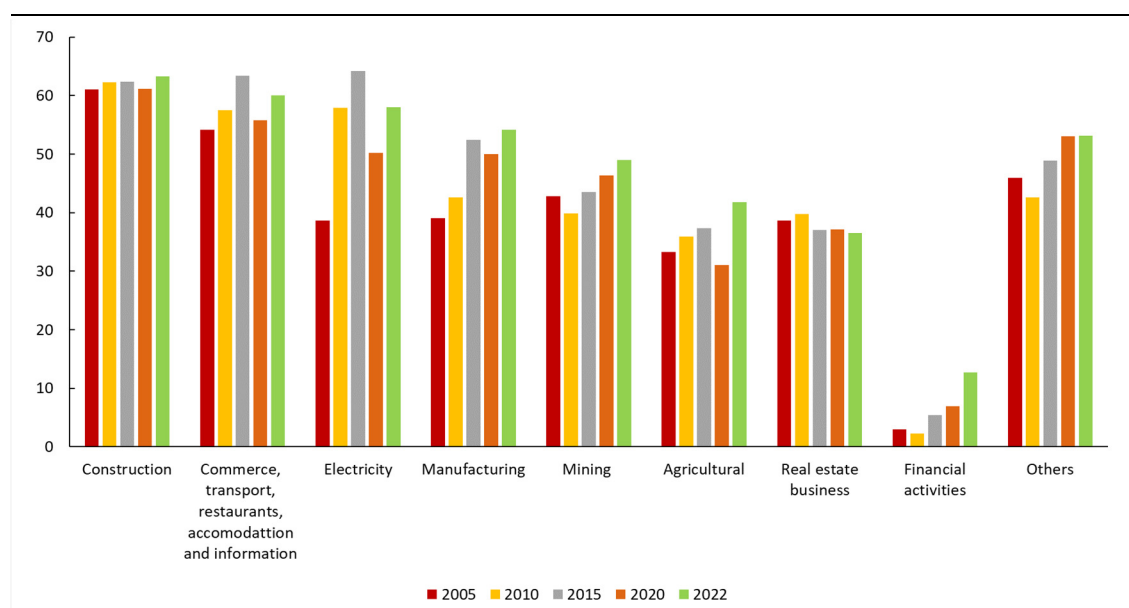
decreases and accounts payable participation increases from 2016 onwards (Graphs 9 and 10).

Between mid-2014 and 2016, Colombia experienced a sharp and prolonged deterioration of its terms of trade, following the drop in international oil prices. The ensuing fall in national income and widening of the external imbalance required a macroeconomic adjustment that included a reduction of the current account deficit, based mostly on a slide of the investment-to-GDP ratio (Table 1). Private corporate investment bore part of this and it coincided with a decline in financial corporate debt as a percentage of GDP and the real growth rate of commercial bank loans between 2014 and 2019 (Graphs 11 and 12). Thus, the retrenchment of private investment after the oil shock could be among the reasons for the ebb of corporate financial deepening. By contrast, the strong recovery in investment after the pandemic (especially in 2022) did not come with a significant increase in total or financial corporate debt (Graphs 3, 11 and 12).

Leverage of the private corporate sector by economic sector

In per cent

Graph 7



Note 1: Others include artistic, recreational activities, education, health, and public and defence administration.

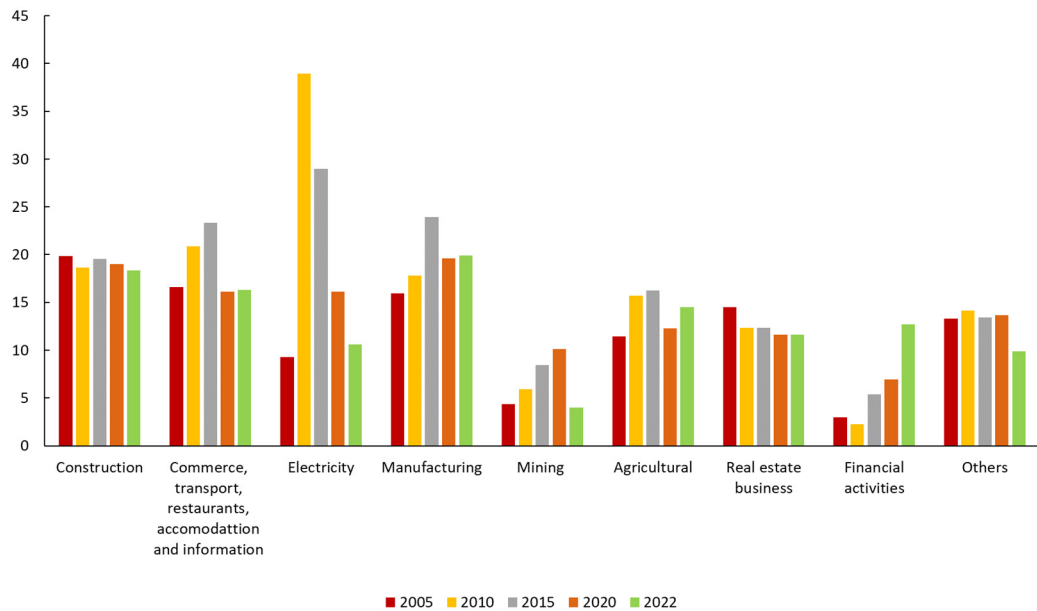
Note 2: Financial activities include firms that are supervised by the Superintendence of Corporations but not by the Financial Superintendence. These firms are engaged in the purchase of credit portfolios or factoring, auxiliary financial activities, and purchase and sale of foreign currency, among others.

Sources: Superintendence of Corporations; Central Bank of Colombia calculations.

Financial leverage of the private corporate sector by economic sector

In per cent

Graph 8



Note 1: Others include artistic, recreational activities, education, health, and public and defence administration.

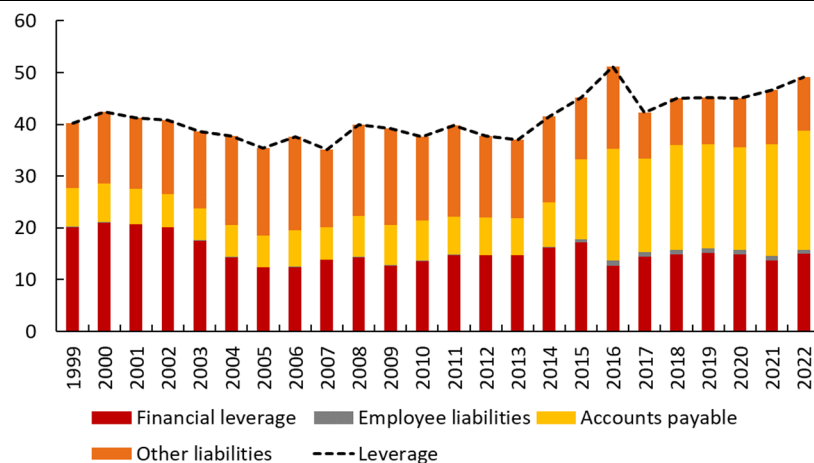
Note 2: Financial activities include firms that are supervised by the Superintendence of Corporations but not by the Financial Superintendence. These firms are engaged in the purchase of credit portfolios or factoring, auxiliary financial activities, and purchase and sale of foreign currency, among others.

Sources: Superintendence of Corporations; Central Bank of Colombia calculations.

Leverage of big enterprises

In per cent

Graph 9



Note 1: Leverage is defined as the ratio of total liabilities over total assets.

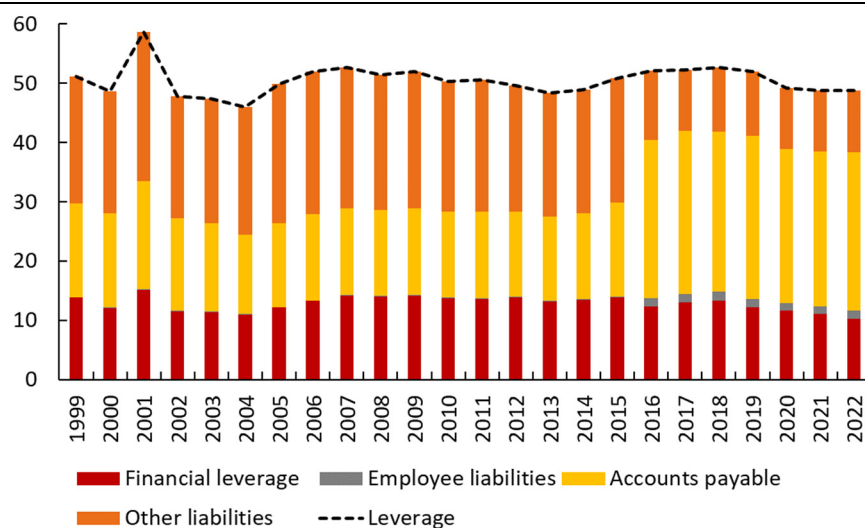
Note 2: Accounts payable include short- and long-run liabilities with suppliers, parent company and others. Other liabilities include short- and long-run tax liabilities and other liabilities.

Sources: Superintendence of Corporations; Central Bank of Colombia calculations.

Leverage of small and medium-sized enterprises

In per cent

Graph 10



Note 1: Leverage is defined as the ratio of total liabilities over total assets.

Note 2: Accounts payable include short- and long-run liabilities with suppliers, parent company and others. Other liabilities include short- and long-run tax liabilities and other liabilities.

Sources: Superintendence of Corporations; Central Bank of Colombia calculations.

Current account deficit and investment ratio

As a percentage of GDP

Table 1

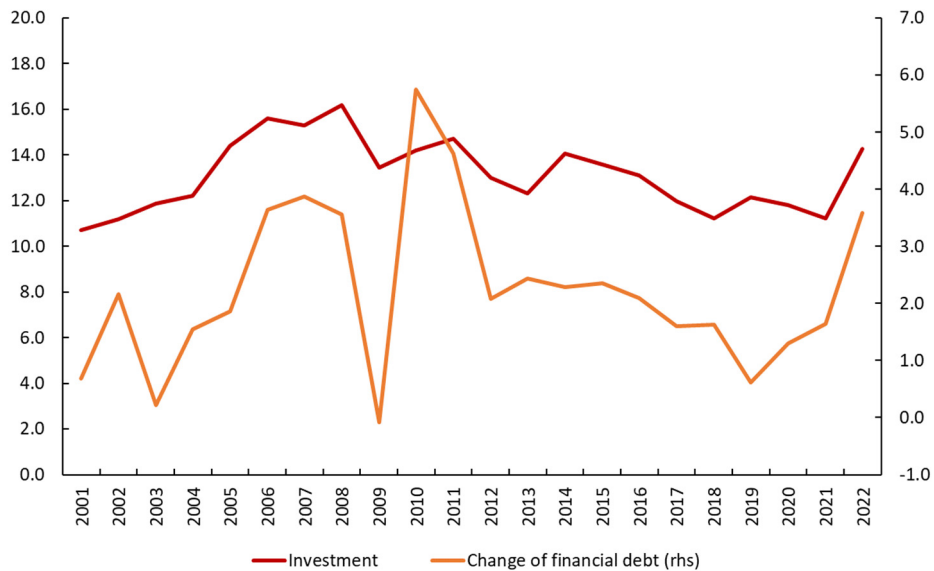
Current account deficit	Investment ratio (nominal prices)	Investment ratio (real terms)	Current account deficit
2014	-5.2	24.1	24.8
2015	-6.3	23.7	23.8
2016	-4.4	22.6	23.3
2017	-3.2	22.0	22.2
2018	-4.2	23.0	22.0
2019	-4.6	22.1	21.9

Source: Central Bank of Colombia and authors' calculations based on data from the National Administrative Department of Statistics.

Investment and financial debt change

As a percentage of GDP

Graph 11



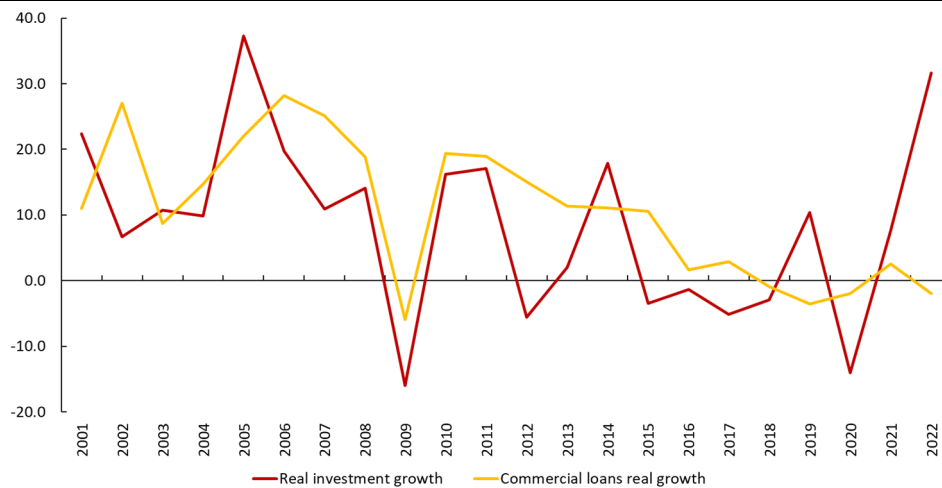
Financial debt change is calculated as the change of financial debt between two periods divided by nominal GDP.

Sources: Superintendence of Corporations; National Administrative Department of Statistics; Central Bank of Colombia calculations.

Real commercial loans and investment growth

In per cent

Graph 12



Sources: Financial Superintendence; National Administrative Department of Statistics; Superintendence of Corporations; Central Bank of Colombia calculations.

3. Total leverage and financial leverage of fast-growing firms

Have fast-growing firms relied more on funding from financial intermediaries or capital markets than other firms? If so, this could be an indication of the importance of financial development in promoting economic growth, possibly because of the role of financial institutions in selecting the most promising projects and businesses. However, some firms may grow faster than others simply because they have greater access to funding from the financial system, and situations in which financial intermediaries treat equally promising projects in different ways cannot be ruled out.⁸ In this case, the positive effect of financial intermediation on economic growth may be diminished.⁹

In this context, greater reliance of fast-growing firms on financial markets may signal a largely significant role of financial intermediation in promoting economic growth. In this section, we explore whether this pattern is found in the granular Colombian firm data. More precisely, we use the financial statements of firms reporting to the Superintendence of Corporations¹⁰ between 2006 and 2022 to obtain the distributions of the firms according to sales growth and CAPEX to total asset ratios. We then compare the total and financial leverage ratios of each quartile of the distributions to assess the differences between the firms with faster-growing sales or greater CAPEX ratios (those in the fourth quartile) and the rest.

To set the stage for this exploration, we estimate the conditional correlation between real sales growth and non-financial and financial leverage, and between CAPEX ratios and non-financial and financial leverage, respectively, based on panel regressions with time and firm fixed effects (Table 2).¹¹ The correlations between real sales growth and non-financial and financial leverage are both significant, although

⁸ Naturally, there are many reasons that explain differences in the growth of firms, and a more comprehensive analysis must include them (eg size, vintage, market structure, etc).

⁹ Banking activities can foster economic growth, limiting financial market imperfections and channelling funds to the best investment opportunities, as pointed out in Bernanke and Gertler (1990) and Holmstrom and Tirole (1997). However, there are other possible channels such as provision of ex ante information, availability of monitoring technologies, improvement in risk management, consolidation of prudential buffers, the contract enforcement role, mobilisation of savings and reduction of the costs of exchanging goods and services in the economy (Levine (2005); Da Rin and Hellmann (2002); Beck et al (2000)).

¹⁰ See footnote 5.

¹¹ We estimate the following panel data models using OLS:

$$Y_{it} = \beta_1 \cdot \text{Non Fin Leverage}_{it} + \beta_2 \cdot \text{Fin Leverage}_{it} + a_i + b_t + v_{it} \text{ and}$$

$$Y_{it} = \alpha \cdot Y_{it-1} + \beta_1 \cdot \text{Non Fin Leverage}_{it} + \beta_2 \cdot \text{Fin Leverage}_{it} + a_i + b_t + v_{it}.$$

Y_{it} corresponds to either real sales growth or the CAPEX ratio of firm i in period t . Fin Leverage_{it} represents the financial leverage measure (financial liabilities/assets) of firm i in period t . $\text{Non Fin Leverage}_{it}$ is the equivalent measure for non-financial leverage. Even though the rest of this section uses total and financial leverage, we estimate the model with the mentioned variables to mitigate multicollinearity problems in regressions. a_i and b_t correspond to firm and time fixed effects, respectively, and v_{it} represents the error term. Estimations are conducted using the within fixed effects transformation and errors are clustered at the firm level.

the former is statistically larger.¹² The correlations between CAPEX ratios and non-financial and financial leverage are also significant, but the latter is stronger in this case.¹² We next examine these relationships in more detail across the distributions of the variables of interest.

a. Sales growth

Appendix 1 shows the distribution of real sales growth for the whole 2006–22 period and for the initial (2006–12), medium (2013–19) and Covid (2020–22) subperiods. Sales growth exhibits wide heterogeneity across firms and its distribution is similar in the three subperiods. In general, sales growth is positively related to total leverage and CAPEX ratios (Graph 14 and Table 3), with the fastest-growing firms (fourth quartile) having the highest leverage and CAPEX ratios for the whole sample. The relation between CAPEX and sales growth should be expected, as greater sales usually follow a larger scale of investment, or larger investment may follow greater sales potential. By contrast, there is no clear relationship between sales growth and financial leverage. If anything, the slowest-growing firms have the highest financial leverage ratios throughout the period of analysis. These results generally hold for the firms in significant sectors such as manufacturing, commerce and real estate, as well as for both large enterprises and SMEs (Appendices 2 and 3).

Firms belonging to the construction, real estate, financial activities and mining sectors have larger shares in the fourth quartile of the growth sales distribution than in the overall sample for some selected years (Table 4). Likewise, large enterprises represent a relatively larger fraction of the fastest-growing firms (Table 5), even though smaller firms could have been expected to have greater growth possibilities.

Correlations between real sales growth or CAPEX ratio and total and financial leverage

Table 2

Variables	(1) Sales growth	(2) Sales growth	(4) CAPEX ratio	(5) CAPEX ratio
Lag of dependent variable		–2.43e-08*** (6.52e-10)		–0.0000725 –0.0000971
Non-financial leverage	0.354*** (0.0147)	0.355*** (0.0157)	0.0261*** (0.00194)	0.0261*** (0.00210)
Financial leverage	0.0822*** (0.0163)	0.0553*** (0.0172)	0.0525*** (0.00233)	0.0528*** (0.00255)
Observations	226,312	189,050	226,312	195,574
R-squared	0.030	0.025	0.049	0.052
Number of firms	37,938	33,245	37,938	33,754

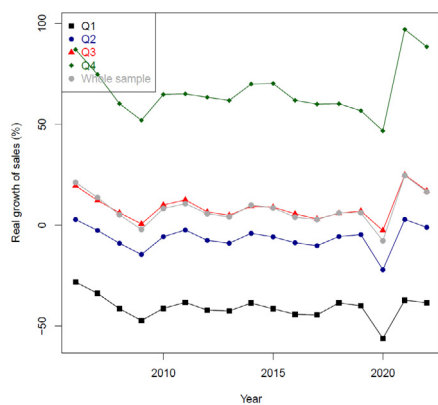
Robust standard errors clustered at the firm level in parentheses. ***p<0.01, **p<0.05, *p<0.1.

¹² The null hypothesis of equality of the coefficients of non-financial and financial leverage is rejected according to an F-test with p-value < 0.01 for the models with and without the lagged dependent variable.

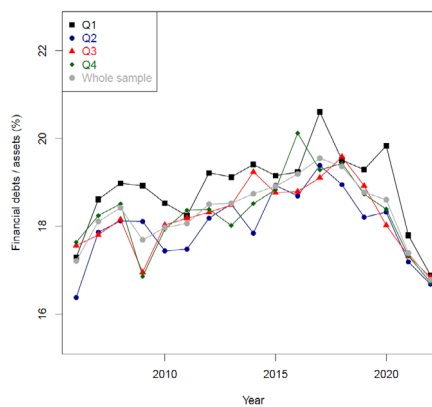
Average activity and financial performance of firms by quartiles of real growth of sales

Graph 14

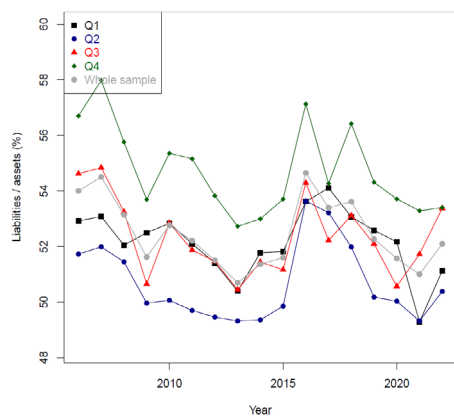
A Real growth of sales



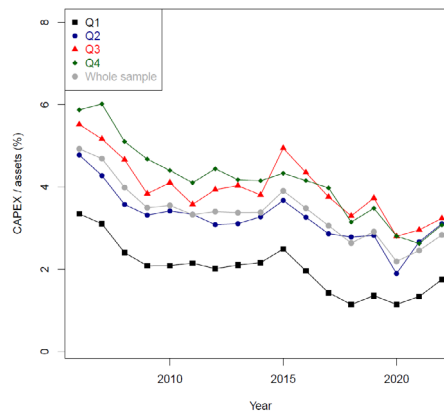
B Financial leverage



C Total leverage



D Capital expenditure



Note 1: This plot considers only firms with financial leverage.

Note 2: Each point represents the year-quartile simple average.

Sources: Superintendence of Corporations; Central Bank of Colombia calculations.

Mean difference test between quartiles (mean of row – mean of column, in percentage points)

Table 3

Variable		Q1	Q2	Q3	Q4
Sales growth	Q1		–34.6***	–50.2***	–108.5***
	Q2			–15.5***	–73.9***
	Q3				–58.4***
	Q4				
Financial leverage	Q1		0.8***	0.6***	0.6***
	Q2			–0.2*	–0.3**
	Q3				–0.1
	Q4				
Total leverage	Q1		1.5***	–0.2	–2.6***
	Q2			–1.7***	–4.1***
	Q3				–2.3***
	Q4				
CAPEX/assets	Q1		–1.3***	–2***	–2.1***
	Q2			–0.7***	–0.8***
	Q3				–0.1*
	Q4				

***p<0.01, **p<0.05, *p<0.1.

Sources: Superintendence of Corporations; Central Bank of Colombia calculations.

Percentage of firms in each sector by quartiles of real growth of sales

Table 4

Sector	2007					2012					2017					2022				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
Financial activities	5.6	2.0	1.8	4.4	3.4	5.4	2.0	2.5	4.9	3.7	7.2	3.0	2.7	5.5	4.6	3.8	2.3	2.1	7.1	3.8
Agricultural	8.9	6.7	6.1	6.1	6.9	5.1	4.8	5.9	7.8	5.9	3.8	4.0	6.5	10.6	6.2	13.6	7.1	3.5	3.3	6.9
Commerce	37.0	42.9	44.2	34.3	39.6	30.3	40.0	43.0	33.5	36.7	29.2	47.0	35.7	23.1	33.8	23.0	34.5	43.0	28.7	32.3
Construction	11.4	3.3	3.6	13.9	8.1	19.6	5.5	4.2	15.9	11.3	20.2	4.8	3.6	13.9	10.6	20.7	5.8	5.3	15.5	11.8
Electricity	0.4	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.3	0.2	0.2	0.3	0.4	0.3	0.5	0.2	0.1	0.2	0.2
Real estate business	16.3	16.7	12.4	18.3	15.9	17.6	18.3	18.7	21.2	18.9	24.7	18.2	25.9	27.3	24.0	22.8	27.9	24.1	30.8	26.4
Manufacturing	16.6	24.8	27.4	18.2	21.7	16.5	25.3	20.7	11.7	18.5	10.7	20.1	22.0	15.0	16.9	11.2	19.3	18.9	11.0	15.1
Mining	1.2	0.8	0.7	2.2	1.2	3.0	1.1	1.3	2.6	2.0	2.7	0.9	0.7	2.7	1.7	3.2	0.9	0.7	1.2	1.5
Other services	2.6	2.7	3.6	2.4	2.8	2.2	2.8	3.6	2.1	2.7	1.3	1.8	2.6	1.7	1.8	1.1	2.0	2.5	2.2	1.9

Source: Superintendence of Corporations; Central Bank of Colombia calculations .

Percentage of firms in each sector by quartiles of real growth of sales

Table 5

Size	2007					2012					2017					2022				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
Big	20.5	26.7	30.6	29.4	26.8	23.4	28.3	32.9	30.8	28.9	48.8	53.0	56.8	60.3	54.7	36.2	42.0	46.1	45.0	42.3
SME	79.5	73.3	69.4	70.6	73.2	76.6	71.7	67.1	69.2	71.1	51.2	47.0	43.2	39.7	45.3	63.8	58.0	53.9	55.0	57.7

Source: Superintendence of Corporations; Central Bank of Colombia calculations.

b. CAPEX ratios

Appendix 4 shows the distribution of the CAPEX/assets ratios for the whole 2006–22 period and for the same subperiods as in the foregoing subsection.¹³ The CAPEX ratio distribution is similar in the three subperiods. In general, the CAPEX ratios are positively related to sales growth and total leverage (Graph 15 and Table 6). The firms with the highest CAPEX ratios (fourth quartile) have significantly higher financial leverage ratios than other firms (Graph 15 and Table 6). Thus, in contrast to the case of sales growth, there seems to be a strong link between financial leverage and investment. These results generally hold for the firms in commerce and real estate, while manufacturing firms exhibit a weaker relationship between CAPEX ratios and total leverage (Appendix 5). Large enterprises display a stronger relationship between CAPEX ratios and financial leverage, with the average firm in a higher quartile exhibiting larger financial leverage ratios than average firms in lower quartiles (Appendix 6). By contrast, the relationship between CAPEX ratios and sales growth for large firms holds only when comparing the fourth quartile with the rest. The link between total leverage and CAPEX ratios is weak for SMEs relative to the overall sample (Appendix 6).

Firms belonging to the manufacturing, mining and agricultural sectors account for larger shares in the fourth quartile of the CAPEX ratio distribution than in the overall sample for some selected years (Table 7). Likewise, large enterprises represent a relatively larger fraction of the firms with the highest CAPEX ratios (Table 8).

c. Some features of the banks that finance the fast-growing and high CAPEX ratio firms

Finally, we briefly explore the characteristics of the banks that are more exposed to fast-growing or high CAPEX ratio firms. Are they usually the same institutions? Do they differ from other banks in some basic dimensions like profitability, interest revenue, ex post credit risk or operational efficiency? For this purpose, we compute the exposure of banks to firms located in the fourth quartiles of the sales growth and CAPEX ratio distributions. This is measured as the percentage of each bank's commercial loans that has been granted to firms in the fourth quartiles of those distributions. We then construct the distribution of banks for these measures (Appendix 7) and identify those banks that are in the fourth quartile of these distributions.

We found that few banks systematically exhibit high exposures to fast-growing firms (Table 9). For example, only four out of 29 banks belonged to the fourth quartile of the corresponding distribution in more than a third of the years between 2006 and 2022. By contrast, a larger fraction of banks is systematically exposed to high CAPEX ratio firms (Table 10). Eight out of 24 banks belonged to the fourth quartile of the corresponding distribution in more than a third of the years between 2006 and 2022. We also found that banks that are highly exposed to fast-growing and high CAPEX ratio firms generally display lower levels of profitability (measured as the return on assets – ROA), non-performing loans (NPL ratio) and operational efficiency than other

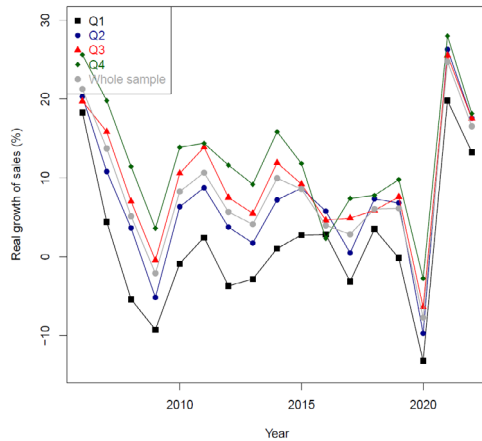
¹³ CAPEX is defined as the annual change in fixed assets (property, plant and equipment) plus depreciation expenditures.

banks (Graphs 16 and 17). Interest revenue (as a fraction of performing commercial loans) is similar for both groups of banks.

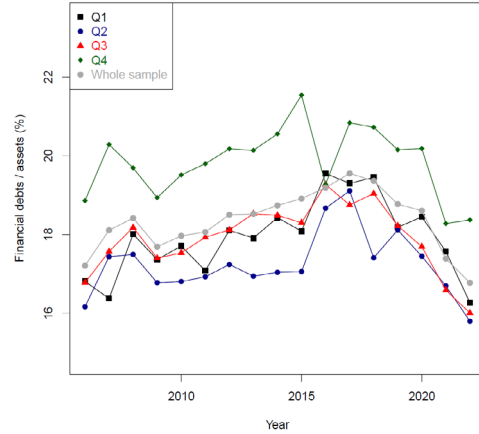
Average activity and financial performance of firms by quartiles of the CAPEX ratio

Graph 15

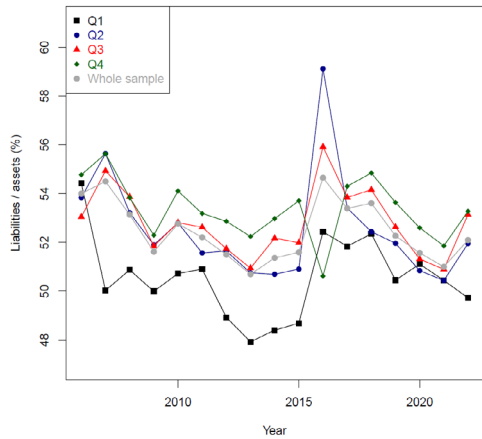
A Real growth of sales



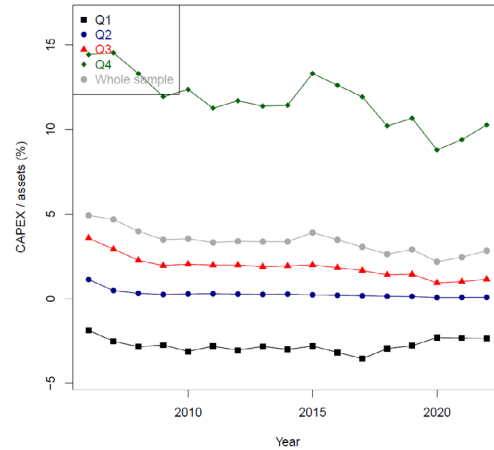
B Financial leverage



C Total leverage



D Capital expenditure



Note: Each point represents the year-quartile simple average.

Sources: Superintendence of Corporations; Central Bank of Colombia calculations.

Mean difference test between quartiles (mean of row – mean of column, percentage points)

Table 6

Variable		Q1	Q2	Q3	Q4
Sales growth	Q1		–4.8***	–7.6***	–10.6***
	Q2			–2.8***	–5.8***
	Q3				–3***
	Q4				
Financial leverage	Q1		0.7***	0	–1.9***
	Q2			–0.7***	–2.6***
	Q3				–2***
	Q4				
Total leverage	Q1		–2.1***	–2.3***	–2.9***
	Q2			–0.2	–0.8***
	Q3				–0.6***
	Q4				
CAPEX/assets	Q1		–3.2***	–5.2***	–15.4***
	Q2			–1.9***	–12.1***
	Q3				–10.2***
	Q4				

*** p<0.01, ** p<0.05, * p<0.1.

Sources: Superintendence of Corporations; Central Bank of Colombia calculations

Percentage of firms in each sector by quartiles of CAPEX/assets

Table 7

Sector	2007					2012					2017					2022				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
Financial activities	8.9	3.5	1.8	1.5	3.9	8.9	4.7	1.5	1.4	4.2	9.4	5.9	2.3	1.6	5.1	7.3	5.3	2.5	1.5	4.4
Agricultural	8.1	5.1	5.7	9.2	7.0	7.1	4.9	5.2	7.2	6.2	5.2	4.3	6.6	8.6	6.3	6.1	5.8	6.5	8.9	6.9
Commerce	30.8	48.8	40.6	32.3	38.1	27.5	42.2	39.7	32.1	34.9	25.0	38.8	39.0	32.2	32.6	23.7	35.6	39.3	31.1	30.9
Construction	11.2	9.3	6.4	7.5	8.6	15.8	12.1	8.6	10.3	11.8	14.8	12.5	7.7	7.5	10.8	16.8	14.7	8.7	8.0	12.3
Electricity	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.5	0.3	0.3	0.3	0.2	0.3	0.3
Real state business	24.6	13.7	14.1	15.7	17.0	24.0	17.7	17.3	19.6	19.8	31.6	24.6	20.0	20.7	24.8	34.8	26.5	21.5	22.0	27.3
Manufacturing	12.6	16.6	27.6	26.6	20.8	11.2	14.9	23.1	21.5	17.6	10.2	11.0	21.2	23.0	16.3	8.3	9.3	17.9	22.4	14.4
Mining	1.5	0.7	0.9	2.7	1.4	3.2	1.1	1.5	4.2	2.5	2.2	1.2	1.2	3.2	2.1	1.3	1.1	1.2	3.2	1.7
Other services	2.2	2.2	2.7	4.3	2.8	2.1	2.3	2.7	3.5	2.6	1.4	1.4	1.8	2.7	1.8	1.4	1.6	2.1	2.7	1.9

Source: Superintendence of Corporations; Central Bank of Colombia calculations.

Percentage of firms in each size by quartiles of CAPEX/assets

Table 8

Size	2007					2012					2017					2022				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
Big	17.2	28.3	32.2	27.6	26.3	20.1	28.7	35.3	30.6	28.4	48.8	56.0	57.1	59.3	54.7	32.6	43.7	47.7	49.5	41.9
SME	82.8	71.7	67.8	72.4	71.6	79.9	71.3	64.7	69.4	71.6	51.2	44.0	42.9	40.7	45.3	67.4	56.3	52.3	50.5	58.1

Sources: Superintendence of Corporations; Central Bank of Colombia calculations.

Percentage of years in the fourth quartile of exposure to fast-growing firms by subperiods

Table 9

Bank	Initial	Mid	COVID	Total
Bank 1	14.3	0.0	0.0	5.9
Bank 2	57.1	14.3	0.0	29.4
Bank 3	14.3	0.0	0.0	5.9
Bank 4	42.9	0.0	0.0	17.6
Bank 5	28.6	28.6	0.0	23.5
Bank 6	14.3	0.0	33.3	11.8
Bank 7	0.0	0.0	33.3	5.9
Bank 8	42.9	0.0	66.7	29.4
Bank 9	0.0	57.1	0.0	23.5
Bank 10	0.0	100.0	100.0	58.8
Bank 11	57.1	28.6	33.3	41.2
Bank 12	0.0	57.1	0.0	23.5
Bank 13	0.0	14.3	0.0	5.9
Bank 14	0.0	0.0	33.3	5.9
Bank 15	28.6	0.0	0.0	11.8
Bank 16	57.1	71.4	66.7	64.7
Bank 17	0.0	28.6	0.0	11.8
Bank 18	0.0	14.3	0.0	5.9
Bank 19	28.6	0.0	0.0	11.8
Bank 20	14.3	0.0	0.0	5.9
Bank 21	28.6	0.0	0.0	11.8
Bank 22	0.0	0.0	33.3	5.9
Bank 23	0.0	57.1	0.0	23.5
Bank 24	57.1	0.0	0.0	23.5
Bank 25	42.9	28.6	33.3	35.3
Bank 26	14.3	14.3	33.3	17.6
Bank 27	14.3	0.0	0.0	5.9
Bank 28	42.9	0.0	0.0	17.6
Bank 29	14.3	0.0	0.0	5.9

Note: *Initial* comprehends years 2006-12; *Medium*, years 2013-19; and *COVID*, years 2020-22.

Sources: Superintendence of Corporations; Central Bank of Colombia calculations.

Percentage of years in the fourth quartile of exposure to high CAPEX ratio firms by subperiods

Table 10

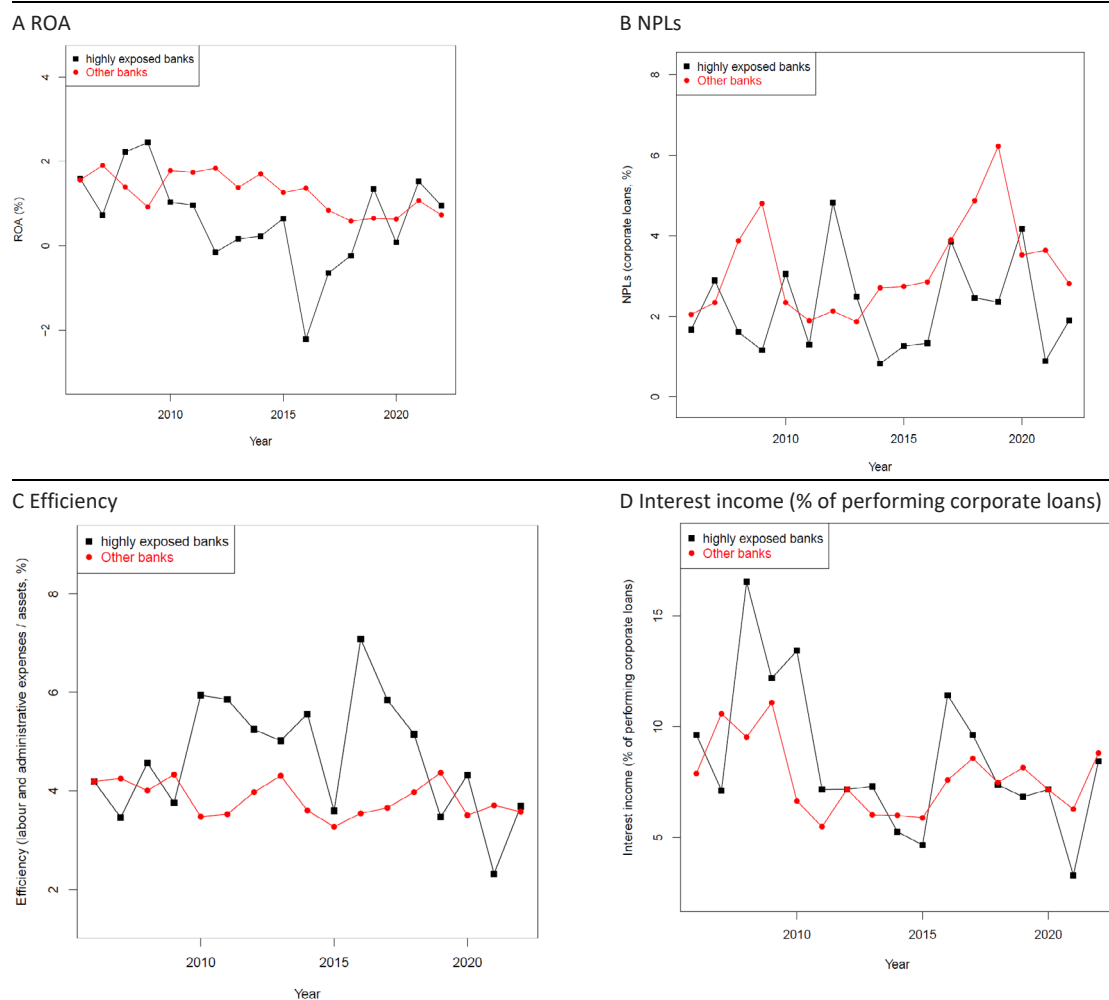
Bank	Initial	Mid	COVID	Total
Bank 1	0.0	14.3	0.0	5.9
Bank 2	85.7	14.3	0.0	41.2
Bank 3	14.3	14.3	0.0	11.8
Bank 4	14.3	14.3	100.0	29.4
Bank 5	71.4	14.3	0.0	35.3
Bank 6	28.6	28.6	33.3	29.4
Bank 7	0.0	0.0	33.3	5.9
Bank 8	14.3	42.9	66.7	35.3
Bank 9	0.0	42.9	100.0	35.3
Bank 10	57.1	28.6	0.0	35.3
Bank 11	0.0	57.1	0.0	23.5
Bank 12	0.0	0.0	33.3	5.9
Bank 13	42.9	71.4	66.7	58.8
Bank 14	0.0	14.3	0.0	5.9
Bank 15	57.1	57.1	0.0	47.1
Bank 16	71.4	14.3	0.0	35.3
Bank 17	14.3	0.0	0.0	5.9
Bank 18	14.3	0.0	0.0	5.9
Bank 19	0.0	42.9	0.0	17.6
Bank 20	28.6	14.3	0.0	17.6
Bank 21	14.3	0.0	0.0	5.9
Bank 22	42.9	14.3	0.0	23.5
Bank 23	42.9	0.0	0.0	17.6
Bank 24	14.3	0.0	0.0	5.9

Note: *Initial* comprehends years 2006-12; *Medium*, years 2013-19; and *COVID*, years 2020-22.

Sources: Superintendence of Corporations; Central Bank of Colombia calculations.

Average evolution of performance indicators of banks in the fourth quartile of exposure to fast-growing firms and other banks

Graph 16



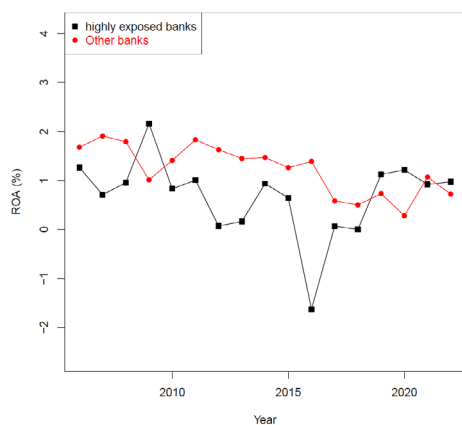
Note: For “highly exposed banks”, each point represents the year-quartile simple average.

Sources: Superintendence of Corporations; Central Bank of Colombia calculations.

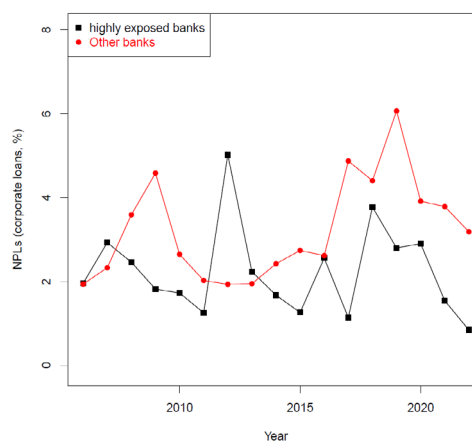
Average evolution of performance indicators of banks in the fourth quartile of exposure to high CAPEX ratio firms and other banks

Graph 17

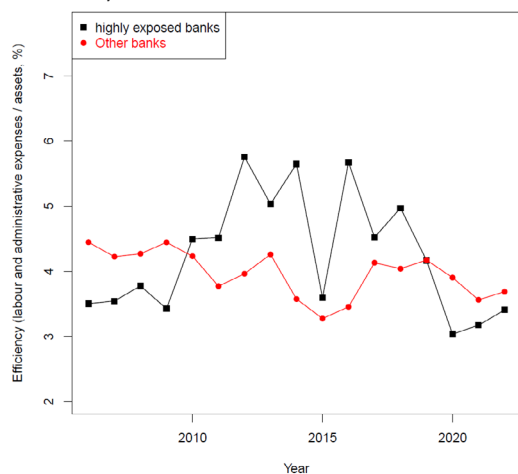
A ROA



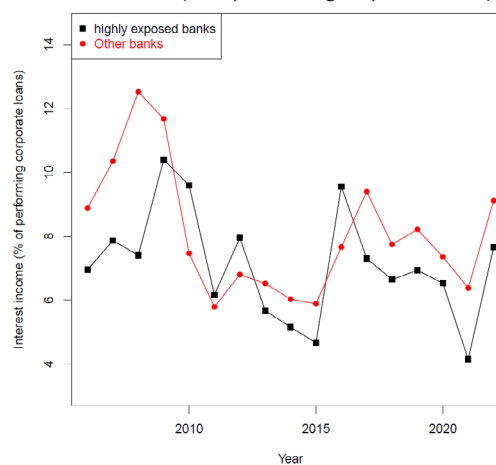
B NPL



C Efficiency



D Interest income (% of performing corporate loans)



Note: For "highly exposed banks", each point represents the year-quartile simple average.

Sources: Superintendence of Corporations; Central Bank of Colombia calculations.

4. Conclusions

After a prolonged period of continuous increase, the ratio of commercial local bank loans to GDP has followed a declining trend since 2016. Although there is evidence of some substitution of funding sources in favour of local input supplier credit and foreign parent company loans, overall corporate debt as a percentage of GDP stagnated between 2016 and 2019, and has fallen in recent years, after exhibiting some volatility during the pandemic. These dynamics are not the reflection of a balance sheet deleveraging process, since total corporate leverage (total liabilities/assets) has exhibited an upward trend, with a peak in 2016. Nevertheless, financial leverage (financial liabilities/assets) has declined, as accounts payable and other liabilities have gained participation in overall corporate debt. The slowdown in financial liabilities coincided with the decrease in the investment-to-GDP ratio that was part of the macroeconomic adjustment to a sharp deterioration of terms of trade between 2014 and 2016.

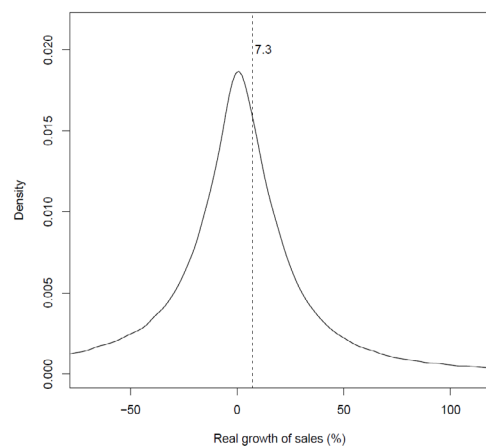
An exploration of disaggregated firm data indicates that fast-growing enterprises (measured by their real sales growth) typically belong to the construction, real estate, financial services and mining sectors, exhibit high CAPEX-to-asset ratios, and tend to be large. They display greater total leverage ratios, but their relative reliance on financial liabilities is less clear. Interestingly, financial leverage is higher for the slowest-growing firms. Also, few banks systematically show large exposures to high-growth firms. However, without an examination of the dynamics of individual firms, it is difficult to reach clear conclusions about the importance of financial intermediation for firm growth. For example, one possible benevolent interpretation of these findings is that local banks finance small, initially slow-growing firms, but the latter eventually develop and grow faster. An alternative, less benevolent interpretation could be simply that banks fund permanently slow-growing firms.

On the other hand, financial leverage is higher for firms that exhibit large CAPEX-to-asset ratios. These firms are typically large, display high sales growth and belong to the manufacturing, agricultural or mining sectors. About one third of a sample of banks are systematically exposed to high CAPEX ratio firms. Thus, the association between financial intermediation and investment seems to be stronger than that between financial intermediation and sales growth. Overall, then, the disaggregated firm data examined suggest a contribution of financial intermediation to economic growth, mostly through the financing of investment.

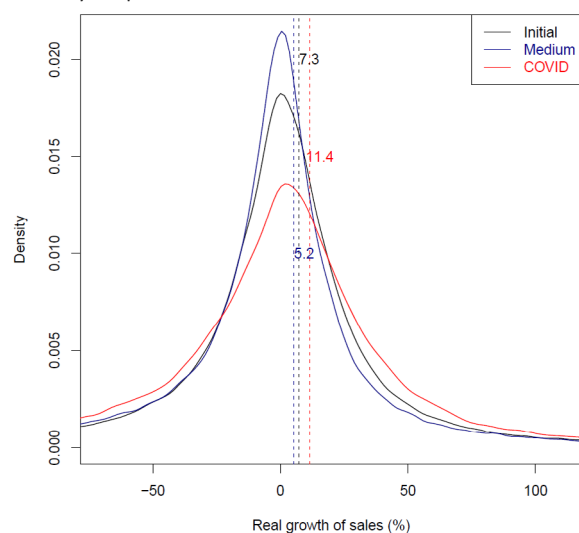
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A. Whole period (2006–22)



B. By subperiods



Note 1: Vertical dashed lines and labels refer to the average.

Note 2: *Initial* comprehends years 2006–12; *Medium*, years 2013–19; and *COVID*, years 2020–22.

Sources: Superintendence of Corporations; Central Bank of Colombia calculations.

Sales growth quartile differences of leverage, financial leverage and CAPEX ratios for selected sectors

Mean difference test between quartiles (mean of row – mean of column, percentage points)

Appendix 2

Commerce

Variable		Q1	Q2	Q3	Q4
Sales growth	Q1		-26.9***	-39.9***	-73.7***
	Q2			-13***	-46.7***
	Q3				-33.8***
	Q4				
Financial leverage	Q1		1.4***	1.1***	0.8***
	Q2			-0.3	-0.6***
	Q3				-0.3*
	Q4				
Total leverage	Q1		0.5**	-1.3***	-4.1***
	Q2			-1.8***	-4.6***
	Q3				-2.8***
	Q4				
CAPEX/assets	Q1		-0.8***	-1.3***	-1.8***
	Q2			-0.5***	-1***
	Q3				-0.5***
	Q4				

*** p<0.01, ** p<0.05, * p<0.1.

Sources: Superintendence of Corporations; Central Bank of Colombia calculations.

Manufacturing

Variable		Q1	Q2	Q3	Q4
Sales growth	Q1		-22.8***	-34.8***	-61.8***
	Q2			-12***	-39***
	Q3				-26.9***
	Q4				
Financial leverage	Q1		0.9***	0.9***	0.6*
	Q2			0	-0.3
	Q3				-0.3
	Q4				
Total leverage	Q1		2.1***	1.2***	-2.7***
	Q2			-0.9***	-4.8***
	Q3				-3.8***
	Q4				
CAPEX/assets	Q1		-1.1***	-1.6***	-2***
	Q2			-0.6***	-0.9***
	Q3				-0.4***
	Q4				

*** p<0.01, ** p<0.05, * p<0.1.

Sources: Superintendence of Corporations; Central Bank of Colombia calculations.

Real estate

Variable		Q1	Q2	Q3	Q4
Sales growth	Q1		-37.7***	-53.8***	-128.6***
	Q2			-16.2***	-91***
	Q3				-74.8***
	Q4				
Financial leverage	Q1		1.5***	1.1***	0.6*
	Q2			-0.4	-0.9***
	Q3				-0.5*
	Q4				
Total leverage	Q1		2.7***	0.6	-2.7***
	Q2			-2.1***	-5.5***
	Q3				-3.3***
	Q4				
CAPEX/assets	Q1		-1.2***	-1.9***	-2.4***
	Q2			-0.7***	-1.2***
	Q3				-0.5***
	Q4				

*** p<0.01, ** p<0.05, * p<0.1.

Sources: Superintendence of Corporations; Central Bank of Colombia calculations.

Sales growth quartile differences of leverage, financial leverage and CAPEX ratios by firm size

Mean difference test between quartiles (mean of row – mean of column, percentage points)

Appendix 3

SMEs

Variable		Q1	Q2	Q3	Q4
Sales growth	Q1		-35.2***	-51.4***	-102.7***
	Q2			-16.1***	-67.5***
	Q3				-51.3***
	Q4				
Financial leverage	Q1		1.4***	1.9***	1.8***
	Q2			0.4***	0.4***
	Q3				-0.1
	Q4				
Total leverage	Q1		1.1***	-0.1	-1.9***
	Q2			-1.2***	-3***
	Q3				-1.8***
	Q4				
CAPEX/assets	Q1		-1.3***	-1.9***	-2.3***
	Q2			-0.6***	-0.9***
	Q3				-0.3***
	Q4				

*** p<0.01, ** p<0.05, * p<0.1.

Sources: Superintendence of Corporations; Central Bank of Colombia calculations.

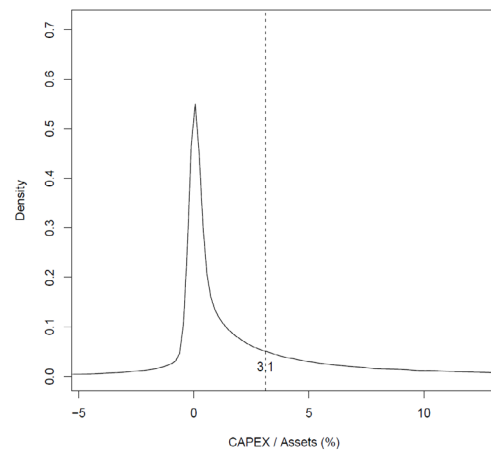
Large enterprises

Variable		Q1	Q2	Q3	Q4
Sales growth	Q1		-32.9***	-47.4***	-121.2***
	Q2			-14.6***	-88.3***
	Q3				-73.8***
	Q4				
Financial leverage	Q1		0.2	-0.3	-0.4*
	Q2			-0.5***	-0.5***
	Q3				-0.1
	Q4				
Total leverage	Q1		1.8***	-0.6**	-3.6***
	Q2			-2.4***	-5.5***
	Q3				-3***
	Q4				
CAPEX/assets	Q1		-1.3***	-2***	-1.8***
	Q2			-0.7***	-0.5***
	Q3				0.2**
	Q4				

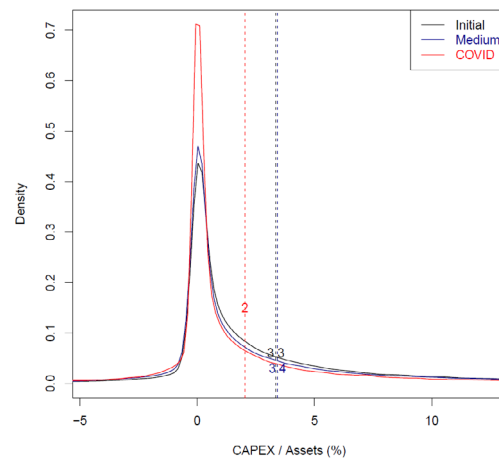
*** p<0.01, ** p<0.05, * p<0.1.

Sources: Superintendence of Corporations; Central Bank of Colombia calculations.

A. Whole period (2006–22)



B. By subperiods



Note 1: Vertical dashed lines and labels refer to the average.

Note 2: *Initial* comprehends years 2006–12; *Medium*, years 2013–19; and *COVID*, years 2020–22.

Sources: Superintendence of Corporations; Central Bank of Colombia calculations.

CAPEX ratio quartile differences of leverage, financial leverage and CAPEX ratios for selected sectors

Mean difference test between quartiles (mean of row – mean of column, percentage points)

Appendix 5

Commerce

Variable		Q1	Q2	Q3	Q4
Sales growth	Q1		-6.6***	-9.8***	-11.8***
	Q2			-3.2***	-5.1***
	Q3				-1.9***
	Q4				
Financial leverage	Q1		0.8***	0.1	-1.7***
	Q2			-0.7***	-2.5***
	Q3				-1.8***
	Q4				
Total leverage	Q1		-1.8***	-2.1***	-2.2***
	Q2			-0.3	-0.5**
	Q3				-0.2
	Q4				
CAPEX/assets	Q1		-2.5***	-4.3***	-13.2***
	Q2			-1.7***	-10.7***
	Q3				-8.9***
	Q4				

*** p<0.01, ** p<0.05, * p<0.1.

Sources: Superintendence of Corporations; Central Bank of Colombia calculations.

Manufacturing

Variable		Q1	Q2	Q3	Q4
Sales growth	Q1		-6.1***	-8.9***	-10.1***
	Q2			-2.8***	-4***
	Q3				-1.2***
	Q4				
Financial leverage	Q1		0.1	-1.3***	-3.3***
	Q2			-1.4***	-3.4***
	Q3				-2***
	Q4				
Total leverage	Q1		1.4***	0.4	-1.7***
	Q2			-1***	-3.1***
	Q3				-2.1***
	Q4				
CAPEX/assets	Q1		-3.2***	-6.2***	-15.6***
	Q2			-2.9***	-12.4***
	Q3				-9.4***
	Q4				

*** p<0.01, ** p<0.05, * p<0.1.

Sources: Superintendence of Corporations; Central Bank of Colombia calculations.

Real estate

Variable		Q1	Q2	Q3	Q4
Sales growth	Q1		0.7	-5.3***	-9.2***
	Q2			-6***	-9.9***
	Q3				-3.9***
	Q4				
Financial leverage	Q1		1.6***	0.9***	-2.1***
	Q2			-0.7**	-3.6***
	Q3				-3***
	Q4				
Total leverage	Q1		-2***	-6.4***	-7.4***
	Q2			-4.3***	-5.4***
	Q3				-1***
	Q4				
CAPEX/assets	Q1		-3.9***	-5.4***	-17.2***
	Q2			-1.4***	-13.2***
	Q3				-11.8***
	Q4				

*** p<0.01, ** p<0.05, * p<0.1.

Sources: Superintendence of Corporations; Central Bank of Colombia calculations.

CAPEX ratio quartile differences of leverage, financial leverage and CAPEX ratios by firm size

Mean difference test between quartiles (mean of row – mean of column, percentage points)

Appendix 6

SMEs

Variable		Q1	Q2	Q3	Q4
Sales growth	Q1		-5.7***	-10.3***	-13***
	Q2			-4.5***	-7.2***
	Q3				-2.7***
	Q4				
Financial leverage	Q1		1.3***	1.1***	-0.9***
	Q2			-0.1	-2.1***
	Q3				-2***
	Q4				
Total leverage	Q1		-2.1***	-2***	-2.2***
	Q2			0.1	-0.1
	Q3				-0.2
	Q4				
CAPEX/assets	Q1		-3.5***	-5.2***	-15.4***
	Q2			-1.7***	-11.9***
	Q3				-10.3***
	Q4				

*** p<0.01, ** p<0.05, * p<0.1.

Sources: Superintendence of Corporations; Central Bank of Colombia calculations.

Large enterprises

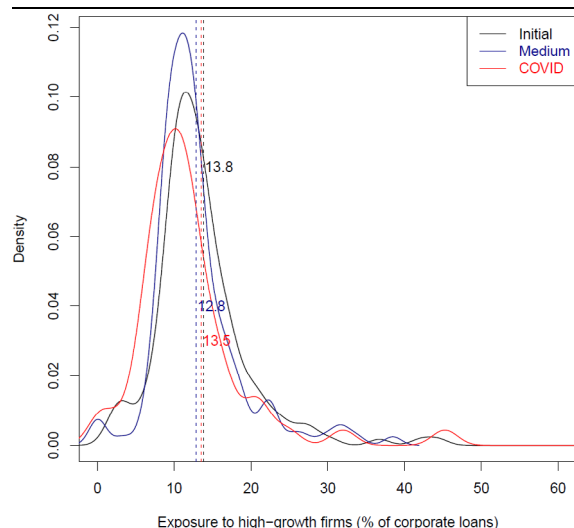
Variable		Q1	Q2	Q3	Q4
Sales growth	Q1		-0.1	1	-2.6***
	Q2			1.1	-2.5***
	Q3				-3.6***
	Q4				
Financial leverage	Q1		-0.6***	-1.3***	-3.2***
	Q2			-0.7***	-2.6***
	Q3				-1.9***
	Q4				
Total leverage	Q1		-3.1***	-3***	-4.2***
	Q2			0	-1.2***
	Q3				-1.2***
	Q4				
CAPEX/assets	Q1		-2.6***	-4.9***	-15***
	Q2			-2.3***	-12.4***
	Q3				-10.1***
	Q4				

*** p<0.01, ** p<0.05, * p<0.1.

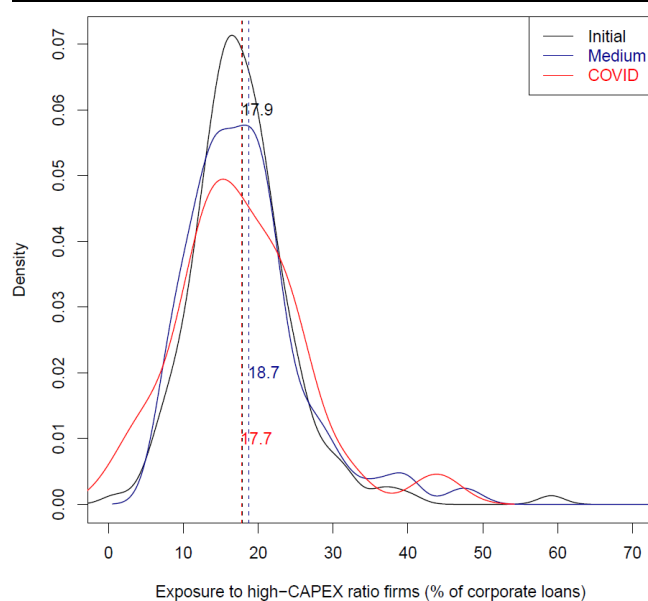
Sources: Superintendence of Corporations; Central Bank of Colombia calculations.

Distribution of banks according to their exposure to fast-growing firms

Appendix 7



Distribution of banks according to their exposure to high CAPEX ratio firms



Note 1: Vertical dashed lines and labels refer to the average.

Note 2: 118 *Initial* comprehends years 2006–12; *Medium*, years 2013–19; and *COVID*, years 2020–22.

Sources: Superintendence of Corporations; Central Bank of Colombia calculations.

The changing nature of the financial system: implications for resilience and long-term growth in emerging market economies (EMEs)

EME financial systems: what has changed?

Czech National Bank

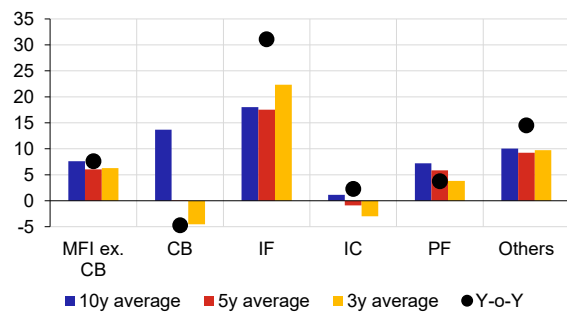
Evolution of the financial system in the Czech Republic

In 2023 Q3, the total assets of the key segments within the Czech financial sector reached CZK 17.8 trillion (USD 770 bn.), with the banking sector holding a dominant position (MFIs and central bank assets accounted for 74%). There have been no significant changes in the relative importance of various forms of financial intermediation in the Czech Republic in recent years despite the notable expansion in the investment funds sector (see Chart 1). The Covid-19 pandemic did not leave any significant imprint in terms of eroding long-term trends either. The banking sector continues to be the primary source of financing, overshadowing non-bank institutions and capital market funding. Additionally, the banking sector's share is increasing gradually, mirroring the rise in household debt within total private non-financial sector debt (see Chart 2). Apart from the financial sector, many domestic non-financial companies have traditionally been financed from abroad. These cross-border exposures are largely attributed to significant foreign direct investment (FDI) and intercompany financing from foreign parent companies to their Czech subsidiaries and between local subsidiaries (see Chart 2, the purple and red areas). This can be partially ascribed to the relatively small size of the capital market, which lacks appeal for foreign investors. Instead, foreign investors tend to prefer FDI as their primary avenue for investment in the Czech economy.

The combined assets of NBFIs (insurance companies, pension funds and investment funds) totaled around CZK 2.7 trillion (USD 121 bn.) in 2023 Q2 and were significantly dwarfed by the scale of the banking sector – CZK 10.3 trillion CZK (around USD 462 bn.). The growth in assets under the management of investment funds, particularly in equity, mixed funds, and funds for qualified investors, partially mitigates the dominant role of the banking sector. However, due to limited opportunities to invest in domestic companies' stocks and bonds within the small financial market (as discussed in detail later), these investments often flow abroad, resulting in a minimal impact on financing within a domestic economy. Chart 4 displays inflows and outflows from investment funds during the Covid-19 pandemic. As can be seen, most of the funds, with the exception of bond funds, did not record significant outflows during 2020 and the Covid-19 pandemic did not result in a notable change in the recent upward trend in the popularity of investment funds.

Chart 1: Average and current growth rates of segments of the financial sector

(Y-o-Y growth rates as of 30 September 2023)

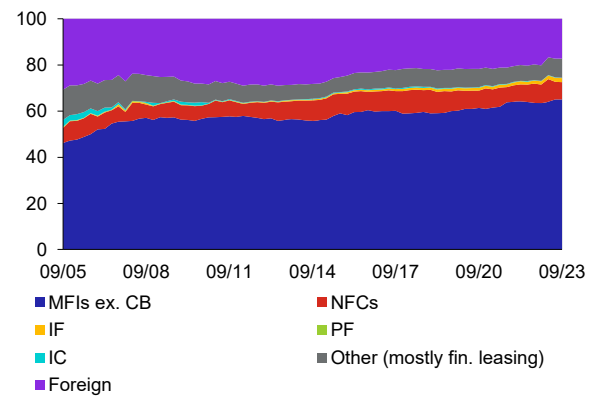


Note: MFI ex. CB = Monetary financial institutions excluding the central bank, CB = Central bank, IF = Investment funds, IC = Insurance companies, PF = Pension funds. Others consists mainly of other financial institutions (mostly financial leasing) and captive and holding companies. The contribution of captive and holding companies to the standard functions of financial institutions including lending, maturity or liquidity transformation may be limited due to the nature of these companies.

Source: Quarterly financial accounts

Chart 2: Creditor structure of the domestic private non-financial sector

(share in %)

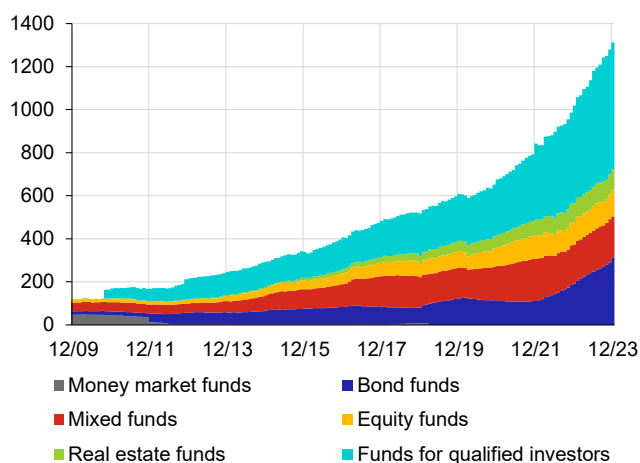


Note: MFI ex. CB = Monetary financial institutions excluding the central bank, CB = Central bank, IF = Investment funds, IC = Insurance companies, PF = Pension funds. Others consists mainly of other financial institutions (mostly financial leasing) and captive and holding companies.

Source: Quarterly financial accounts

Chart 3: Investment fund sector – Assets under management

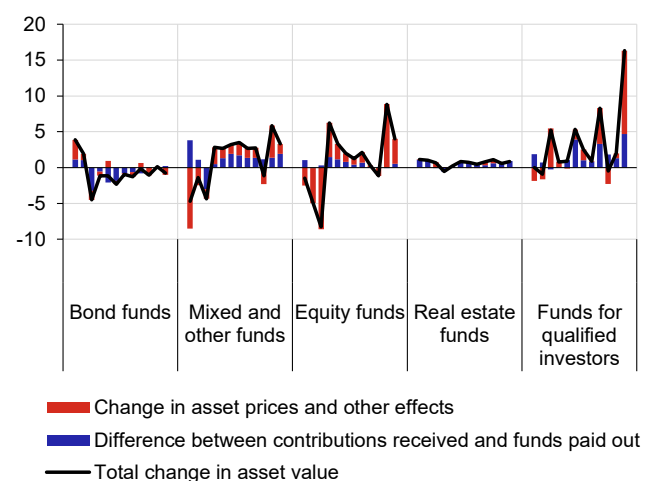
(CZK billions)



Source: CNB.

Chart 4: Decomposition of the change in the value of investment funds' assets by investment policy in 2020

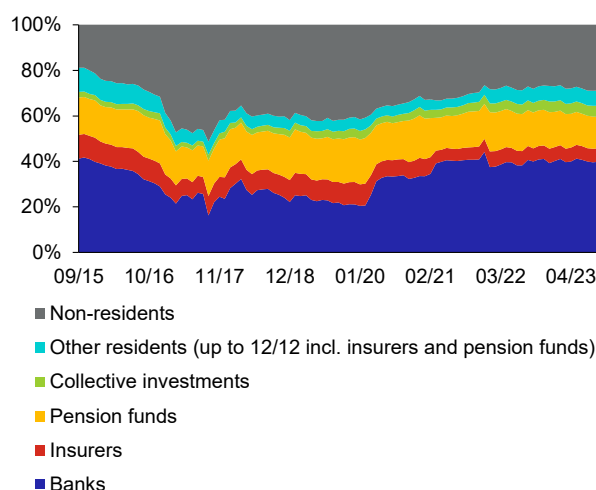
(CZK billions; x-axis: individual months of 2020)



Source: CNB.

In hindsight, there was a relatively short-lived episode of massive portfolio investment inflows to CZK in 2017, which can be attributed to the specific monetary policy regime at the time (foreign exchange rate commitment) and its subsequent termination. These inflows translated into a high share of foreign holders of government bonds, which changed the investor base for some time (see Chart 5) while having a temporary impact on long-term interest rates in the economy and long-term financing due to a drop in portfolio risk premium (see Chart 6). However, the share of foreign holders has been gradually decreasing since the end of 2017. On the contrary, particularly with the onset of the Covid-19 pandemic, there was an outflow of foreign investors from Czech government bonds. This outflow resulted in a decrease in the share of foreign investors from 41% (February 2020) to 32% (December 2020).

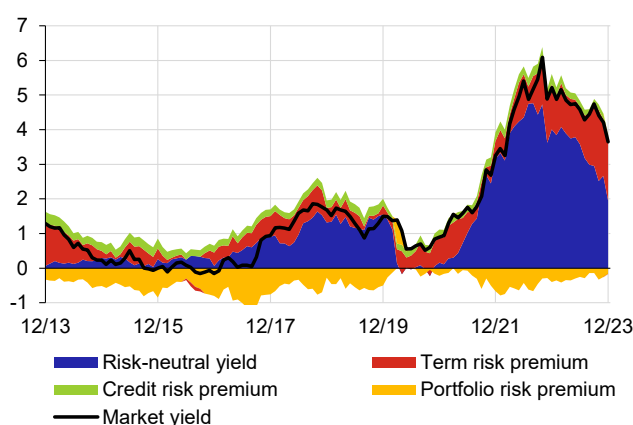
Chart 5: Holders of Czech government bonds
(share in %)



Source: Czech Ministry of Finance .

Chart 6: Decomposition of five-year Czech government bond yield
(%)

(%)



Source: CNB.

Role of state-owned banks and development banks in the financial system

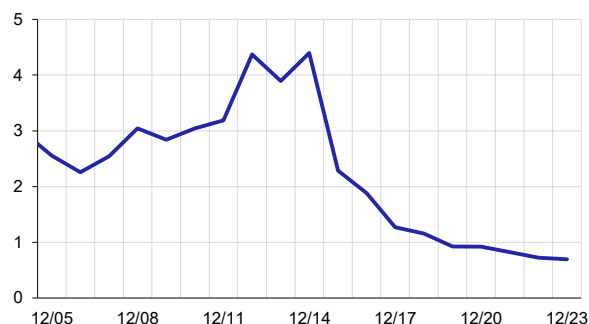
The Czech Export Bank (CEB)¹ and the National Development Bank (NDB)² have operated in the Czech credit market since their establishment in the 1990s. There have been no significant changes in their role in the economy or lending strategy in recent years. Due to their business model and narrow scope of activities, their credit market share remains low (see Charts 7,8) and their impact on long-term growth and employment is very limited.

¹ The CEB focuses on supporting large and strategic export projects and Czech exporting firms. Its traditional counterpart sectors are export-oriented industries such as construction, energy, and manufacturing.

² The NDB focuses mainly on specialized support loans and state-backed guarantee products for predominantly small and medium-sized enterprises.

Chart 7: Share of state-owned banks' assets in total banking sector assets

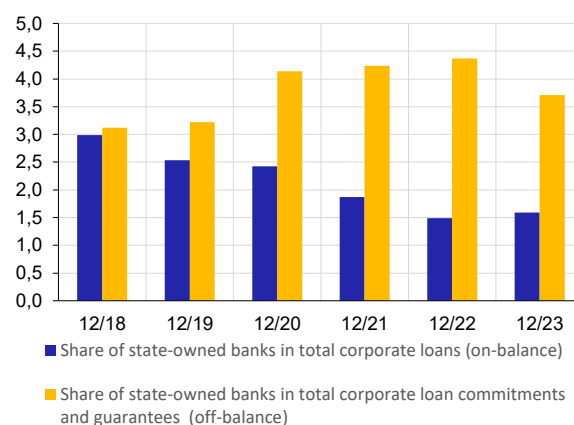
(%)



Source: CNB, Public Financial Statements.

Chart 8: Share of state-owned banks' corporate loans and corporate commitments and guarantees

(%)



Source: CNB, Public Financial Statements.

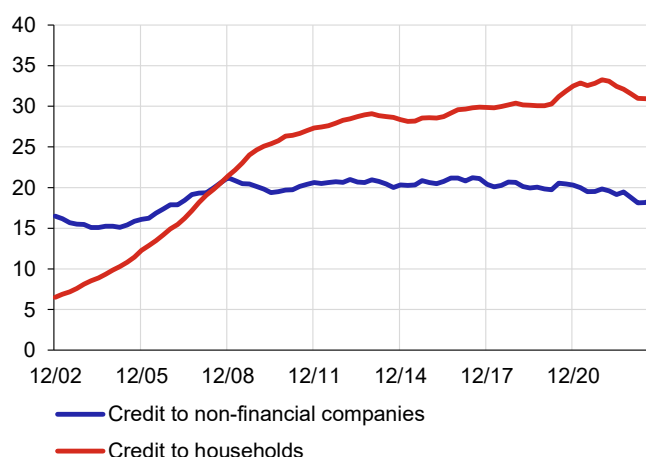
The pandemic did not have any significant effect on the CEB's business model or strategy. The NDB served as the primary distributor of specialized state-backed guarantee products to support SMEs during the business disruptions caused by the pandemic. The guarantees provided covered 16% of the private banking sector's SME loan portfolio.

There are initiatives aimed at enhancing the existing structure of state-owned banks and expanding their product offerings to include venture capital, green finance, and other supportive areas. However, no definite strategy has been presented thus far.

Evolution of the changes in the sectoral allocation of credit

From 2002 until recently, the share of household loans in GDP was growing and exceeded 30%. Since 2008, the share of loans of non-financial companies to GDP has stalled and has been lower than the share of loans to households. The difference between these two sectors has grown gradually (see Chart 9). The composition of household loans is dominated by mortgage loans, which are responsible for the significant increase in the share of household loans in GDP.

Chart 9: Credit to GDP in the Czech Republic by two main sectors (%)



Source: CNB.

The size of mortgage loan portfolios in commercial banks has grown gradually over time, and mortgage lending has become an important item on banks' balance sheets. The associated risks have been mitigated at the macro level by the CNB's macroprudential policies since 2015.³

The allocation of finance and long-term growth

Bank intermediation and capital markets: roles in financing long-run growth

Overall, there have been no significant shifts in the relative importance of bank intermediation and capital markets, as the latter continue to play a very limited role in long-run growth financing.

In 2023, the equity market recorded a decrease of around 25% in traded volumes; the total turnover was around CZK 123 billion (Chart 10). Nearly 98% of the turnover took place on the PRIME market (consisting of 10 stocks). The total turnover recorded on the regulated bond market was under CZK 10 billion and thus remained very low. The majority of trading volume on regulated markets has been driven by corporate bonds, as Czech government bonds are mainly traded with primary dealers. On the other hand, financial institutions, especially banks, have issued relatively large amounts of corporate bonds in recent years (see Chart 11). These issuances occurred, among other reasons, to meet MREL (Minimum Requirement for Own Funds and Eligible Liabilities) requirements. Considering the low liquidity and the continental

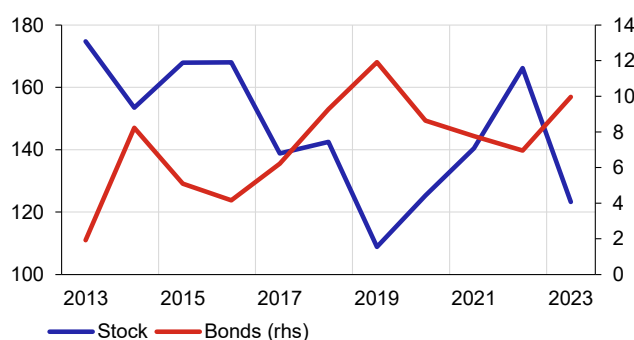
³ <https://www.cnb.cz/en/financial-stability/macprudential-policy/requirements-for-ltv-dsti-and-dti-limits/>.

type of financial system, where the dominant share of financing goes through banking credit, IPO activity remains subdued. The limited liquidity transfer function of the Czech financial market can also be demonstrated by the share of domestic listings in GDP (see Chart 12), which is not only significantly below the euro area average, but also below its CEE peers. Chart 12 also indicates that there have been no significant shifts in financing trends in the Czech economy recently.

In summary, the financial markets remain relatively small in the Czech Republic, and their liquidity transfer function is very limited compared to the banking sector. This is further illustrated by the fact that the monthly volumes of traded corporate securities (both equities and bonds) are less than 3% of the volume traded on the Czech government bond market (MTS Czech Republic), as depicted in Chart 13.

Chart 10: Yearly trading volume on Prague Stock Exchange

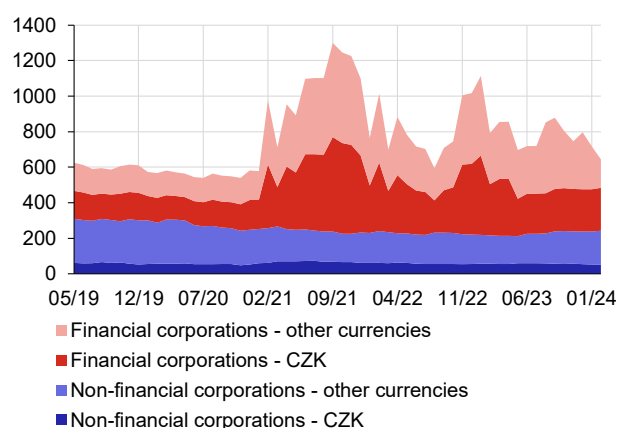
(CZK billions)



Source: Prague Stock Exchange.

Chart 11: Outstanding amount of Czech corporate bonds

(CZK billions)



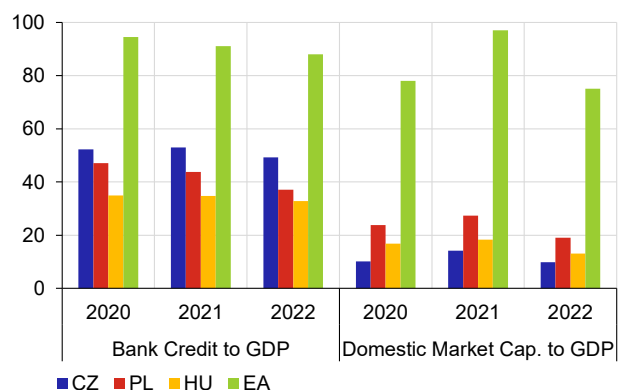
Source: CNB.

In terms of future prospects for long-run growth, there was an adjustment to the pension system in 2023, which may boost activity on financial markets. This adjustment led to the introduction of a new financial instrument known as the Long-Term Investment Product⁴ aimed at encouraging the creation of individual pension reserves, particularly through investments in instruments such as investment funds. This instrument offers the opportunity to benefit from income tax savings and utilize employer contributions for investments, all with the goal of long-term investment in regulated products with the potential for substantial appreciation. However, the extent of its impact will depend on domestic corporations, i.e. whether they choose to utilize this opportunity to raise additional funds for their businesses or whether these additional sources will be invested in foreign markets.

⁴ For details see: <https://www.mfcr.cz/assets/en/media/2020-05-RIA-EN.docx>.

Chart 12: Share of bank credit and market capitalization to GDP

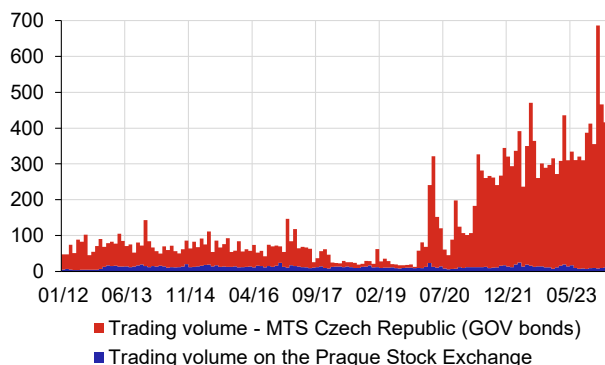
(in % of GDP)



Source: Prague Stock Exchange, CNB, Narodowy Bank Polski, Magyar Nemzeti Bank.

Chart 13: Monthly trading volume

(CZK billions)



Source: CNB, Prague Stock Exchange.

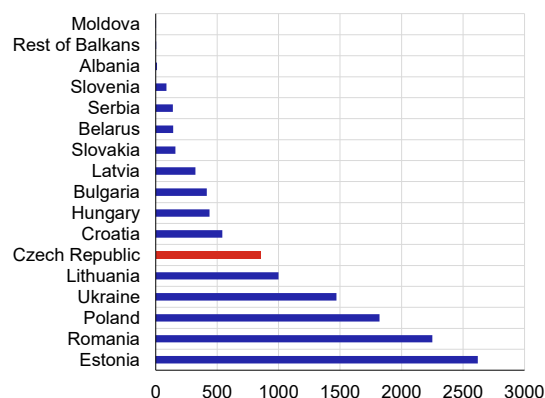
Markets' (equity/bond/bank loans) ability and efficiency to promote growth

As stated earlier, no significant structural changes in the financial intermediation infrastructure have been observed in the Czech Republic over the years. However, the growth-promoting ability of the financial sector generally increases over time with financial innovations and developments in information technology (such as the introduction of several peer-to-peer (P2P) lending platforms, online retail bond markets, etc.). Banks in the Czech Republic finance all types of corporations, including small and medium-sized enterprises (SMEs), start-ups and high-growth firms in line with their risk strategies. Alternatively, some firms can rely on financing from NBFIs or from primary bond markets. By international comparison, the Czech Republic neither leads nor lags significantly in this regard (see Chart 14).⁵ In general, alternative financing possibilities exist for these companies, but assessing their effectiveness is very difficult.

⁵ For details see: <https://www.oecd-ilibrary.org/docserver/081a005cen.pdf?expires=1711465541&id=id&accname=guest&checksum=CE991933F0CFE64D915164D1CF6CB90A>.

Chart 14: Investments in venture capital in European Emerging Markets

(EUR million; total volume during 2015–2021)



Source: OECD.

Chart 15: 3M default rate of non-financial corporations sector

(%)



Source: CNB.

Concerns about zombie firms and their inefficient financing were particularly prevalent during the period of very low interest rates and during the Covid-19 pandemic. In the Czech Republic, however, the peak in interest rates was reached in mid-2022 when pandemic-related government support measures were no longer in place. Yet there has been no significant increase in the materialization of credit risks in the corporate sector (see Chart 15). It can therefore be assumed that fears of a widespread zombie-firm phenomenon have not been fully warranted in the Czech Republic.

Foreign capital and long-term growth: does the composition of investment by type of investor and currency matter?

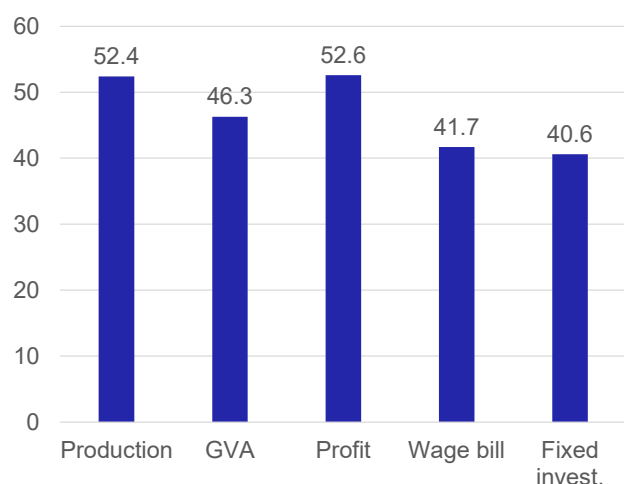
As could be expected, foreign capital was instrumental in the Czech Republic's transition from a centrally planned to a market economy. In particular, the country has devoted considerable effort to attract FDI as a stable source of long-term financing. Unlike loans and portfolio investment, FDI brings not only financial resources but also expertise and managerial skills. Accordingly, the sectors targeted by foreign direct investors can influence long-term growth, which has also been the case in the Czech Republic. The stock of FDI exceeding 70% of GDP has been very high by international comparison.

Foreign-owned companies (FOC) account for approximately 52% of production and 53% of the profits of non-financial companies (see Chart 16). In total, they generate 46% of value added in the Czech economy – well above the European Union (EU) average. The share is particularly high in manufacturing, where businesses under foreign ownership account for over 60% of value added, 68% of exports and 51% of employment. This shows that FDI has been a driver of industries oriented towards foreign markets, gradually making the country one of the most export-oriented economies in Central and Eastern Europe. Naturally, investments in high-value-added industries, such as automotive manufacturing and technology, have had a more profound impact on the country's development than investments in less dynamic

sectors, although the main source of investment is currently reinvested earnings (see Chart 17).

Chart 16: FOC: shares in different indicators

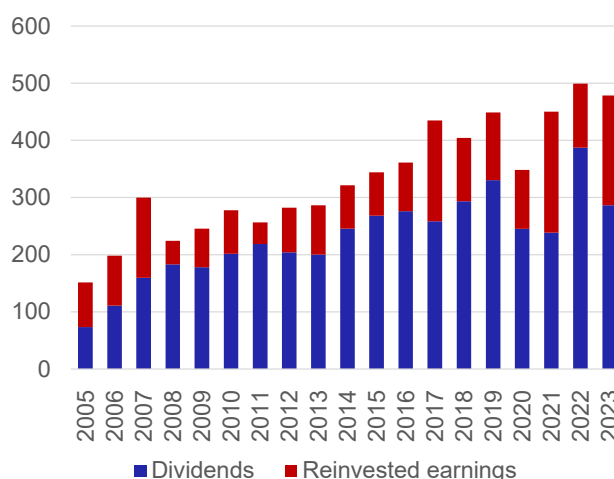
(in %; 2017-2021)



Source: Czech Statistical Office.

Chart 17: Dividends and reinvestments

(CZK billions)



Source: CNB.

However, more than two-thirds of profits created by foreign controlled companies have been leaving the country in the form of dividends since 2008, hampering the investment and growth potential of the economy. The high participation of foreign capital also noticeably affects the financing structure of Czech companies. It is dominated by intercompany loans (mainly from a parent foreign entity to its Czech subsidiaries or associates), amounting to almost 40% of all corporate loans in the Czech Republic (see Table 1). Furthermore, the interest rate differential explains the high proportion of foreign currency denominated loans. Its total share exceeded 58% by the end of 2022 but then decreased to 56% in 2023 Q3.

That said, whether the FDI is genuinely foreign also matters. The intertwined ownership links between globalized investor entities imply that traditional FDI statistics, which focus on the immediate investor, can be misleading. Notably, the routing of investment from the initial domestic source through tax or regulatory havens abroad back to the country of origin means a loss of tax income, less efficient regulation, a risk of international arbitration and lower corporate transparency for the domestic economy. At the same time, such "round-tripping" does not deliver the traditional benefits of FDI, since the transfer of technology and know-how, i.e. one of the prominent factors leading governments to implement incentives for foreign investment, is largely absent. Our estimates show that as much as 15% of "foreign" direct investment in the Czech Republic can ultimately be traced back to owners inside the country. Evidence suggests that the Czech Republic is not unique in this respect.

Table 1: Czech companies – structure of financing			
Loans of Companies Q4/2022	Value, CZK billions	Share in total loans, %	
Domestic banks, total	1,324	41.6	Share in domestic banks loans, %
Domestic banks, CZK	671	21.1	
Domestic banks, foreign currency	652	20.5	
Foreign loans, total	604	21.5	Share in foreign banks loans, %
Foreign loans, CZK	90	3.0	
Foreign loans, foreign currency	513	18.5	
Intercompany loans, FDI, total	1,257	39.5	Share in FDI loans, %
Intercompany loans, FDI, CZK	561	17.6	
Intercompany loans, FDI, foreign currency	696	21.9	

Sectoral allocation of credit and the economy's growth potential

In general, credit that is allocated to sectors with high productivity or growth potential can spur innovation, enable capital deepening and enhance productivity, leading to higher economic growth. However, if credit is allocated to sectors with low productivity gains or to firms that are not the most efficient users of capital, it can lead to capital misallocation. This can dampen economic growth as resources are not used optimally. Changes in the sectoral allocation of credit can affect the economy's growth potential both positively and negatively, and the effect largely depends on how well the allocation matches the economy's needs and potential growth areas.

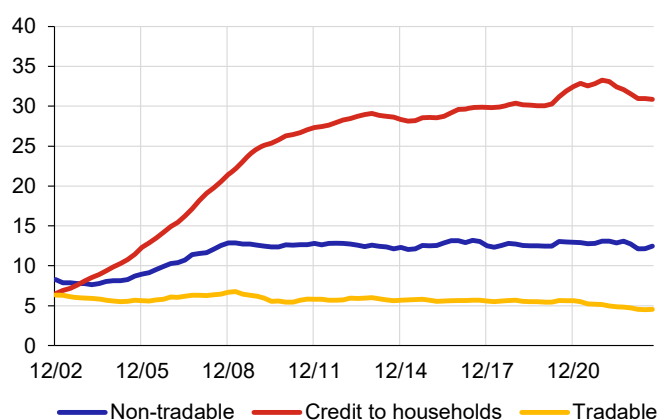
The sectoral allocation of credit plays an important role in understanding the linkages between the financial sector and the real economy. According to Müller and Verner (2021), who study the sectoral allocation of credit on data for 51 advanced and 46 emerging economies, starting in 1950, there are predictable patterns in the future path of gross domestic product (GDP), productivity and the likelihood of systemic banking crises. This depends on whether credit finances expansion in the tradable or non-tradable and household sectors. The authors differentiate between different types of corporate credit. According to the authors, (A) "only credit growth in specific industries—construction and real estate, as well as other non-tradable sectors—predict a boom-bust pattern in output." In contrast, "credit to the tradable sector ... is associated with higher future productivity growth."

Specifically in relation to total factor productivity (TFP), Müller and Verner (2021) show that (B) "credit expansions in the non-tradable and household sectors are systematically associated with lower productivity growth. The opposite is true for lending to the tradable sector, which correlates with higher growth in ... TFP in the medium-run" (p. 34).

We reproduce the charts from the study mentioned above using Czech data and for a shorter time span (2002–23), with an emphasis on developments in recent years. First, Czech household debt has increased significantly, while credit to non-financial firms has stalled (see Chart 2). Müller and Verner (2021) observe a similar pattern in their large sample of emerging and advanced economies (1950–2014). To expand on this, Czech corporate credit to the tradable sector as a share of GDP even declined slightly over time (see Chart 18).

Chart 18: Tradable, non-tradable and household credit development

(in % GDP)

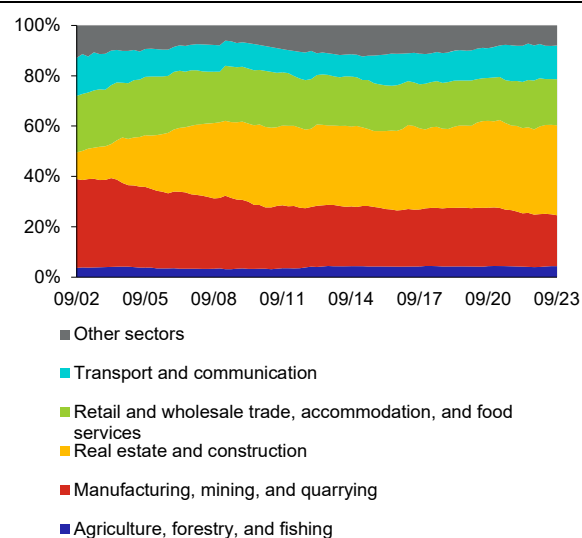


Source: CNB.

Second, construction and real estate lending have come to make up considerable shares of corporate loan portfolios in the Czech Republic (see Chart 19), and corporate credit from tradable sectors has shifted to real estate and construction (see Chart 19). These observations are similar to those in the Müller and Verner study. The authors of the study noted that the share of construction credit has risen to more than 24% in advanced economies. According to them, this shift is large and cannot be fully accounted for by an increase in construction value added. The significant rise in credit related to real estate, construction and housing in the Czech Republic is also evident in Chart 20, which shows credit as a share of GDP.

Chart 19: Corporate credit by sector

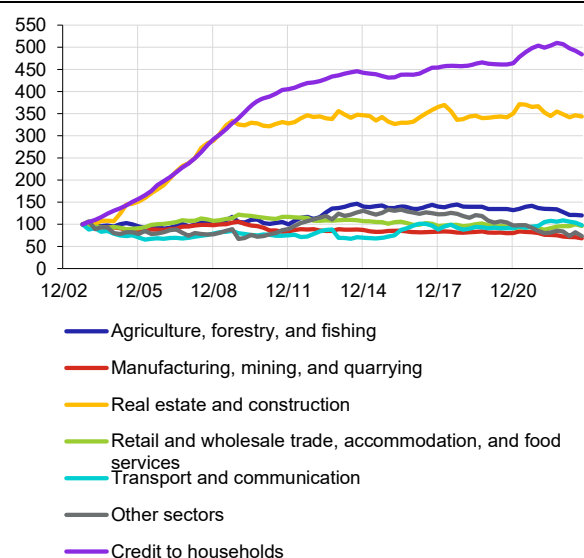
(% of corporate credit)



Source: CNB.

Chart 20: Credit to GDP

(index: 2002 = 100)



Source: CNB.

The credit patterns based on the Czech data are in line with stylized facts and observations based on the large sample of countries in the study. Thus the study's conclusions (A and B above) might apply to the Czech Republic. This suggests that the strong growth trend in household loans and corporate credit to real estate and construction could signal (i) a rather unfavorable impact on economic growth in the medium term (lower future labor and total factor productivity) and (ii) a misallocation of resources away from more productive sectors of the economy, such as manufacturing.

Digital innovation

Digital finance for retail customers has reached an advanced stage across all segments of the financial sector in the Czech Republic. The majority of standard banking, insurance, and investment services for both private individuals and businesses are now offered through electronic channels, accessible via PC and mobile applications. Furthermore, there has been significant progress in digitalization concerning corporate clients, including SMEs. While the digital transformation has already been completed in terms of payment services, it is continuing to progress in the area of credit provision. There are no credit constraints for retail or SME clients when transacting or communicating with credit providers through traditional or digital channels. Digital innovation projects initiated by various financial services providers (driven also by competition) are continuously expanding the range of services and products offered through digital channel applications.⁶ Digitalization

⁶ See e.g. <https://www.kb.cz/en/our-applications/kb-plus>, <https://www.csas.cz/en/internet-banking/george>, <https://www.kb.cz/en/entrepreneurs-and-small-businesses/digital-services>, <https://www.csas.cz/en/business-and-companies/accounts-and-payment>.

enables the financial sector to streamline, formalize and partially de-risk the evaluation and approval processes and support the cost-efficient, timely and flexible provisioning of financial services. Clients can mostly access standard financial services in a 24/7/365 remote digital regime in any segment of the financial sector. From a retail perspective, Czech banks launched a unique project called “Bank identity”.⁷ The Project, completed in 2022, allows clients from a majority of the domestic banking sector (75%) to uniquely identify themselves digitally for transactions with banks, other financial service providers and state agencies. In 2023, the central bank also successfully launched the “Pay a Contact” project allowing direct payment between retail clients using mobile phone numbers.⁸

Excessive finance, resilience and long-run growth

Finance might become excessive under these circumstances:

1. High Levels of Public Debt: Studies have shown that high levels of public debt can have a negative impact on economic growth. A one percentage point increase in the government debt-to-GDP ratio can lower economic growth by 0.012 to 0.125 percentage points.⁹
2. Financial Market Volatility: Excessive volatility in financial markets can lead to economic instability, affecting output growth. This can be due to rapid changes in interest rates, or excessive risk-taking leading to financial crises.¹⁰
3. Misallocation of Resources: When financial resources are not allocated efficiently, it can lead to suboptimal investment decisions and lower economic growth. This can occur when financial intermediaries fail to channel funds from savers to productive investments.

When financial institutions take on excessive risk, it can lead to financial crises, which can have severe negative impacts on the economy and economic growth in the medium term. This was evident in the 2008 global financial crisis. Excessive housing finance can lead to the creation of real estate price bubbles which, when burst, can result in severe economic downturns and socio-economic tightness.

Macroprudential tools can be used to dampen excessive finance in the area of mortgage loans, especially those aimed at loan applicants – borrower based measures (BBMs) – LTV, DTI and DSTI. BBMs are very good at preventing excessive risk-taking behavior by setting prudent limits. In the Czech Republic, BBMs are an actively-used macroprudential instrument. Since 2021, Act No. 6/1993 Coll., on the Czech National Bank has enabled the CNB to set binding upper limits on the LTV, DSTI and DTI ratios

⁷ <https://www.bankid.cz/en>.

⁸ <https://www.cnb.cz/en/payments/certis/description-of-the-pay-a-contact-register/>, 700 million payments have been processed to date.

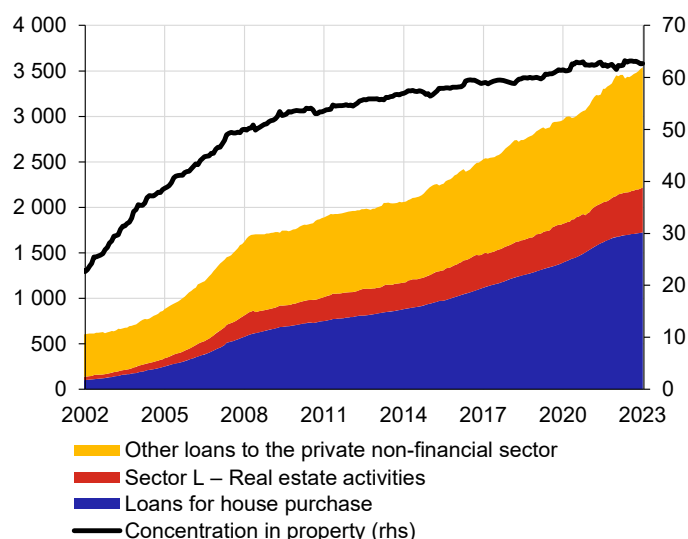
⁹ <https://www.cato.org/cato-journal/fall-2021/impact-public-debt-economic-growth>.

¹⁰ <https://www.imf.org/en/News/Articles/2021/09/27/sp092721-the-future-of-finance-and-the-global-economy>.

for all providers of consumer credit secured by residential property in connection with the identification of the systemic risks relating to those loans.

Chart 21: Concentration of bank loans in the property segment

(CZK billions; right-hand scale: %)



Source: CNB.

The heightened concentration of loans to the property segment can increase systemic risk in the banking sector. Such a systemic risk dimension might be a potential threat to long-term economic growth. The level of concentration in the Czech Republic has not increased in recent years (see Chart 21). However, it remains relatively high and needs to be monitored regularly in relation to the maintenance of the resilience of the banking sector. The high concentration of bank loans in the property segment might cause volatility in economic activity when credit risks widely materialize.

Impact of the exposure to international finance on macroeconomic volatility and long-run growth

Increased integration with global financial markets can lead to greater transmission of financial shocks across countries. For example, sudden shifts in sentiment on the financial markets, changes in foreign interest rates, or financial crises in some country or region can quickly spread to others through interconnected financial markets, leading to increased macroeconomic volatility.

For the Czech Republic, an open economy with a substantial share of foreign currency loans, mainly exchange rate volatility can increase macroeconomic volatility. Fluctuations in exchange rates can affect trade competitiveness and inflation, increasing uncertainty in the domestic economy.

Optimality of the financial structure, output volatility, long-run growth and the economy's ability to withstand domestic and external shocks as well as support growth

At the microeconomic level within a particular enterprise, there is an optimal capital structure. However, at the national economy level, the solution is less clear-cut. The structure of credit reflects the structure of the economy and households' time preferences. As the structure of the economy in a free market is determined by the manifested comparative advantages, there may be a trade-off between economic growth and reduced output volatility. For instance, efforts to reduce the exposure of a country specializing in the production of goods in pro-cyclical sectors (typically the automotive industry) may on the one hand reduce the magnitude of economic fluctuations, but on the other hand dampen economic growth through an artificial shift away from industries with a comparative advantage.

Despite the relatively stable nature of the intermediation structure in recent years, there have been some shifts in financing patterns recently. In particular, the share of foreign currency loans in corporate credit has increased substantially over the last number of years, reaching approximately 50%. This may increase the vulnerability of the output in the future, although most of the firms with foreign currency credit match it with foreign currency income. Against this backdrop, both the financial and non-financial sectors have undergone regular and thorough testing against a wide range of adverse shocks, including potential shifts in financial intermediation patterns (the increasing prevalence of foreign currency loans or the rapid growth in mortgages). In the face of diverse scenarios and challenges, the economy has consistently demonstrated resilience and robustness, showcasing its steadfast ability to endure and navigate through turbulent periods. Consequently, we do not perceive the observed changes to have a dramatic impact on the overall resilience of the economy.

Policy measures

Structural policy measures supporting the allocation of finance for long-term growth, including capital markets and the role of the central bank

The legislation and institutional framework for further development of the financial markets in the Czech Republic can be considered satisfactory overall. The development of financial markets is mainly hampered by the low number of entities and securities in the market, traditionally conservative households with a relatively high level of mistrust in capital market instruments and a preference for bank deposits, the dominant pay-as-you-go pension system and the relatively small size of the economy. To further develop the financial markets, policymakers can provide more incentives for firms to enter the markets (especially the equity market) and instill greater household confidence to invest in the markets in tandem with a deeper reform of the pension system.

To support the allocation of finance for long-term growth in the Czech Republic and further develop capital markets, a number of policy measures have to be discussed with stakeholders at both national and European levels. The European

Commission is the main policymaker in this regard. The role of the central bank is limited to ensuring financial stability and promoting the development of the financial system. This provides a favorable environment for investment but cannot supplement the role of governmental institutions.

Role of the central banks and other authorities in digital innovation: to finance long-term growth while mitigating emerging risks

Encouraging digital innovation to finance long-term growth while mitigating emerging risks is a challenging task for central banks and other authorities. To achieve this, we need to start with clear regulation that both addresses digital financial services and innovations (while being as technology neutral as possible) and ensures robust data privacy and cyber security measures. Such tasks go beyond the mandate of central banks and none of them can be achieved without cooperation between the regulators and industry.

Enhancing the depth and diversity of the financial system and improving the efficient allocation of capital

Actions necessary to achieve a diverse financial system are in the hands of governments, beyond the mandate of central banks. We as a central bank support the goals of the EU's capital markets union. But this is a long-term project that requires tools such as taxation, pension reform and, above all, patience – patience because much of the topic is related to cultural phenomena (acceptance of risk, etc.) and less to regulation.

The use of digital innovation for reducing SMEs' credit constraints: Hong Kong SAR's recent experience

Hong Kong Monetary Authority

Abstract

One of the key pain points that is constraining small and medium-sized enterprises' (SMEs') access to credit is their lack of sufficient and readily available financial data. Against this background, this note shares some of Hong Kong SAR's recent experience in promoting the utilisation of alternative data in the banking sector to help alleviate the financial data problem in SME lending. The note further presents some recent digitalisation initiatives undertaken in Hong Kong, including the launch of a new data infrastructure platform by the Hong Kong Monetary Authority (HKMA) that could expedite the adoption of alternative data in Hong Kong and thereby enable banks to enhance their credit underwriting processes for SME borrowers.

JEL classification: G21, G28, G32, L15, O33.

Keywords: alternative data, digital innovation, small and medium-sized enterprises, credit scoring.

1. Introduction

Small and medium-sized enterprises (SMEs) are a key contributor to economic activities. According to some estimates (Cornelli et al (2019); Nemoto and Yoshino (2019)), SMEs are estimated to account for over 95% of the number of firm establishments, contribute to 50–70% of employment and constitute 30–60% of gross domestic product (GDP) in various Asian economies. Despite their importance to the economy, SMEs often face difficulties in obtaining external finance, particularly bank credit. One of the key challenges facing SMEs is the lack of sufficient credit history and readily available financial records. Without such data, it may be difficult for banks to assess the creditworthiness of SMEs based on a conventional credit scoring approach. As a result, SME loans are often subject to higher interest rates and/or are prone to more stringent collateral requirements.

With the rapid advancement in financial technology and greater adoption of technology around the world in recent years, various forms of digital information pertaining to customers and enterprises have become available. The emergence of these digital data, combined with the enhancement in computing capabilities, could open up new alternative ways for banks to enhance their credit assessment and may consequently help improve the provision of financial services to SMEs.

Against this background, this note presents some of Hong Kong SAR's recent experiences in promoting the utilisation of such alternative data in the banking sector

with the aim of helping to improve SMEs' access to credit. Regarding the structure of this note, it first presents the notion of alternative data for credit scoring and then provides evidence on the technical feasibility of utilising such alternative data in banks' SME lending decisions. Finally, the note further presents the recent new data infrastructure initiative undertaken by the Hong Kong Monetary Authority (HKMA) that aims to enable secure and efficient exchange of owner-consented data between data providers and financial institutions in Hong Kong to facilitate a wider adoption of alternative data in practice.

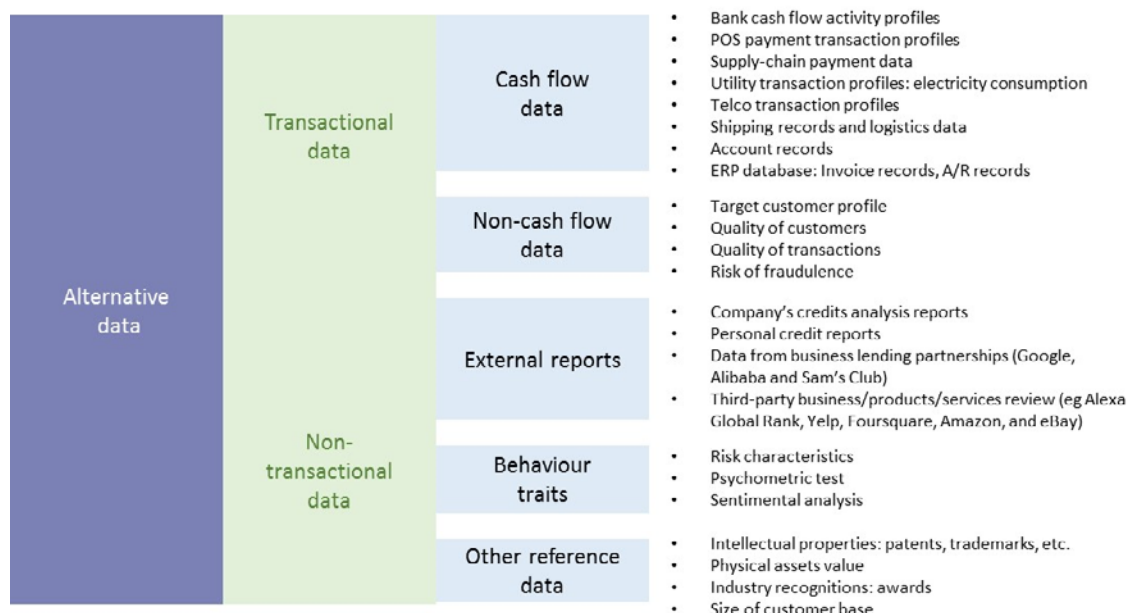
The discussions of this note draw mainly on the findings from various recent studies, including a report by the Hong Kong Applied Science and Technology Research Institute (ASTRI) and commissioned by the HKMA titled "Alternative credit scoring of micro-, small and medium-sized enterprises" (HKMA and ASTRI (2020)), and an applied research report by the Hong Kong Institute for Monetary and Financial Research (HKIMR) titled "The digitalisation of financial services in Hong Kong: recent experience, regulatory developments and considerations for sustainable innovation and growth" (HKIMR (2023)).

2. Utilising "alternative data" to alleviate the financial data problem in SME lending

Typically, when a bank underwrites a loan, its lending decision will generally be based on the assessment of borrowers' creditworthiness using a credit scoring approach. Conventionally, such an approach relies on financial ratios or indicators derived from borrowers' audited financial statements. Without sufficient and reliable financial data on SMEs, it becomes more challenging for banks to adequately assess their credit risk under such a conventional approach and this may thus constrain banks' willingness to provide credit to SMEs.

To tackle this challenge, many financial institutions around the world are exploring the use of alternative forms of data to help assess SMEs' loan repayment ability. With the rapid advancement in technology and a wider adoption of digital innovations in the past decade, customers' and firms' digital footprints are becoming more available. The increasing availability of alternative data could provide additional supporting information that may facilitate banks' lending decisions even in the absence of conventional financial data on borrowers.

Before proceeding further, it is useful to first describe the notion of alternative data for credit scoring. These data can be broadly classified into two groups, namely: (a) transactional data and (b) non-transactional data (Figure 1).



Source: HKMA and ASTRI (2020).

"Transactional data" generally refers to the records of business activities between a company and its customers. These usually include revenue-related information (ie cash flow data) and non-monetary-related information (ie non-cash flow data). For the former, these would include firms' customer payment transaction data, which reflect the sales activities of a retail SME; and, for SMEs in trading and logistics industries, supply chain payment profiles, which contain their payment records to their suppliers. For non-cash flow data, these are transactional records, such as payment identifications and transaction patterns of customers with the SMEs. These data can be used to capture information about the quality of their customers and their target customer profiles, which can in turn reflect their business prospects.

"Non-transactional data" generally refers to data from third-party data providers (such as a credit reference agency), which may supply the missing data or add new information for the credit scoring model. For instance, these could include company credit analysis reports as well as the credit history of the SME's owner, etc.

These diverse types and forms of alternative data for credit scoring can provide lenders with more insights into SMEs' creditworthiness and facilitate their continuous monitoring of borrowers. Indeed, with the rapid advancement in computational power and analytical capabilities that help process and analyse these non-standardised data, the value of a non-traditional/alternative approach for evaluating the creditworthiness of SMEs is gaining recognition in both developed and emerging market economies throughout the world. For instance, some major banks in Japan have already taken into account SMEs' cash flow data, such as bank transactional account information, in their credit scoring models (Nemoto and Yoshino (2019); HKMA and ASTRI (2020)). In addition, some mid-tier and cross-regional commercial banks in China are currently using data such as income tax and business tax records

for credit scoring. These examples highlight the potential usefulness of adopting an alternative credit scoring approach for SME loan applications.

3. Some evidence on the feasibility of an alternative credit scoring approach for SME lending

While alternative data are considered to be a useful source of information that helps lenders examine the financial condition of a borrower, it is important to assess the technical feasibility of using such data for assessing the credit risk of SME borrowers and their predictive performance. In this regard, in 2020 the HKMA commissioned ASTRI to conduct a study that explored the use of machine learning algorithms and alternative data for SME lending businesses.¹

Two proof of concept (PoC) experiments were conducted by a bank and a third-party data provider in Hong Kong, respectively. In each of these experiments, the participants separately developed an alternative credit scoring model based on various types of transactional cash flow and non-cash flow data for SMEs in the retail industry.² The objective of these experiments was to examine the technical feasibility of applying SME transactional data to develop machine learning credit scoring models. The key findings and insights from these PoC experiments are summarised below.

A. Transactional cash flow model developed by the participating bank

The first PoC experiment was conducted by a bank. The participating bank used the historical monthly transactional cash flow data (including both inflows and outflows) of its SMEs' bank accounts to develop a transactional cash flow model that aimed to predict whether a default event would occur within a specific period.

The data set contained around 74 million monthly observations of more than 1,000 SMEs for the period from October 2018 to July 2020. Each observation represents the monthly data from an SME's bank account. The data set contained six main variables, including the occurrence of delinquency (ie the target variable), total cash credit/debit amount, number of credit/debit transactions, and number of years of bank-client relationship. Based on these key variables, extra variables were derived using different statistical transformations. To examine the performance of the machine learning models, Table 1 shows the area under curve (AUC) scores of the nine selected machine learning algorithms across different prediction horizons (ie one month ahead, two months ahead and three months ahead).³

¹ For details of the commissioned study, see www.astri.org/wp-content/uploads/2016/11/White-paper-on-credit-scoring.pdf.

² There was no sharing of data among the participating organisations, and the machine learning models involved in these PoC experiments were developed based on the transactional data of each organisation's data set.

³ Usually, the AUC is equal to 0.5 for a random model and approaches 1 as a model approaches perfection.

Experiment results of the transactional cash flow model

Table 1

Prediction horizon	One month ahead	Two months ahead	Three months ahead
AUC scores			
Logistic regression	0.9162	0.8098	0.7592
Random forest	0.9249	0.8312	0.7606
Extra trees	0.9198	0.8287	0.7727
LightGBM	0.9141	0.8187	0.7987
CatBoost	0.9339	0.8518	0.7641
XGBoost	0.9368	0.8436	0.7926
KNN	0.7783	0.7699	0.7681
CNN	0.8489	0.777	0.7265
Stacking	0.9227	0.8103	0.7515

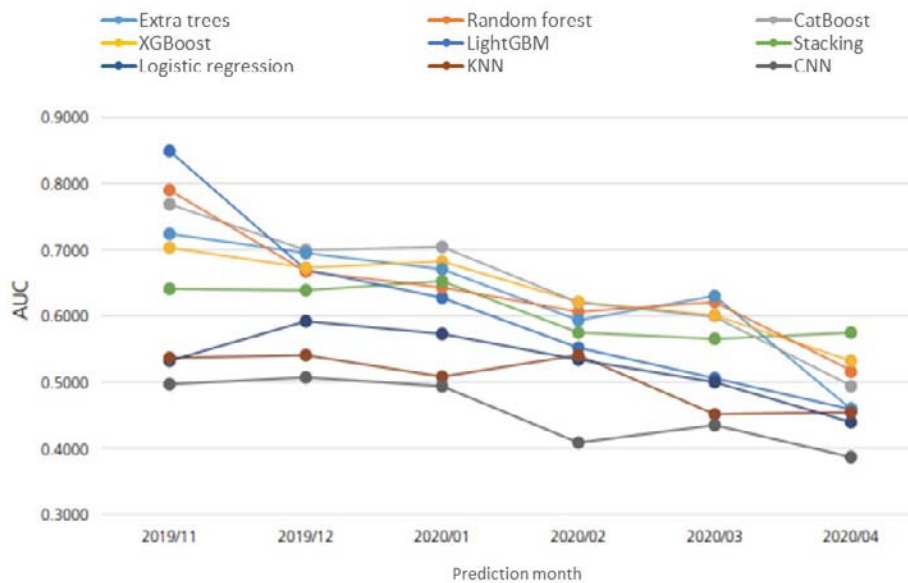
Source: HKMA and ASTRI (2020).

Overall, the results suggest that transactional cash flow models can achieve desirable performance for short-term default prediction. For instance, the AUC scores for most of the models (such as XGBoost, CatBoost and random forest) are found to be over 0.91 for one-month-ahead default prediction. Such a desirable performance suggests that banks can in practice update the credit risk assessment prediction results for SMEs on a regular basis with incoming transactional data (ie bank statements) from loan applicants. This may also enable banks to achieve continuous monitoring of SMEs' creditworthiness.

B. Model developed by a third-party payment data provider

The second PoC experiment was conducted by a third-party point of sale (POS) payment data provider using non-cash flow transactional data from SMEs. The data set contained nearly 1.55 million observations of more than 300 SMEs over the period from April 2019 to April 2020. Each observation represents an SME payment transaction, which includes the occurrence of late payment of any service charges, company type, transaction date and time, currency, payment amount and payment method. As the data set does not contain SME loan default information, information on service charge payment delinquency by SMEs was used to proxy their default status. As such, the machine learning model developed can be treated as a pre-screening model which can identify SMEs with potential loan default problems.

The pre-screening models were developed using the monthly transaction data of the POS payment data provider from April to October 2019. Figure 2 shows the AUC scores of the nine selected machine learning models for predicting the occurrence of late service payments.



Source: HKMA and ASTRI (2020).

As shown in Figure 2, the top five pre-screening models are found to achieve reasonably good predictive performance for the short-term prediction horizon. Similar to findings in the previous PoC experiment undertaken by the participating bank, the accuracy of the pre-screening models dropped gradually for longer prediction horizons. Nonetheless, the AUC could be improved by retraining the model with the updated information. Taking the “extra trees” pre-screening model as an example, Figure 3 shows the AUC scores of the pre-screening model would be higher after subsequent model retraining.

In summary, given that both the transactional cash flow model and the non-cash flow pre-screening model achieved a reasonably good predictive performance for assessing SME credit risk, the banking industry can leverage on alternative data in developing an effective alternative credit scoring framework for SMEs. This would help address the financial data availability problem in SME lending.



Each line in Figure 3 presents the AUC scores of the “extra trees” pre-screening model that was updated (ie underwent model retraining) in a specific month. The four lines show the prediction results of the model after updating in October 2019, November 2019, December 2019 and January 2020.

Source: HKMA and ASTRI (2020).

4. Supporting a wider adoption of alternative data by banks – the implementation of Commercial Data Interchange (CDI)

While the PoC evidence in the previous section illustrates the benefits and the technical feasibility of adopting an alternative credit scoring approach, there are several operational challenges (such as data privacy, a safe and secure environment for data exchange, data protection, etc) that need to be addressed in practice in order to expedite the adoption of alternative data in the banking industry.

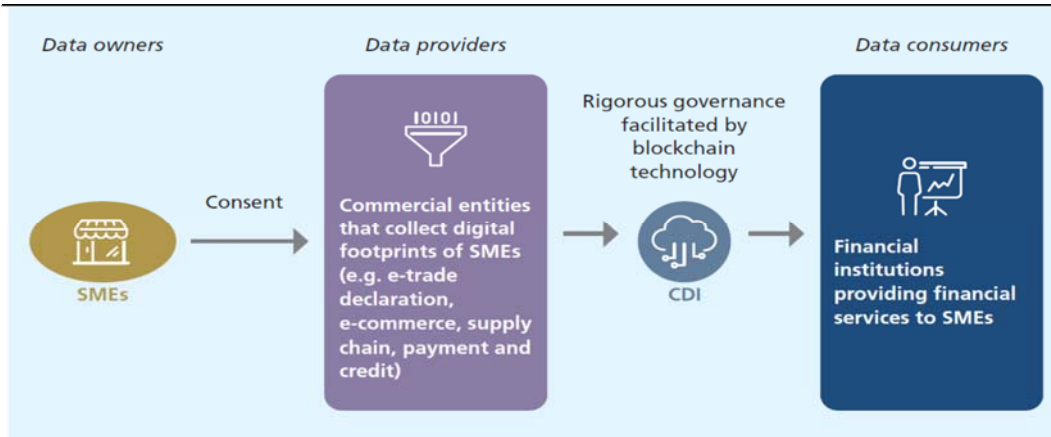
To enable scalable, efficient and secure flows of data between banks and data providers, in October 2022 the HKMA launched a new market development initiative called Commercial Data Interchange (CDI). As one of the initiatives under the HKMA’s “Fintech 2025” strategy, CDI is a consent-based data-sharing infrastructure with a standardised and secure technical interface. Banks and data providers can connect to the interoperable platform to share commercial data and use this data to offer better

products for their clients. The CDI infrastructure is designed to foster a vibrant and trusted data-sharing ecosystem in the industry.⁴

A promising CDI use case is to facilitate the credit assessment process for lending to SMEs. Figure 4 presents a brief description of how CDI facilitates SMEs' loan applications. With the consent of the data owner (eg an SME), the CDI platform allows banks to obtain commercial data (such as e-trade declarations, e-commerce, supply chain, payment and credit data) relating to the concerned enterprise from third-party platforms in order to conduct more objective and accurate credit risk analyses such as those mentioned in the previous section. The access to alternative data via CDI may reduce the need for enterprises to provide collateral and effectively enhance their access to bank credit and other financial services.

How CDI facilitates SMEs' loan applications

Figure 4



Source: HKIMR (2023).

In addition, the connection between CDI and the Commercial Credit Reference Agency (CCRA) has recently come online, enhancing the availability of non-transactional SME data for banks. Indeed, several CDI participating banks have successfully connected to the CCRA via CDI and gained access to machine-readable corporate credit reference data. This may enable banks to carry out more automated customer onboarding, credit approval and ongoing credit review and monitoring of their customers.

As it has only been launched recently, it could be premature to thoroughly evaluate the effectiveness of CDI for improving SME credit access. Nonetheless, there is already some anecdotal evidence on its benefits. Since the launch of CDI in October 2022, the number of participating banks has reached 26, and key data providers have doubled, from six to 12. The CDI utilisation rate has also increased nearly ninefold, to 8,900 loan approvals from close to 1,000 during the pilot phase, with cumulated credit approvals exceeding HK\$ 8 billion as of end-September 2023. It is also reported that

⁴ For details of CDI, see the dedicated CDI website (cdi.hkma.gov.hk). For details related to CDI governance and controls, see (cdi.hkma.gov.hk/wp-content/uploads/2022/10/CDI-Framework-2022-Oct.pdf).

some successful SME loan applicants were able to obtain credit from banks via CDI with less stringent collateral requirements and more competitive financing terms. In light of these experiences, some interviewed market participants felt that CDI could help address the financial data availability problem faced by SMEs (HKIMR (2023)).

Going forward, to further unleash the potential of CDI the HKMA has planned to diversify CDI data sources with the introduction of new data providers covering government, logistics and catering services data.⁵ For instance, the Companies Registry became the first government data source to be connected to CDI via the government's Consented Data Exchange Gateway at the end of 2023. The connection with the Companies Registry will provide banks with automated access to key data needed for their know-your-customer (KYC) processes, such as company name, company number, individual directors, shareholders and members, address, country and date of incorporation. Easier access to these data should help banks to further digitalise and streamline their internal risk management processes.

5. Conclusion

This note shares some recent Hong Kong experience on the use of digital innovations in addressing some of the long-standing pain points in SME financing. Specifically, the launch of CDI, a consent-based data infrastructure, is enabling SMEs to share their commercial data from different data sources with banks in a secure and efficient manner. This could enable banks to leverage various sources of alternative data to enhance their credit underwriting processes for SME borrowers, thereby potentially enhancing SMEs' access to financial services.

It should be noted that this is only one of the many plausible examples of how digital innovations can help improve SMEs' access to credit. Besides the launch of CDI, other innovative projects are also under way in Hong Kong and globally that aim to resolve other key pain points in SME finance. For instance, Project Dynamo, a collaborative work between the BIS Innovation Hub and the HKMA, explores the use of blockchain technology and digital trade tokens (DTTs) as ways to encourage institutional investors to finance SMEs. The project has developed a prototype platform which has demonstrated that DTTs can be used as one innovative solution to address some of the common pain points in SME trade finance.⁶ Therefore, it is widely believed that there remains much room for financial technology to play in this area going forward. To effectively harness the transformative potential of digital advancements, more research and collaboration between market participants and policymakers are needed, both domestically and internationally.

⁵ See Yue (2023).

⁶ In brief, the use of DTTs allows the anchor buyer to send a smart contract-backed conditional payment to their SME suppliers. Before the conditions are met, suppliers can pass the DTT to their upstream counterparts to offset their debt, or to institutional investors to obtain working capital. For details, see www.bis.org/about/bisih/topics/open_finance/dynamo.htm.

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Covered bonds as instruments for developing capital markets and supporting financial stability: the Hungarian experience

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Magyar Nemzeti Bank

Abstract

Covered bonds financing mortgages have become a more and more important form of bank financing in Europe. These bonds are widespread, especially in northern, western and southern Europe. Their characteristics make these instruments advantageous for both issuers and investors. A properly regulated and developed mortgage bond market can contribute to capital market development and at the same time to financial stability through long-term stable bank funding. This paper elaborates on the key aspects of the mortgage bond market and its importance for emerging market economies. Through the example of Hungary, we explain how regulatory incentives can ensure market development without significant side effects and how flexibility should play a vital role in any regulatory framework.

Journal of Economic Literature (JEL) codes: E58, G12, G21.

Keywords: financial stability, macroprudential policy, maturity mismatch, monetary policy, mortgage lending, mortgage bonds.

* The views of the authors do not necessarily reflect the official view of the Magyar Nemzeti Bank.
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Introduction

Mortgage-backed covered bonds have become widespread and are one of the most important forms of financing in a number of countries worldwide, especially in Europe. Due to their uniquely strong legal background, relatively simple financial framework, long maturity and low funding costs, these instruments are not only advantageous for both issuers and investors, but can also support several policy objectives at once.

Developing capital markets requires, inter alia, a stable and sound financial system and a solid institutional framework including adequate supervision and regulation. A properly regulated and developed covered bond market can contribute to these requirements by strengthening financial stability through long-term stable bank funding, diminishing maturity mismatches of balance sheets. It also offers a first step in the sequencing of capital market development as a relatively simple instrument suitable for several different investor types.

In Hungary, the central bank has been supporting the previously stagnant covered bond market with various instruments in recent years. Prudential measures have been used hand in hand with monetary policy operations, laying the foundations of a more active market. These experiences may serve as an interesting example to policymakers in other countries for both market development and financial stability purposes.

The first section of this article provides an overview of covered bonds and their history. The second explores the importance of the covered bond market. The third section presents the trends in and current main drivers of the covered bond market. Lastly, the fourth section discusses the approach of Hungary's central bank, the Magyar Nemzeti Bank (MNB) to encouraging the development of the covered bond market, also with regard to sustainable (green) financing.

1. An overview of covered bonds

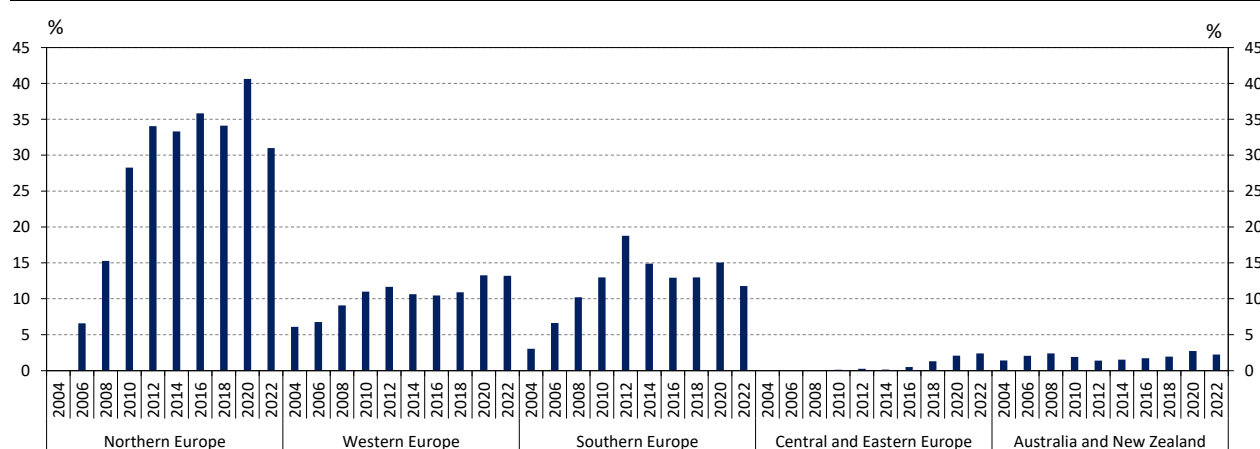
Mortgage-backed covered bonds (or mortgage bonds) have a long history in Europe: they first appeared in Prussia about 250 years ago. For a long time, covered bonds were issued primarily in Germany (Pfandbriefe) and Denmark (realkreditobligationer; Packer et al (2007)). Since then, mortgage bonds have become widespread and nowadays serve as an important form of financing in most European countries. Mortgage-backed covered bonds have gained predominance as a source of stable funding and as an asset-liability management tool (Avesani et al (2007)). They mainly play a significant role in the financing of bank lending in the northern and western European states, but in recent years there has also been significant development in countries with smaller and less developed capital markets, partly due to the renewal of the harmonised legal framework of the European Union (Borkó and Herbert (2023)). Today, there are active covered bond markets in about 30 different European countries, and use of these instruments has also expanded beyond European borders, for example to Australia, Canada, Singapore and South Korea (ECBC (2023)).

Covered bonds have shown their safe haven status and proved to be one of the only asset classes able to restore investor confidence and ensure issuers access to the debt capital markets in volatile times (ECBC (2023)). During the global financial crisis of 2008-09 and the ensuing euro area crisis, there were no crashes in the covered bonds market. Based on that, it is not surprising that more than 99% of covered bonds have at least an A rating and three quarters have a AAA rating in the euro area (Mérő (2021)).

Both the issuance and amounts outstanding of covered bonds have grown considerably since the mid-1990s. Announced issuance of covered bonds increased from less than EUR 100 billion in the mid-1990s to over EUR 350 billion in 2006. In mid-2007, the outstanding amount of covered bonds reached EUR 1.7 trillion (Packer et al (2007)), and in 2022 it was about EUR 2.7 trillion, while the issued amount exceeded EUR 630 billion (ECBC (2023)). Mortgage bonds are widespread mainly in Europe, especially in northern, western and southern Europe. In northern Europe, the outstanding amount of these bonds relative to GDP was above 30% in the 2010s, while in western and southern Europe the values were above 10%. In central and eastern Europe, the ratio started to increase in the second half of the 2010s to about 2.5%, while in Australia and New Zealand, the value was hovering below 2.5%. In other regions, the market for these instruments is not significant (values below 0.5%).

Ratio of outstanding amount of mortgage bonds to GDP

Chart 1



In the case of regions not shown on the graph, the highest value does not exceed 0.5%. Northern Europe: Finland, Iceland, Norway, Sweden. Western Europe: Austria, Belgium, Denmark, France, Germany, Ireland, Luxembourg, Netherlands, Switzerland, United Kingdom. Southern Europe: Cyprus, Greece, Italy, Portugal, Spain. Central and eastern Europe: Czechia, Estonia, Hungary, Latvia, Poland, Romania, Slovakia.

2. The importance of covered bonds from various perspectives

2.1 Buyers' and sellers' perspective

Mortgage bonds are securities embodying a debt relationship issued by credit institutions mainly with the collateral coverage of mortgage loans. These are regarded as being among the safest assets on banks' balance sheets due to their real estate collateral. The loans are earmarked as collateral for the outstanding covered bonds and are kept in separate cover pools. As a result of the coverage, as well as the strict regulatory requirements and accompanying tight supervision, mortgage bond investors can keep their money in a low-risk and relatively crisis-proof asset. Mortgage bond owners have a double claim: first, on the issuing institution, and second, in the event of its eventual insolvency, on the cash flows from the mortgage loans serving as collateral (Borkó and Herbert (2023)). Moreover, mortgage bonds cannot be involved in the crisis management process during bank resolution procedures (they are not part of "bail-in-able" liabilities). Due to all these reasons, despite the cover pool assets' sensitivity to real estate market price volatility, mortgage bonds' rating can even be significantly better than that of the issuing bank or the home country of the issuing bank.

Banks may benefit from a new form of funding for their mortgage lending operations. Less liquid mortgage loans can be transformed into covered bonds, enhancing liquidity. Banks can diversify their funding mix and investor base and extend the maturity profile of the liabilities. Through the joint issuance of a covered bond, small institutions can also access (international) capital markets that would otherwise not be available to them (Avesani et al (2007)). The low risk of these instruments is also reflected in a number of prudential requirements that make covered bonds an attractive source of funding for banks. The EU regulation on the calculation of capital requirements (Capital Requirements Regulation, CRR) allocates a favourable risk weighting to mortgage bonds in certain legal constructions and they can be considered liquid assets when calculating the Liquidity Coverage Ratio (LCR).

2.2 Policymakers' perspective

Capital market development requires a number of factors, including macroeconomic stability, a stable and sound financial system, and a solid institutional framework along with adequate supervision and regulation (Rojas-Suarez (2014)). Building a deep and liquid mortgage bond market can contribute to all these prerequisites. First, additional mortgage financing through these instruments and the resulting lower financing rates can help economic growth via the real estate market. Second, rules protecting investors, issuers and borrowers alike (such as LTV ratios, mortgage value rules, etc) are key characteristics of such covered bonds, ensuring prudent lending practices for bond-financed mortgages. Third, covered bonds are typically long-term funds, often with fixed interest rates that therefore strengthen the maturity matching of banks' balance sheets. Lastly, the strong legal safeguards attached to covered bonds require that the institutional, regulatory and supervisory framework is attractive enough for investors to enter the market.

In theory, capital market development should occur sequentially, partly due to the natural deepening of the financial infrastructure and partly due to prudential considerations. As an information asymmetry exists between investors and issuers (buyers and sellers), the former are expected to prefer simpler contracts, less risky investments, higher collateralisation, shorter maturities and more direct control in the allocation of funds in early stages of financial development. As banking systems develop and reach a high level of stability, trust in financial intermediation also strengthens, leading to more control being relinquished by investors. This leads to the creation of capital markets, usually in debt instruments as these have lower verification costs than equity. Issuers are also expected to favour debt instruments due to the lower expected return (Carvajal et al (2019)).

While countries may exhibit different characteristics and capital markets may therefore develop in differing sequences and structures, covered bonds may serve as a solid foundation for policymakers to support the deepening of their domestic capital markets. Covered bonds offer a level of transparency and clarity that should prove more attractive as an initial investment to investors in emerging markets with less developed financial instruments compared to more sophisticated products, such as derivatives. The assets backing these bonds are mostly mortgages, the creditworthiness of which will be ensured by the strong legal requirements that usually pertain to these instruments, offering a suitable next step to investors once long-term stability of the banking sector has been achieved. As issuers are banks, the verification costs of investors may also be lower compared to other investment vehicles given the strong prudential and disclosure requirements. Furthermore, the development of a deep and active covered bond market can foster financial stability by reducing maturity mismatches in banks' balance sheets, thereby supporting two policy objectives at once.

From a prudential point of view, one of the most beneficial features of covered bonds is that their low risk level allows lenders to obtain long-term stable funds in capital markets at a reduced borrowing cost. By increasing the share of such liabilities on their balance sheets, banks can significantly improve their maturity matching. The maturity of mortgage loans is usually long, up to 20–30 years or even more, while banks' funding typically has a much shorter or no maturity. Therefore, a significant gap develops between the asset and liability sides. This has the potential to exacerbate the impact of exogenous shocks, increase the severity of crises and slow the post-crisis adjustment process (Goldstein and Turner (2004)). By issuing mortgage bonds, it is possible to attract long-term funds at a relatively favourable price to reduce this maturity mismatch and the risk of liability rollover. In addition, the interest risk of the bank arising from fixed-rate loans, which significantly reduce the risk of default, and the bank's interest rate risk arising from bank sources with variable interest rates (eg deposits) can also be substantially reduced by issuing fixed-rate mortgage bonds (Borkó and Herbert (2023)).

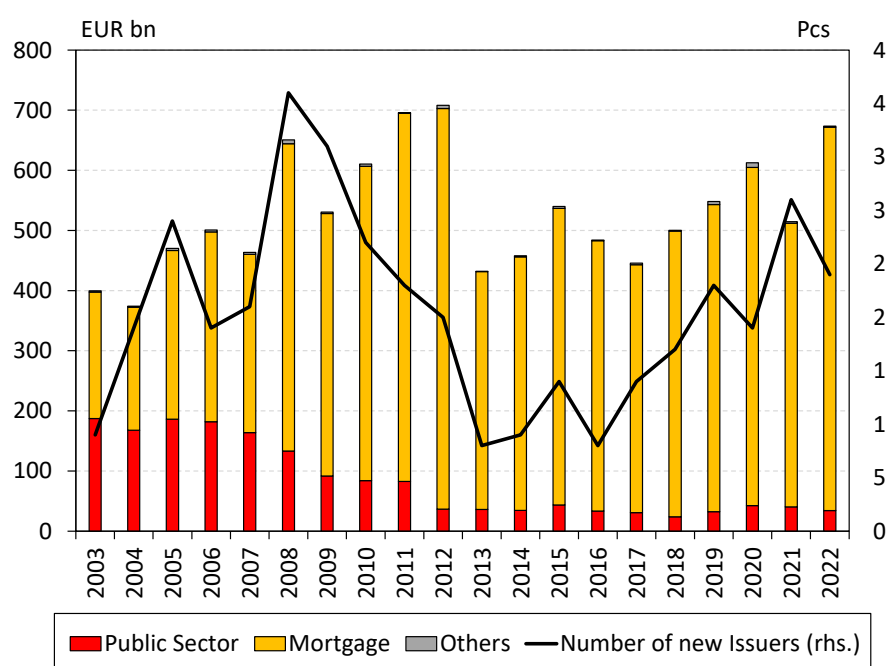
3. Recent trends in covered bond markets

As funding instruments, covered bonds have been resilient during various crises, from the 2008–09 financial crisis to the Covid-19 pandemic and today's conflicts. Covered bonds have shown their safe haven status similarly to developed countries'

government bonds and have proved to be one of the asset classes that have managed to restore investor confidence and ensure issuers access to capital markets in volatile times. Even during the European sovereign debt crisis, covered bond issuance reached record high levels in 2010–11, supported by the demand for safe and secure assets from investors while banks were struggling to sell unsecured bank debt. Compared to senior bonds, covered bonds are more attractive now than before the financial crisis, which is also reflected in the pricing. In addition, the European Central Bank’s asset purchase programmes have supported market liquidity (Nicolaisen (2017)).

Covered bond issuance volume and number of new issuers

Chart 2



Source: ECBC (2023).

The covered bond market has a decent track record historically in Europe, but recently bond issuance has surged outside of Europe also, especially in countries where issuers have partially replaced central bank funding with covered bonds, such as Canada. The European Covered Bond Council (ECBC) expects issuance in these new markets to increase further, supported by new issuers in countries with an established legislative framework, such as South Korea and Singapore. Further growth can be expected once new legislative frameworks are established, granting issuers in new markets access to covered bond investors (ECBC (2023)).

The recent rise in interest rates and tightening monetary conditions largely affects the covered bond market through decreasing housing loan demand. The ECB bank lending survey shows sharply decelerating housing loan demand due to higher interest rates, weaker consumer confidence, and a darkening market outlook (ECB (2023)). Rising rates have contributed to a reduction in debt financing flows to households for house purchase. In addition, the ECB decided to stop the asset purchase programme reinvestments or third covered bond purchase programme

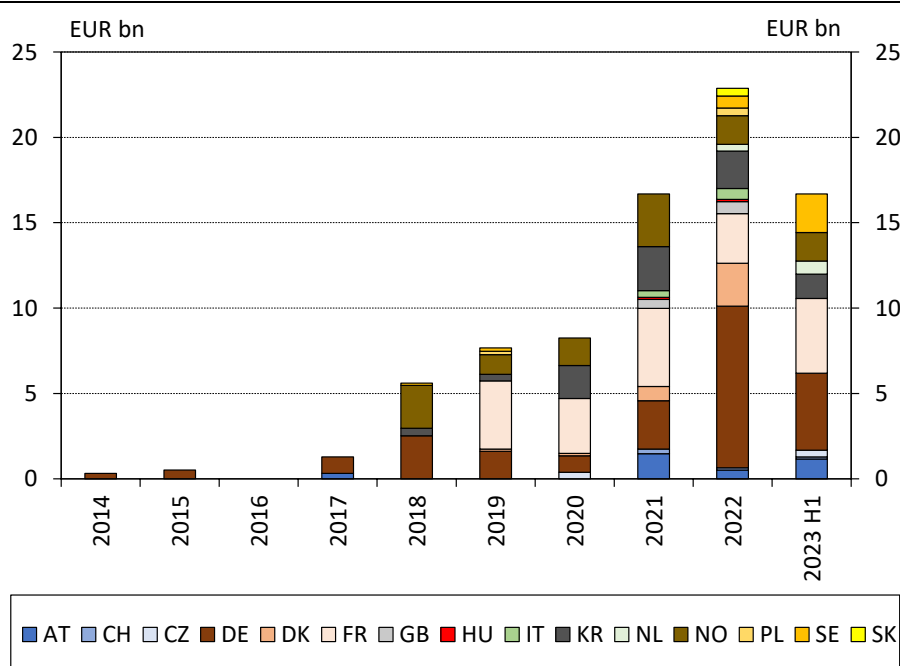
(CBPP3) as of July 2023, which is relevant from a market liquidity perspective. Consequently, weaker lending growth weighs on issuance potential and market liquidity recovery is likely to be a slow and gradual process. The issuing capacities of covered bond issuers and the asset quality in the cover pools are closely linked to real estate market developments, which have been pointing to increasing risks due to slowing price developments and lowering transaction numbers (MNB (2023a)).

The conditions for granting preferential capital treatment to covered bonds in Europe will be strengthened through additional requirements outlined in new EU legislation. The European Parliament is proposing laws on securitisation and covered bonds to further enhance capital markets. This involves introducing new asset classes of debt instruments and providing access to new participants. The market might provide attractive alternatives for long-term investors (ECBC (2023)). Covered bonds are preferred in country-level regulation as well; for example in Germany, where these instruments have a deeper culture, covered bonds are not subject to mark-to-market rules. However, varying country-specific frameworks and practices pose challenges for achieving a consistent treatment of covered bonds.

Trends in sustainability are also one of the most decisive factors in the covered bond market's current development. In 2022 the new issuance of sustainable covered bonds coming from 14 countries exceeded EUR 20 billion for the first time. This was almost equal to the total issued volume before 2021; however, compared to the total market, it is still not significant. In 2023, new issuance was around EUR 17 billion during the first half of the year, implying that the market continues to expand at a solid pace and is likely to reach a new record in terms of issuance in 2023 (ECBC (2023)).

Sustainable covered bond issuances in Europe by country

Chart 3



Source: ECBC (2023), estimated data.

A key reason for issuers to come to the market with covered bonds in a sustainable format is that these bonds tend to broaden the investor base, so they can be priced with a premium (or so-called “greenium”). The greenium, however, does not seem to be the selling point of green covered bonds. We see relatively small or no advantage in pricing when comparing conventional and green bonds. Germany has started issuing so-called “twin bonds”, which are identical apart from the green aspect, with the goal of measuring the greenium. This phenomenon is reflected in the pricing as well, since there has never been more than a 1 percentage point advantage over the green bond. The reasons behind the relatively small greenium are limited size and liquidity, almost identical risk profile, plus mistrust because of greenwashing (Sakai et al (2023)).

4. The Hungarian case of rebuilding the mortgage bond market with central bank policy support

4.1 Complex policy mix to revitalise the mortgage bond market

In Hungary, following the German model, the foundations of today’s legal framework for mortgage bonds were laid out in the 1990s (Papp (2005)). In the early 2000s, due to the introduction of state interest subsidies available for housing loans financed with mortgage bonds, the stock of mortgage bonds in circulation experienced a rapid and significant increase. However, with the withdrawal of the scheme, cheaper but less stable sources came to the fore, which contributed to the buildup of systemic risks in the banking sector. With the gradual expiration of previously issued mortgage bonds, by the end of 2016 the stock fell to about a third of the end-2009 volume.

In order to reap the benefits of mortgage bonds for capital market development and financial stability detailed earlier, starting in 2017 the MNB started supporting the redevelopment of the market and issuances with several instruments. These included supply-type regulatory incentives (a macroprudential policy tool), demand-type bond purchase programmes (monetary policy tools) and other soft coordinator-type assistance (negotiations, regulatory initiatives, stock exchange index, etc).

To achieve financial stability goals, in April 2017 the MNB introduced the regulation on the Mortgage Funding Adequacy Ratio (MFAR), the purpose of which was to reduce the maturity mismatch between bank HUF assets and liabilities. The introduction of the measure was warranted in particular by the long-term HUF mortgage loan portfolios increase after the conversion of FX loans into HUF debt implemented in 2015. This led to an increase in the HUF maturity mismatch of Hungarian banks that mostly relied on deposit funding and other short-term financing. Based on the regulation, the residential mortgage loan portfolio with a remaining maturity of more than one year must be financed in a specified proportion with long-term mortgage-backed funds, ie mortgage bonds or refinancing loans taken out from mortgage banks and serving as collateral for the issuance of mortgage bonds. In the beginning, 15% of mortgage loans had to be financed with such liabilities, and this has gradually increased to 25% in recent years.

The MNB regularly reviews the MFAR requirement regarding market developments and financial stability goals with the intention of deepening the

mortgage bond market and strengthening and diversifying demand without overly increasing banks' operating costs. Accordingly, the requirement has changed several times in light of changing market conditions and in close cooperation with market participants. This has meant both level increases and changes in content, primarily affecting the quality characteristics of acceptable funds, as well as limiting cross-financing, and recently the postponement of previously announced tightenings (Table 1).

History of and revisions to the MFAR regulation				Table 1
Applicable from	Step	Reason	Impact	
1 April 2017	Introduction of the MFAR regulation encouraging an increase in HUF maturity consistency through the involvement of long-term, mortgage-based funds, with a minimum level of 15%	Decrease HUF maturity mismatch, revitalise mortgage bond market	Tightening	
1 October 2018	Regulatory limit increase to 20% and tightening affecting the quality of the funds that can be drawn	Decrease HUF maturity mismatch, revitalise mortgage bond market	Tightening	
1 February 2019 and 1 October 2019	Regulatory limit increase to 25% and tightening of the de minimis limit and the quality of funds that can be raised	Decrease HUF maturity mismatch, revitalise mortgage bond market	Tightening	
24 March 2020	Relief related to the effects of the pandemic , suspension of cross-financing restrictions	Covid-led complex financial-economic situation	Loosening	
1 July 2021	Consideration of green mortgage-based funds with preferential weighting, introduction of strictures strengthening financial stability goals from 1 October 2022 (since then postponed)	Need to increase new (green-focused) investors and target ESG risks	Loosening	
1 July 2022	Acceptance of FX mortgage-based funds under certain conditions, raising the de minimis limit, postponing tightenings to 1 October 2023	Need to increase new (foreign) investors to decrease cross-banking ownership	Loosening	
23 December 2022 and 1 January 2023	Postponement of restrictions (level increase, cross-ownership rules, expectation of stock market introduction) for an indefinite period and technical modification in order to ensure the acceptability of the legal new form of refinancing	Complex economic-financial environment	Loosening	
1 October 2023	Postponement of the green requirement for funds based on FX mortgage bonds entering into force on 1 October 2023 to 1 October 2024	Complex economic-financial environment, slowed lending, high interest rate environment, FX market entry barriers	Loosening	
Source: MNB.				

In 2018, the MNB also launched a mortgage bond purchase programme (MBPP) primarily for monetary policy reasons. The mortgage bond market is an interest rate channel that affects borrowing conditions and smooth market functioning; ample liquidity is desired for effective policy transmission. The programme also supported adaptation to MFAR requirements and market development by ensuring robust

demand of a suitable volume under favourable price conditions. The first purchase programme ended at the end of 2018; it was restarted by the MNB in 2020 during the Covid-19 outbreak, and then continued in 2021 targeting only green mortgage bonds (Table 2). The general features of the programmes were: (1) purchased assets could be HUF bonds with a fixed interest rate and minimum (three or five years) initial maturity; (2) asset purchases happened on both primary and secondary markets; and (3) additional requirements were also incorporated to boost market developments, such as the mandatory listing of bonds on the stock exchange or contracted market-makers providing daily two-way quotations.

History of and revisions to mortgage bond purchase programmes (MBPP)			
Table 2			
Applicable from	Step	Reason	Impact
Q1–Q4 2018	First MBPP	Introduced in the easing cycle to lower long-end yields and revive the mortgage bond market.	Loosening
Q2–Q4 2020	Second MBPP	In response to Covid-19 to ease credit conditions and provide liquidity support.	Loosening
Q3 2021–Q2 2022	Green MBPP	In line with the new green mandate to adopt best practices and foster first green bond issuances.	Loosening
Source: MNB.			

Furthermore, partially within the preparatory and revision processes of previously mentioned policy steps, the MNB has made significant efforts to support a comprehensive and consistent legal framework by giving suggestions to the Ministry of Finance related to the mortgage bond regulatory framework in Hungary along with data reporting obligations and definitions. Additionally, the MNB initiated the exploration and introduction of the Budapest Stock Exchange mortgage bond market indices,¹ to increase transparency and help investors' decisions, which also supported the development of the market.

4.2 The results of coordinated central bank policy interventions

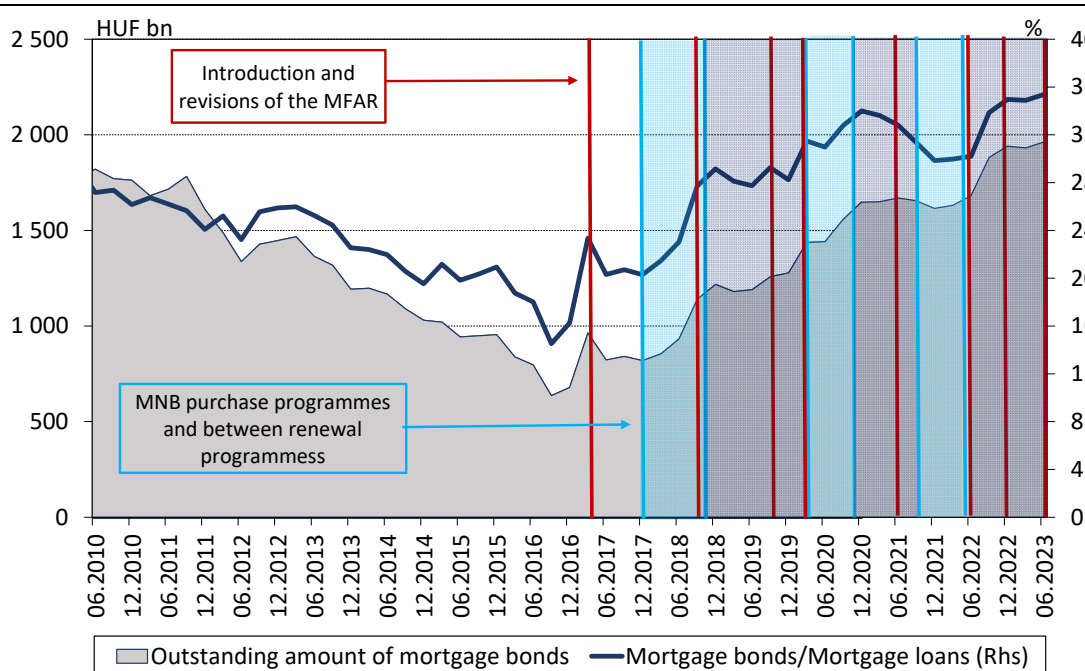
In large part thanks to the MNB's actions and in a favourable macro-financial environment, the domestic mortgage bond portfolio started to grow again in 2017 and increased to the 2007–08 pre-crisis levels, more than doubling the outstanding mortgage bond amount and reaching 36% of the mortgage portfolio's volume (Chart 4). The regulatory steps taken by the central bank induced significant changes in the structure of the market and the level of competition among institutions as well: two new mortgage banks (institutions with a specialised licence to issue mortgage bonds) were established (Erste and K&H) in addition to the already existing ones (OTP, FHB – now MBH – and UniCredit), increasing the number of issuers to five; the refinancing

¹ See MNB, "New mortgage bond index to support market development", press release, Budapest, 30 November 2017, www.mnb.hu/en/pressroom/press-releases/press-releases-2017/new-mortgage-bond-index-to-support-market-development.

market (where issuers provide loans to finance the mortgages of banks that have no licence to issue mortgage bonds) also became more active and competitive. Accordingly, the balance sheet maturity structure of banks has improved and the mortgage bond market has been steadily revitalised, enhancing stable funding and thus financial stability. Also due to the MNB's steps, green mortgage bonds financing energy-efficient housing have also appeared in the Hungarian market since 2021, rising to a close to 10% share within all mortgage bonds (Chart 5).

Mortgage bonds and mortgage bond/mortgage loan rate in Hungary

Chart 4



Source: MNB.

4.3 Remaining challenges and corresponding objectives

Despite the significant results of the recent regulatory steps, certain challenges remain for developing a self-sustained and efficient mortgage bond market (MNB (2023b)). It is important to take macroeconomic and financial market developments into account to provide an effective framework for deepening capital markets and enhancing financial stability without significant side effects.

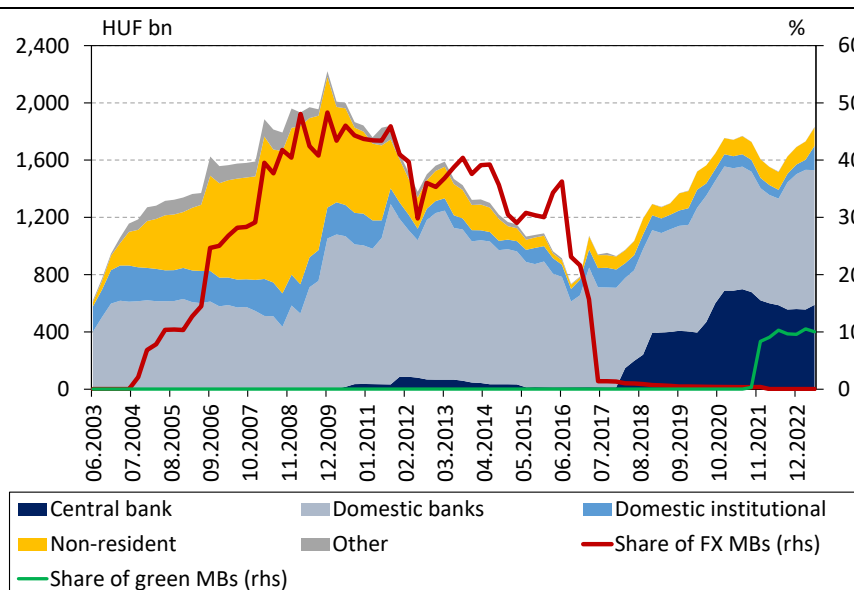
In the current market environment, the renewal of expiring mortgage bonds may prove to be a challenge from an investor and cost perspective. The high inflation and high interest rate environment and tight monetary policy disincentivise the growth of the market. The real estate market is showing a significant slowdown, while mortgage lending has dropped sharply, leading to sluggish growth or even a decline in the available volume of cover pool assets (MNB (2023c)). Central banks are currently also less active as investors through purchase programmes, leading to increasing funding costs and lower liquidity.

Although the mortgage bond market has undergone significant development, the scarcity of demand and the concentration of the investor base remains a challenge (Chart 5; Borkó and Herbert (2023)). The cross-ownership of mortgage bonds between banks, financed from other, usually short-term funds, does not lead to raising new stable funds at the system level, and moreover carries contagion risks among the institutions. Additionally, concentrated ownership causes low market liquidity and correspondingly less favourable price conditions, increasing the relative costs of this type of funding.

The MNB has made several steps within the MFAR requirement to diversify the ownership structure by introducing cross-ownership restrictions (currently postponed), by accepting and showing positive discrimination towards green mortgage bond-based funds (from 1 July 2021), and also by accepting FX mortgage bond-based funds (from 1 July 2022). However, there have been no significant changes yet, as the government bond market has a strong displacement impact, the complex financial-economic environment after Covid-19, heightened by geopolitical conflicts, is unfavourable for issuers, and the non-bank institutional investor base in Hungary is weak. Therefore, several planned MFAR tightenings have been postponed. The market outlook is currently unsure due to economic and geopolitical uncertainties, but the likely normalisation of monetary and financial conditions is expected to enable the corresponding revisions to the MFAR regulation. Increased limits and the reintroduction of banking cross-ownership constraints, along with increases in green and/or FX issuances, have the potential to support a significant step in the evolution of the Hungarian mortgage bond market. These may improve the ownership structure, inviting new non-banking institutional and foreign investors and ensuring the self-sustained development of the Hungarian mortgage bond market in the future.

Outstanding mortgage bonds by ownership sector, denomination and green aspect in Hungary

Chart 5



Data at face value.

Source: MNB.

Conclusion

Mortgage bonds play a key role in European financial markets and offer significant benefits for investors and banks; moreover, these financial instruments encourage financial stability and the development of capital markets. For emerging market economies (EMEs), mortgage bonds represent an important milestone to introduce new capital market instruments and enable relatively low-cost stable funding for the banking sector. In Hungary, the MNB's support via macroprudential and monetary policy instruments has achieved significant results and can therefore serve as an example for other EMEs with similar market structures. An important lesson is that while regulatory incentives can significantly contribute to market development, the sequencing of these steps should take into account the state of the economy and the financial system and adapt flexibly to any changes to minimise negative side effects.

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The changing nature of the financial system: implications for resilience and long-term growth in emerging market economies

Reserve Bank of India

The macro-financial health of emerging market economies (EMEs) has significant global and regional implications as they continue to serve as areas of growing demand, play a critical role in global supply chains and remain providers of global labour across the skill spectrum. A robust, far-reaching and adaptive financial system is critical to keep EMEs, such as India, on the high-growth track. Even as emerging markets remain susceptible to financial market spillovers from global movements, they have developed new areas of resilience. Countries such as India have also emerged as leaders in developing interoperable national fast payment systems and using digital public infrastructure to enhance financial inclusion. In what follows we outline the major trends and patterns in India's financial system in recent times, its role in promoting economic growth and policy action in building a resilient and stable financial system.

The changing nature of the financial system

The desirable features of a financial system are thought to include being less complex and more transparent, better capitalised and having a more sustainable level of maturity mismatch (IMF (2012)). A safe financial system would be competitive but without encouraging excessive risk-taking or dependence on implicit government guarantees.

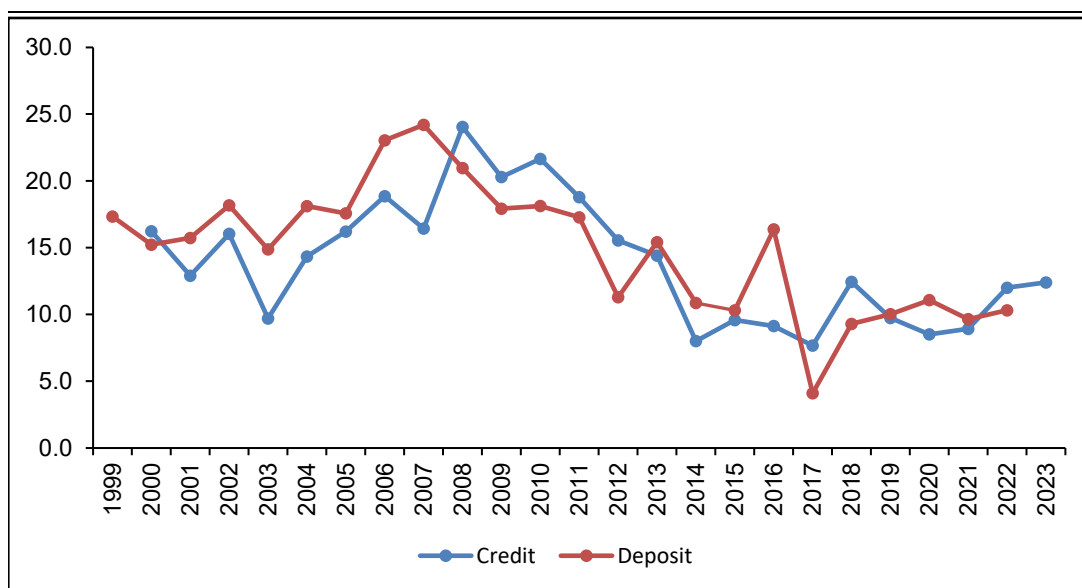
The Indian financial system has evolved into a more market-determined and development-oriented diversified financial system, especially since the 1990s. Successive reforms undertaken in various segments of the financial system have contributed significantly to this change, which was also facilitated by the changing demands of a growing economy. Currently, the Indian financial system is considerably diversified with vibrant financial and capital markets supporting the financial intermediation undertaken by financial institutions. In the financial institutions landscape, alongside various niche banks such as commercial banks, cooperative banks, new generation small finance banks and payments banks, India also has a large number of non-bank financial institutions (NBFIs). These institutions include non-bank financial companies (NBFCs), housing finance companies, insurance companies, development banks, mutual funds and other small players like pension funds and primary dealers. These entities are interlinked as well as with various segments of the financial markets such as the money market, bond market (mainly government securities, or G-Secs, and corporate bonds), forex market and stock market, among others.

The outbreak of the Covid-19 pandemic had a profound impact on lending practices in India. As a first reaction to the pandemic-related lockdowns, supply chains froze, demand declined and precautionary/forced savings increased due to lack of opportunities to spend, particularly in contact-intensive services. The confluence of these factors resulted in a sharp decline in credit growth even as deposits increased, affecting banks' net interest margins (Reserve Bank of India (2022)). In India, domestic credit growth had hovered around 10% during the previous 10 years. Even though credit growth went below 10% during the pandemic years, it has recovered in the last two years (Figure 1).

Growth rate of domestic loans and advances and deposits in India

in per cent

Graph 1



Source: CEIC database.

I.I Financial institutions in India

In the evolving dynamics of the Indian banking sector, private banks are asserting greater influence in terms of credit disbursal. There has been a significant surge in total loans disbursed by banks in India over the past two decades, with private banks displaying substantial growth.¹ This robust expansion underscores the rising market share² and increasing significance of private banks within the Indian banking sector. Although public sector bank (PSB) growth rates have been slower as compared with

¹ With total private sector loans increasing from INR 582.48 billion in 2000 to a staggering INR 54.63 trillion in 2023.

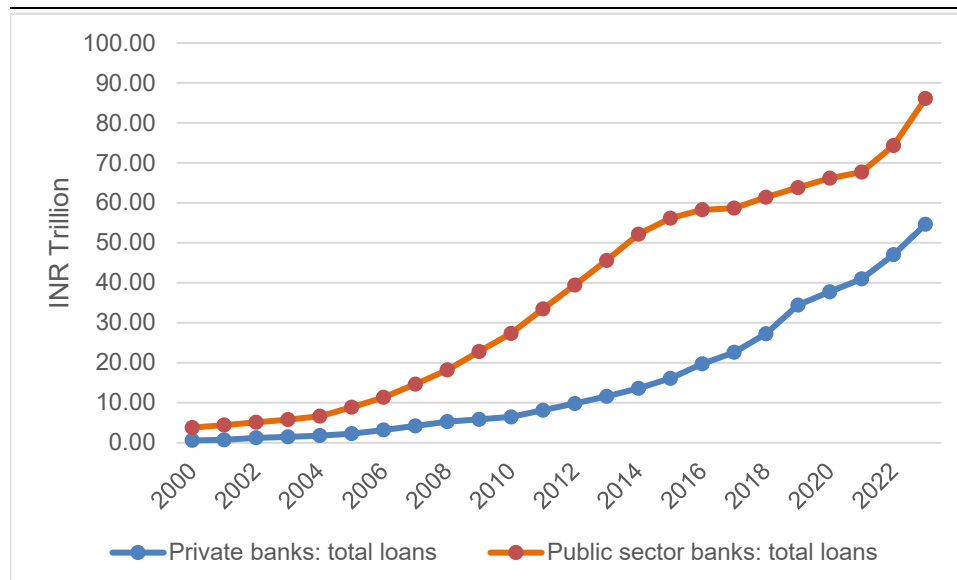
² The share of private sector banks in total loans increased from 19% in 2010 to 39% in 2023.

the private banks' during the period 2014–21, they continue to play a vital role in the banking landscape with a focus on priority sector lending (Graph 2).

Loans of private and public sector banks in India

In trillions of rupees

Graph 2



Source: CEIC database.

In India, the structure of the financial system has been undergoing changes in the last few years, with the NBFC sector increasing its footprint in financial intermediation, reflected in a gradual rise in credit intensity. NBFCs play a pivotal role in offering unconventional solutions that resonate with diverse segments of the population that remain underpenetrated by traditional banking institutions. Credit from the NBFC sector grew at 16.1% in 2022–23 compared to credit growth of 15.0% for scheduled commercial banks (SCBs). In terms of the sectoral distribution of NBFC credit, industry accounted for around two fifths of the overall lending portfolio at end-March 2023, attributable to infrastructure lending by large government-owned NBFCs, followed by retail lending with a share of around 31% (Reserve Bank of India (2023b)). A peculiar feature of this increased role of NBFCs has been a rise in interconnectedness with the traditional banking system. Bank lending to NBFCs grew by 70.7% during September 2020 to September 2023, which far exceeded the growth of 50.2% in aggregate bank credit during the same period.

Development banks cater to various sectors by providing long-term funding for agriculture, foreign trade, small industries, housing finance companies (HFCs) and infrastructure development, respectively.³ In India, HFCs extend housing finance to individuals, corporate bodies and cooperative societies. These HFCs have roughly one third market share in housing finance, second only to SCBs. HFCs' credit growth to the housing sector accelerated in 2022–23 due to the post-Covid shift in preference for home ownership, government initiatives to promote affordable housing, and

³ financialservices.gov.in/beta/en/nabard-act.

attractive tax incentives (Reserve Bank of India (2023b)). The National Bank for Agriculture and Rural Development (NABARD); the Export-Import Bank of India (EXIM Bank); the Small Industries Development Bank of India (SIDBI); the National Housing Bank (NHB); and the National Bank for Financing Infrastructure and Development (NaBFID) are the apex development banks/All India Financial Institutions (AIFIs) in India. During 2022–23, there was robust growth in the financial assistance sanctioned and disbursed by AIFIs, largely driven by SIDBI's efforts to bolster support for the credit requirements of the micro, small and medium-sized enterprises (MSMEs) sector. However, the overall disbursements of AIFIs as a percentage of sanctioned financial assistance experienced a decline in 2022–23⁴ (Table A1).

I.II Financial markets

The relative importance of bank intermediation and capital markets in India has shifted over the past 20 years, with capital markets gaining greater significance as a source of funding, investment and risk management. In emerging markets, where there is less diversity in financial markets, the stock market could be a crucial source of funds. However, banks continue to play a key role in the financial system, and both banking and capital market segments are expected to coexist and complement each other in driving economic growth and development in India. The extant literature suggests that the positive effects of bank credit on growth, capital accumulation and productivity enhancement become more pronounced when stock markets are active and developed (Botev et al (2019); Sehrawat and Giri (2015)).

In recent years, the dynamism in Indian stock markets indicates that it is likely that larger Indian corporates with better balance sheets will shift more towards equity and low-cost debt financing. The share of banks and financial intermediaries in the composition of debt of non-financial firms in India declined to 35% in 2021–22, from over 50% in 2010–11, while that of debentures and bonds increased to 23%.⁵

The market capitalisation of the Bombay Stock Exchange (BSE) has seen substantial growth of around 360%.⁶ In January 2024, it was at an all-time high of around INR 334.7 trillion,⁷ making India the world's fourth largest stock market in terms of market capitalisation⁸ (Graph 3.A). Public issues have also been steadily rising in India, with the highest number of initial public offerings (IPOs) issued in 2010.⁹ The amount raised through IPOs has also shown an increasing trend over the years, with 2021–22 recording the highest amount raised at INR 1.3 trillion (Graph 3.B). This

⁴ Reserve Bank of India (2023b).

⁵ Source: Centre for Monitoring Indian Economy (CMIE).

⁶ Increasing from approximately INR 65 trillion in 2010 to around INR 299 trillion in 2023.

⁷ CEIC database.

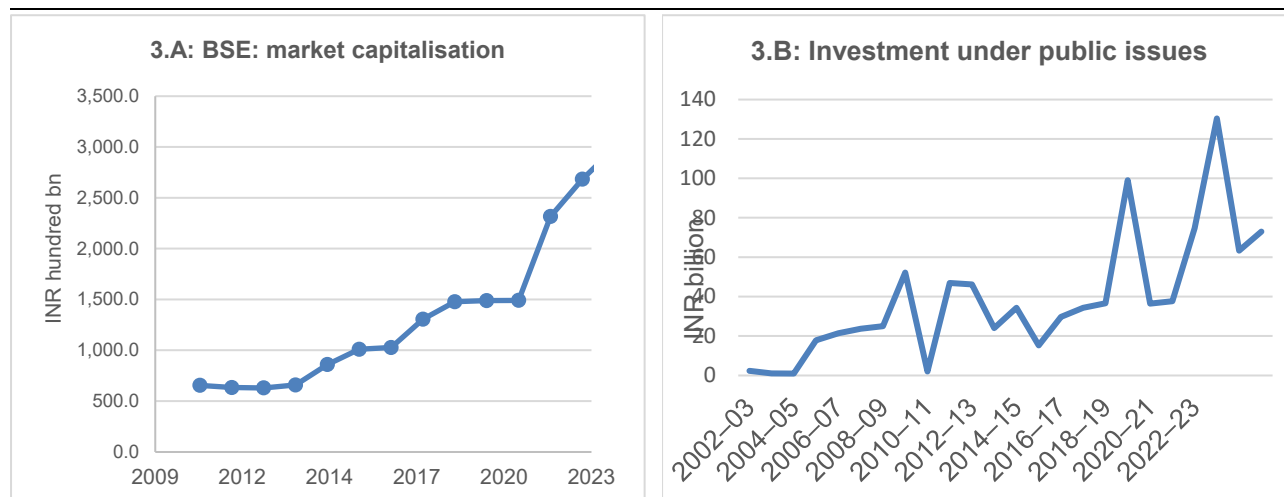
⁸ www.livemint.com/market/stock-market-news/india-overtakes-hong-kong-as-world-s-fourth-largest-stock-market-11705975318603.html.

⁹ Total funds raised through public issues reached approximately INR 729.9 billion during 2022–23, a significant increase from INR 461.8 billion during 2010–11 (Prime Database: primedatabase.com/pub_demo.asp).

suggests a growing appetite for IPOs among investors and companies seeking capital,¹⁰ indicating a shifting trend towards capital markets as a vital source of funding and investment in India. The DEMAT value in the equity segment alone reached INR 331 trillion in December 2023, showing an increase of INR 24 trillion in the final month of the year.¹¹

Trends in market capitalisation and the number of public issues of the Bombay Stock Exchange (BSE)

Graph 3



Source: CEIC database.

Source: PRIME Database..

The establishment of the BSE SME platform in March 2012 and the National Stock Exchange (NSE) SME platform (also known as Emerge) in September 2012 aimed to address the financing constraints faced by small and medium-sized enterprises (SMEs) in India.¹² It has been found that firms listed on SME exchanges have higher profitability, liquidity and asset utilisation ratios as compared with unlisted SMEs as well as small firms listed on main boards (Ganguly (2022)).

Assets under management (AUM) of mutual funds in India have witnessed robust growth during the past 10 years. In May 2014, the industry's AUM crossed the INR 10 trillion milestone for the first time. Just three years later, by August 2017, AUM had more than doubled, reaching over INR 20 trillion. Then, in November 2020, AUM surpassed INR 30 trillion for the first time. As of 31 January 2024, the industry's AUM stands at INR 52.74 trillion¹³ (Graph 4).

¹⁰ economictimes.indiatimes.com/markets/ipos/fpos/indias-ipo-boom-a-sign-of-vibrant-markets-and-growing-investor-confidence/articleshow/105694715.cms?from=mdr.

¹¹ Source: National Securities Depository Limited.

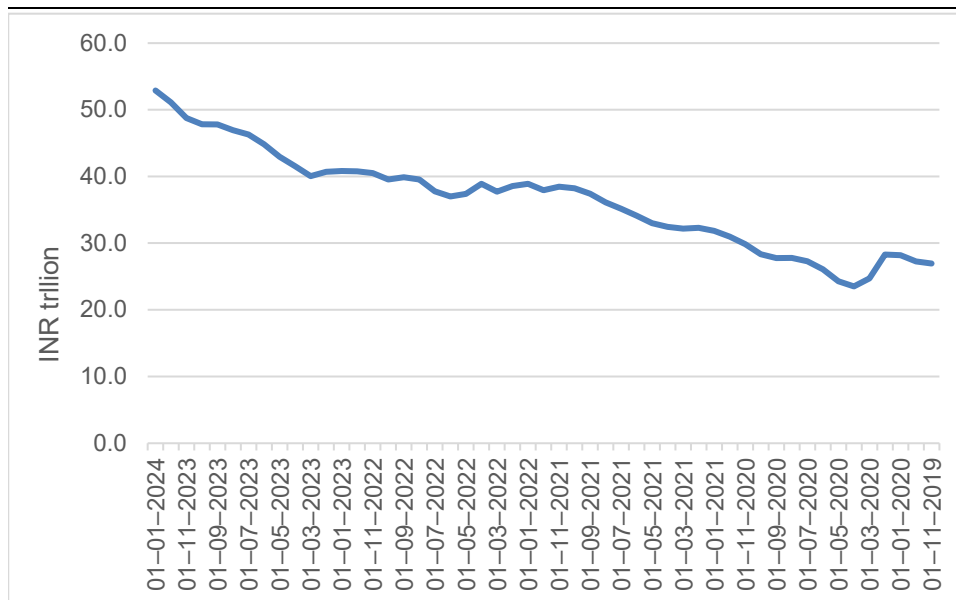
¹² Since the inception of these platforms, 633 SMEs have mobilised INR 77.77 billion in equity capital up to 2021–22. SMEs are of vital importance to the Indian economy due to their ability to create jobs and promote inclusive growth (Reserve Bank of India (2022)).

¹³ Association of Mutual Funds in India ([www.amfiindia.com/indian-mutual#:~:text=Assets%20Under%20Management%20\(AUM\)%20of,a%20span%20of%2010%20years](https://www.amfiindia.com/indian-mutual#:~:text=Assets%20Under%20Management%20(AUM)%20of,a%20span%20of%2010%20years)).

Average net assets under management of mutual funds in India

In trillions of rupees

Graph 4



Source: CEIC database.

Likewise, there has been a notable increase in insurance sector penetration, mainly driven by public sector companies. In 2022, India secured 10th position globally as an insurance market, with a premium volume of USD 131 billion, accounting for 1.9% share in the global insurance premium. Forecasts suggest that by 2032, India is set to reach the sixth position worldwide¹⁴ (Table A2). Both insurance premiums and AUM have increased constantly through the years¹⁵ (Graph A1). As of 2023, there are approximately 69 registered insurers in India, with 61 operating in the private sector and eight in the public sector¹⁶ (Graph A2).

The availability of a deep and liquid corporate bond market has significant positive implications for economic growth since it provides firms with a steady alternative source of finance for both long-term and working capital investments. Although the corporate bond market in India, at 25% of GDP, is smaller than many of its emerging market peers, it has been growing steadily and is projected to double within six years (Surti and Goel (2023); CRISIL Ratings (2023)). However, the corporate bond market in India remains limited in reach as it is largely dominated by top-rated bonds, with 97% of the issuances and trading in the corporate bond market happening in just the top three rating categories¹⁷ (Tyagi (2020)).

¹⁴ See Swiss Re (2023).

¹⁵ The period under reference pertains to 2010 to 2023.

¹⁶ CEIC database.

¹⁷ These categories refer to AAA, AA+ and AA. This is in contrast with the United States, for instance, where only 5% of the corporate bond market trading occurs in the top rating buckets of AAA and AA.

Both domestic and foreign investors have played an important role in India's expanding financial market. Despite fluctuations, there seems to be an overall positive trend in foreign portfolio investment (FPI). However, there have also been periods of negative FPI, such as in March 2020 and June 2022, indicating investor uncertainty and risk aversion.¹⁸ On the other hand, there was a noticeable increase in foreign direct investment (FDI) inflows from 2010 to 2016, reaching a peak of USD 64,679 million in 2020 followed by intermittent corrections in subsequent years, with FDI inflows in 2023 amounting to USD 41,326 million.¹⁹ Overall, the Indian capital market has witnessed growing confidence of investors, both domestic and foreign, within India's financial markets.

I.III Digital payments

Digital innovation is proving to be instrumental in reducing informality in the Indian economy. Digitising various data sources²⁰ is bringing more transactions hitherto untapped by providing electronic records and has helped to formalise economic activities. The presence of these records can further lead to providers extending credit to these institutions, leading to more formalisation of the economy. Further, digital innovation in the form of fintech platforms provides SMEs with alternative financing options beyond traditional bank loans. Platforms like peer-to-peer lending and the account aggregator ecosystem enable businesses to access capital more easily. Apart from this, leveraging advanced technologies such as data analytics and artificial intelligence, banks can identify credit line opportunities for customers and merchants engaged in significant unified payment interface (UPI) based digital payments. This is because of the far more accurate picture of the creditworthiness of the individual and business based on transaction history and algorithmic automated underwriting processes. A few examples of digital innovations in India are the Trade Receivables Discounting System (TReDS) and pre-sanctioned credit lines from banks through the UPI.²¹ Recently, the Reserve Bank of India (RBI) has approved linking of RuPay credit cards with the UPI, thus providing benefit to the customer and facilitating increased use of credit cards.²²

The pandemic accelerated digital adoption in financial services, with digital transactions surging through platforms like the UPI. The value of UPI transactions has grown at a CAGR of 168%²³ during 2018–23 (PIB (2023)) (Graph 5). Globally, India

¹⁸ CEIC database.

¹⁹ CEIC database.

²⁰ Starting from customer onboarding through digital identity management to visibility of assets through bank statements and other digital footprints of supplies and receivables, as well as API-based linkages to sources like the Goods and Services Tax Network (GSTN), income tax, Ministry of Corporate Affairs, etc.

²¹ This is an innovative financial offering which empowers individuals and businesses to access pre-sanctioned credit lines from banks. It facilitates the availability of low-ticket, high-volume retail loans, fostering economic growth and enhancing financial inclusion.

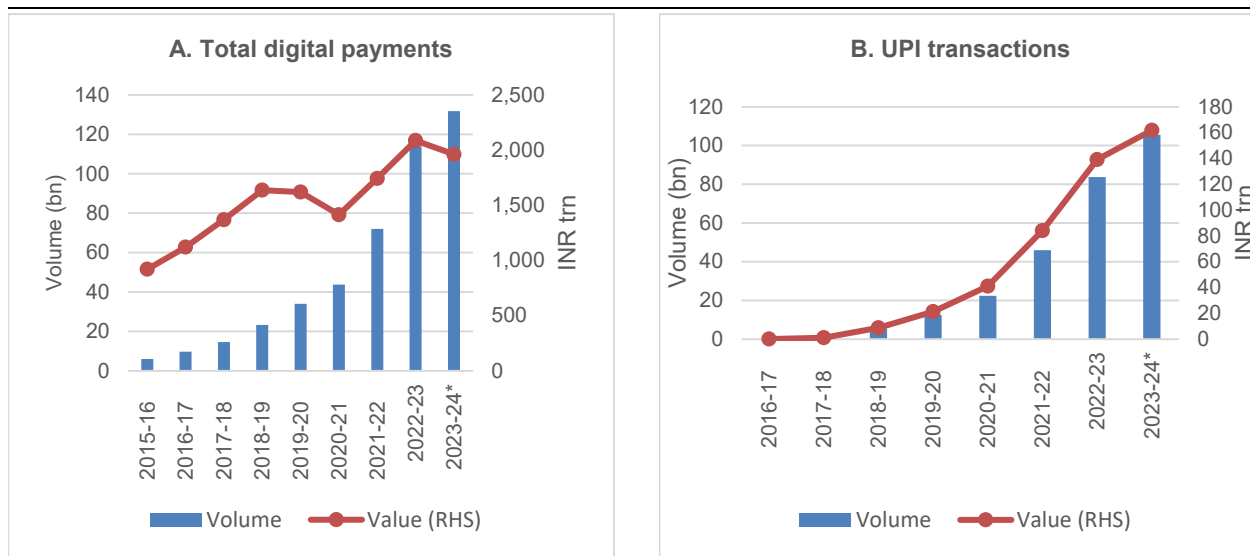
²² www.rbi.org.in/scripts/FS_PressRelease.aspx?prid=53831&fn=2752.

²³ From INR 1 trillion in FY 2017–18 to INR 139 trillion in FY 2022–23.

outpaced other nations to emerge as the largest player in real-time transactions, with a 46% share in 2022 (89.5 billion transactions). In order to make digital payments more seamless, on 8 March 2022 “DigiSaathi”, a 24x7 helpline, was jointly launched by the National Payments Corporation of India (NPCI), the payment system operators and participants.²⁴

Digital payments in India

Graph 5



Data up to January 2024.

Source: RBI.

I.IV Sectoral allocation of credit

I.IV. a. Growth in sectoral credit

The sectoral allocation of credit in India has undergone material changes over time, reflecting shifts in economic priorities, policy measures and changes in the business environment. Non-food credit growth, which was quite robust in 2018–19, with year-on-year growth of 13.4%, fell to around 6% during the slowdown of 2019–20.²⁵ The slowdown was exacerbated in 2020–21 when credit growth decelerated to 5.5% in the aftermath of the pandemic. However, with the gradual resumption of economic activity, credit to agriculture and services sectors has registered accelerated growth in the recent period with non-food credit growth reaching 8.7% in 2021–22 and 15.4% in 2022–23. The agriculture sector witnessed credit growth even during the pandemic,

²⁴ This initiative was launched with an aim to provide round-the-clock assistance to users regarding queries related to digital payment products and services. This highlights the resilience and adaptability of India's financial systems in response to unprecedented challenges.

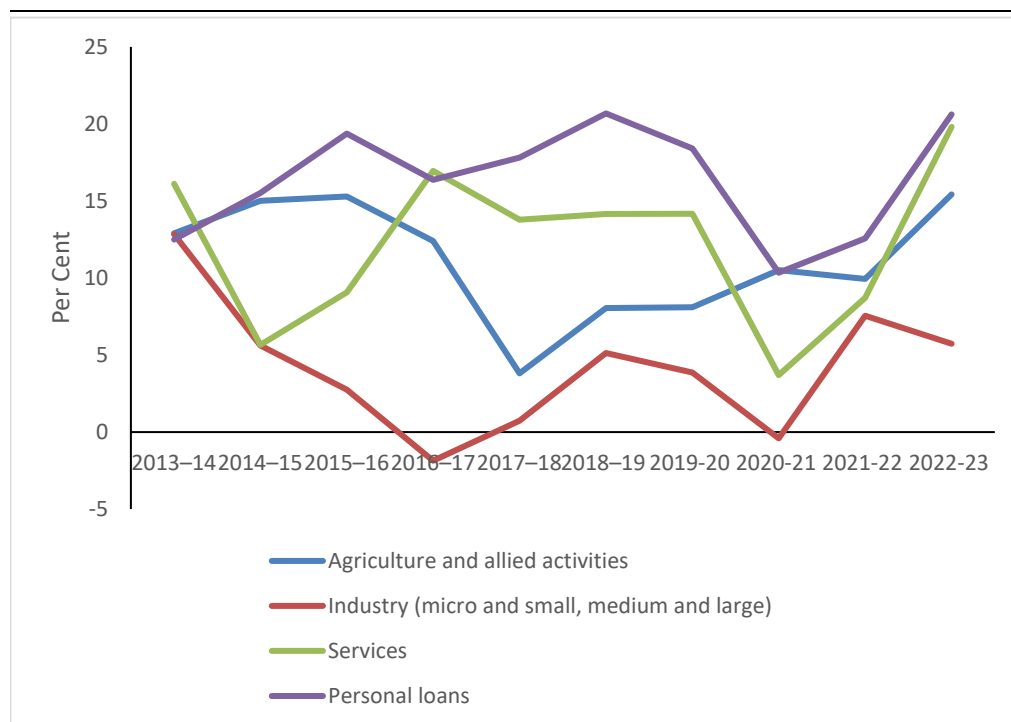
²⁵ Source: Database on Indian Economy, RBI.

from 8.1% in 2019–20 to 10.5% in 2020–21, and further to 15.5% in 2022–23 (Graph 6).

Industrial credit²⁶ growth turned negative to –0.4% in 2020–21 owing to the pandemic (Graph 6). In 2021–22, it picked up to reach 7.5%, and remains in positive territory post-pandemic. There was increased growth in credit to categories such as “food processing”, “petroleum, coal products and nuclear fuels”, “leather and leather products”, “paper and paper products”, “mining and quarrying”, “textiles”, “all engineering”, “rubber, plastic and their products”, “gems and jewellery”, “beverages and tobacco” and “vehicles, vehicle parts and transport equipment” after the initial setback due to the pandemic. However, credit to “cement and cement products”, “glass and glassware”, “construction” and “basic metal and metal products” experienced contraction (Graph A3).

Sectoral credit growth in India

Graph 6



Source: RBI, Handbook of Statistics on the Indian Economy, compiled from various years.

Credit growth to the services sector, which had slowed down significantly to 3.7% owing to the pandemic and the subsequent lockdown in 2020–21, has accelerated to reach 8.7% in 2021–22 and 19.8% in 2022–23, showcasing recovery. The growth was driven primarily by the “transport operators” and “trade” sectors. Additionally, “tourism, hotels and restaurants” also experienced accelerated growth despite the challenges of the pandemic (Graph A4). The trade sector exhibited strong

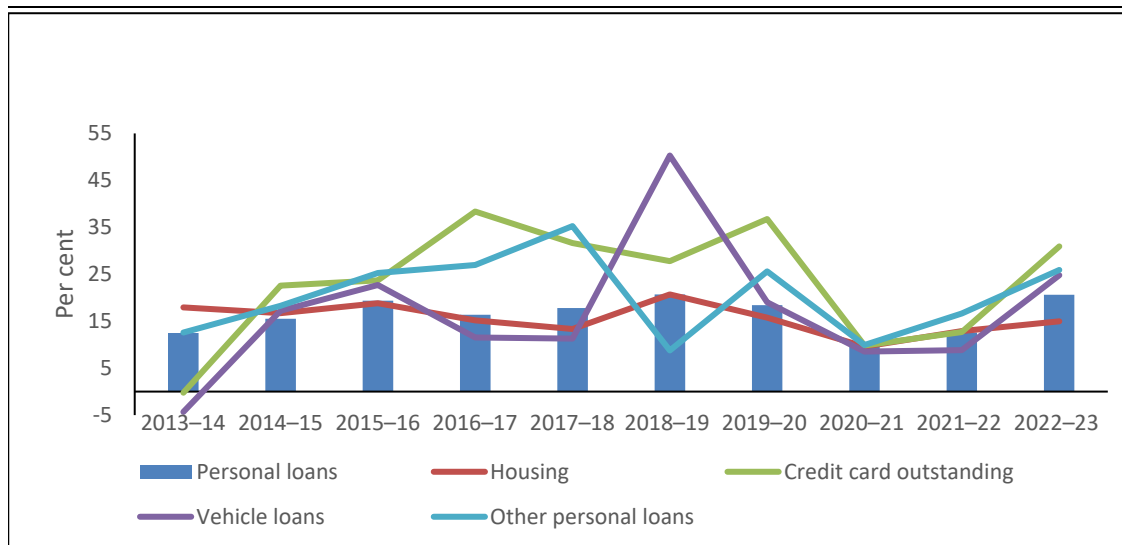
²⁶ Industrial credit encompasses funding for micro, small, medium-sized and large industries, determined by their investment in plant and machinery, as well as turnover.

performance throughout the pandemic, experiencing accelerated credit growth from 2020.

Personal loans had decelerated during Covid-19, falling from 18.4% in 2019–20 to 10.3% in 2020–21. The acceleration in economic activities and the latent demand of consumers has led to credit growth of 12.6% in 2021–22 and 20.6% in 2022–23. The pickup in credit uptake in this segment has been buoyed by credit demand in housing, credit cards and vehicle loans (Graph 7).

Credit growth within personal loans in India

Graph 7



Source: RBI, Handbook of Statistics on the Indian Economy, compiled from various issues.

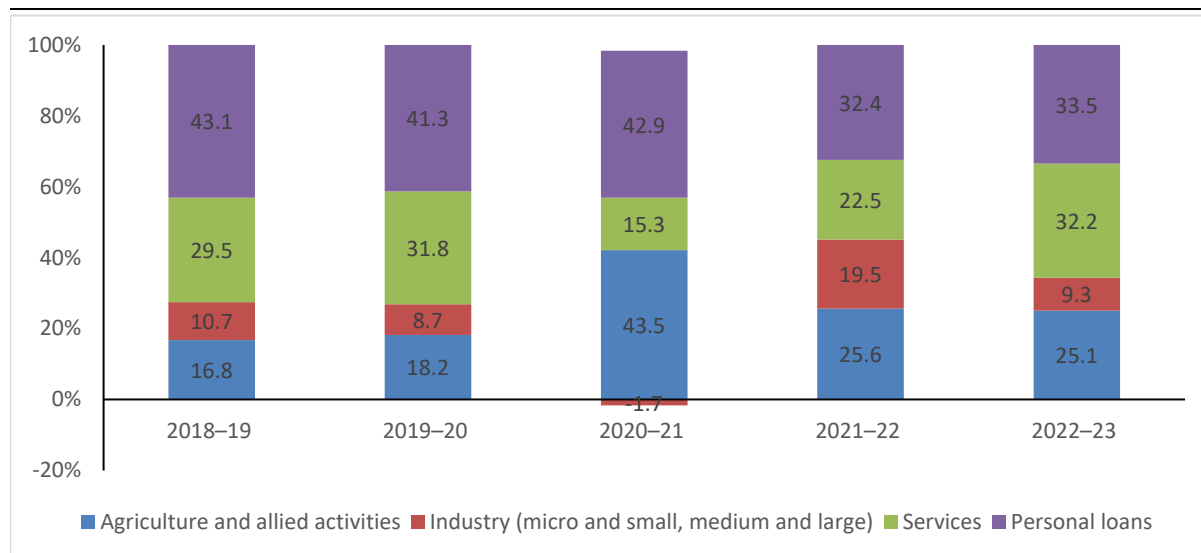
I.IV. b. Sectoral shares in total credit

The evolution in the sectoral shares of credit during the last five years shows that the share of personal loans has declined while that of agriculture and services has increased, though with a fluctuating trend. It is only the industrial sector which experienced an episode of negative share in the incremental credit flow in 2020–21 (Graph 8). In the fiscal year 2018–19, large industries constituted approximately 83% of the total credit to the industrial sector (Graph 9).

Sectoral shares of credit allocation in India

In per cent

Graph 8

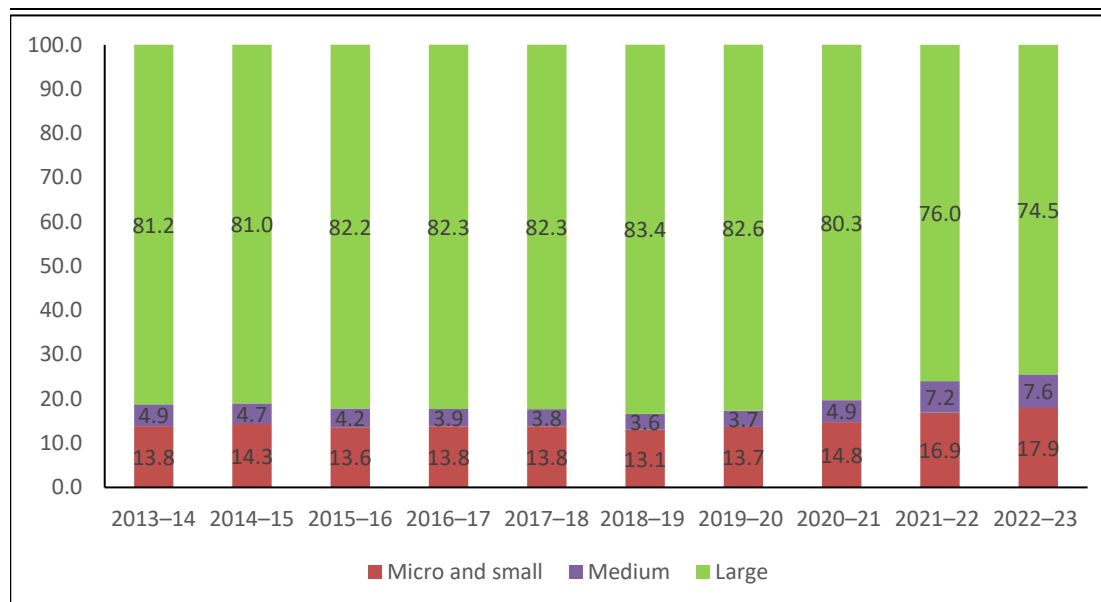


Source: RBI, Handbook of Statistics on the Indian Economy, various issues.

Allocation of industrial credit across segments

In per cent

Graph 9



Source: RBI, Handbook of Statistics on the Indian Economy, compiled from various issues.

There was a significant increase in the share of the agriculture and allied sectors in total credit from 18.2% in 2019-20 to 43.5% in 2020-21. This growth was supported by various measures taken by the government of India and the RBI. The performance of the agriculture sector bodes positively for rural consumption and suggests

potential revitalisation in the industrial sector, due to interlinkages and interdependence between the industrial and agriculture sectors, potentially influencing future credit and growth in the industrial sector.

Within the industrial sector, the infrastructure segment constituted approximately 32.6% of total industrial credit in 2019–20. This proportion increased to 33% in 2020–21 and further to 33.5% in 2021–22, indicating a sustained share of infrastructure in overall industrial credit. The infrastructure subsector credit growth declined from 17.2% in 2018–19 to 3.8% in 2019–20 and further to 1.1% in 2020–21,²⁷ marred by the slowdown induced by the pandemic, before gaining pace in 2021–22. In 2018–19, the power sector accounted for the highest share (54%) in infrastructure credit, followed by roads and ports (around 20%) and telecommunications (14%). The services sector share in the incremental credit flow was hit by the pandemic and fell from 31.8% in 2019–20 to 15.3% in 2020–21. During the recovery phase, the sector's share rose to 32.2% in 2022–23 (Graph 8).

Examining the sectoral composition of bond issuances may also help provide insights into their role in boosting economic growth. The financial sector dominates the issuance of bonds in India, holding a 60% share. Industry and public sector undertakings account for the rest. Corporate bond issuance from manufacturing and non-energy infrastructure sectors is a very small proportion of the overall bond market. Another feature of the Indian corporate bond market relates to a sharp growth in the smallest issue bracket (INR 1 million and lower).²⁸ This could reflect diversification of funding sources for previously excluded firms that formerly had to rely on bank lending only, implying higher future growth potential (Surti and Goel (2023)).

II. Excessive finance, resilience and long-run growth

Owing to wide heterogeneities in the size, nature and sources of finance of firms, it is difficult to establish the role of finance in driving long-term growth in India (Allen et al (2012)). However, it may certainly be argued that a generalised easing of financial conditions improves the economic growth rate over the long term.²⁹ Some estimates have suggested that, assuming an average credit-to-GDP ratio (0.5), annualised non-food bank credit growth of 13% will be needed to achieve the target of a USD 5 trillion economy by 2025–26 (RBI (2022)). Studies show that an increase in bank credit could revive the investment cycle. Recent RBI estimates suggest that a 1 percentage point increase in bank borrowings increases nominal net fixed assets by 0.17 percentage points (RBI (2023b)). India's credit-to-GDP ratio, which hovered above 100% until 2015,³⁰ experienced a decline thereafter to reach around 90% in recent years. Since

²⁷ Source: RBI, *Handbook of Statistics on the Indian Economy*, compiled from various years.

²⁸ These issuances grew at a cumulative annual growth rate of 20% between 2011–12 and 2021–22, roughly four times that of the largest issues (size of INR 1 billion and above).

²⁹ Estimates suggest that a 1 percentage point easing in the financial conditions index increases year-on-year GDP growth rates in the range of 1.1 to 1.3 percentage points (RBI (2022)).

³⁰ Source: CEIC database.

February 2020, deposit growth has been outpacing credit growth and although the gap has narrowed somewhat, the wedge still existed in March 2023.

Empirical evidence suggests that there is a positive causal relationship between financial depth/development and economic growth (MacDonald and Xu (2023); Singh et al (2016); Balasubramanian (2022); Levine (2005)). However, some have argued that beyond a certain level of financial development, the positive effect on economic growth begins to recede, while costs in terms of economic and financial volatility begin to rise. The plausible reasons for this negative effect on growth are an increase in macroeconomic volatility because of rapid credit growth, banks exposure to shocks, and non-commensurate developments in institutional and regulatory frameworks. Empirical studies have examined the relationship between bank credit and economic growth indicating the existence of threshold effects (Lay (2020); Ho and Saadaoui (2022); Cecchetti and Kharroubi (2019)).³¹ Accounting for cross-country variations, however, Botev et al (2019) find that there is no evidence of this “too much finance is bad” hypothesis.

The direct effects of financial integration on output volatility are ambiguous. This arises from the fact that the structural features of a financial system such as the extent of the intermediation function performed by banks versus non-banks, concentration and competition and cross-border competition can have implications for output volatility and long-run growth. Empirical evidence suggests that some structures of financial systems are likely to be more closely related to positive economic and financial stability outcomes than others.

Efficient allocation of credit, rather than simply credit growth, is important as misallocation³² could impede economic growth. In the Indian context, the extent of capital misallocation is reflected in the unusually high dispersion of productivity across firms (Hsieh and Klenow (2009)). Recent analysis suggests that for firms relying heavily on PSBs, the relationship between credit growth and productivity is weak (George et al (2023)). It has also been hypothesised that credit misallocation may also lead to burgeoning of zombie firms³³ potentially crowding out lending to more productive firms. A study by Chari et al (2021) shows that in the post-GFC period, there has been a rise in bank lending not only to firms with low liquidity but also to low-solvency borrowers. They find that stressed banks had an increased tendency to lend to zombie borrowers.

Yet another important aspect for strengthening the relationship between finance and growth is financial resilience. The growing interconnectedness in the financial system with its diversification is a challenge in this regard. A case in point is the NBFC sector in India. Alongside the growing interconnectedness with the banking sector, there is significant heterogeneity within the NBFC sector, which makes systemic risk

³¹ Lay (2020) identified an inverted U-shaped relationship and a threshold of 135% of GDP is found after World War II in 17 industrialised countries. Ho and Saadaoui (2022) document that the positive effects of finance on growth disappear at a threshold level of 96.5%. Cecchetti and Kharroubi (2019) document a negative relationship between credit growth and real growth. Finding an inverted U-shaped relationship between levels of finance and output, they argue that in growth terms the relationship is unequivocally negative.

³² Wherein less productive firms have access to credit while the more productive firms remain credit-constrained.

³³ A firm is classified as a zombie if it is unviable.

identification and monitoring a challenging task. However, substantial capital buffers, improving asset quality and robust earnings have increased the resilience of the NBFC sector, with the capital to risk (weighted) assets ratio (CRAR) at 27.6% in September 2023, well above the regulatory minimum of 15%. The results of a simulation exercise involving scenarios that assume simultaneous default of the top three and top five NBFCs, which have the potential to cause maximum solvency losses to the banking system, show that despite the contagion effect, both the Common Equity Tier 1 (CET1) ratio and the CRAR of the banking system will remain above the regulatory minimum as there are ample capital buffers. Overall, the banking system remains resilient to contagion risk from the NBFC sector.

Further, inclusion of smaller sectors and individuals under the umbrella of the formal financial system would be required to make economic growth broad-based. A large group of borrowers including MSMEs, agricultural labourers, daily wage labourers, women and micro-entrepreneurs remain underserved by the formal financial sector. While the contribution of these groups to aggregate output may be relatively small, having access to finance for these groups is vital for employment and long-term inclusive growth. However, despite the provision of collateral-free loans, government guarantees and several other measures, a few MSMEs still resort to non-institutional sources for getting timely credit, often at exorbitant rates of interest.

In this regard, there are many constraints to MSME finance³⁴ with an overall credit gap in the MSME sector estimated at INR 20–25 trillion.³⁵ From the banks' perspective, MSMEs are high-risk borrowers due to insufficient assets and low capital. There is less publicly available information on MSMEs than on large firms, and less reporting of transactions by MSMEs creates difficulties in assessing their real turnover and profitability. Consequently, it becomes difficult for banks to assess their creditworthiness, which can discourage lending, or the lenders substitute the lack of information with higher collateral requirements and/or higher interest rates.³⁶ Similar challenges are also faced by other underserved customers. They also suffer from non-availability of tailor-made credit products, as traditional banks lack the incentive to invest in such products, given that any such customised product would require changes to the core banking infrastructure that is designed to serve a mass population rather than a niche market segment.

III. Policy measures and discussion

The effect of financial development on economic performance is time-varying and also depends on overall economic development and trade openness (Botev et al (2019)). Policymakers should be focused on understanding the channels through which the financial system interacts with the real sector. Being cognisant of these

³⁴ See Mund (2020).

³⁵ See RBI (2019).

³⁶ Smaller-ticket retail loans are largely provided by NBFCs, which translates to a higher cost of borrowing for the customers (CRIF (2021)).

channels will help in developing appropriate valves to relieve stresses and aid growth, wherever possible.

Financial market development is a continuous process. While the RBI has already taken various steps to support the overall growth of the financial market, there are still further steps which could make the domestic market more vibrant. In the money market, it is seen that the transmission of monetary policy to overnight money market rates is instantaneous and full. However, there is a thinning of uncollateralised volumes which raises concerns around its representativeness and reliability.

Issuance of green bonds provides a strong signal of a country's commitment to a low-carbon economy. It also helps in bringing down the cost of capital for green projects. On behalf of the government of India, the RBI issued sovereign green bonds (SGrBs) in two tranches of INR 80 billion each on 25 January and 9 February 2023. During 2023–24, five-year and 10-year SGrBs of INR 50 billion in each tranche were issued on 10 November and 8 December 2023, respectively. In addition, 30-year SGrBs of INR 50 billion each were issued on 19 January and 2 February 2024. Further, RBI has notified the SGrBs as “specified securities” under the fully accessible route (FAR) for FPI, thus allowing non-residents to invest in these securities without any restrictions.

The orderly development of the sovereign yield curve needs significant market liquidity at important benchmark tenor points and a supply of G-Secs of various tenors to diverse classes of market participants matching their investment requirements.³⁷ As part of our continuing efforts to increase retail participation in G-Secs, the “RBI Retail Direct Scheme” was launched in November 2021 to enable individual investors to conveniently invest in G-Secs, state development loans (SDLs) and sovereign gold bonds. The RBI has been proactively taking steps to enable greater non-resident investment in G-Secs.³⁸

Principle-based regimes have been implemented in place of prescriptive regulations in a bid to provide greater flexibility and operational freedom to market participants in the derivatives markets. Considering the recent changes in the regulations relating to over-the-counter (OTC) derivatives and in line with international standards, a regulatory framework for market-makers in OTC derivatives has been put in place to ensure high standards of governance, risk management and conduct by market-makers.

RBI has also continued its efforts towards integrating domestic and offshore rupee markets. Banks in India with operative International Financial Services Centre (IFSC) banking units were permitted to access the offshore non-deliverable rupee derivatives market in 2020. To facilitate integration of offshore and onshore markets for overnight indexed swaps (OIS) – the most active rupee interest rate derivative in the domestic market – banks in India and standalone primary dealers (SPDs) have

³⁷ To this end, during 2020–21 the Benchmark Security Issuance Strategy was introduced, under which G-Secs of specific benchmark tenors of two, five, seven, 10, 14, 30 and 40 years are issued. Thereafter, G-Secs with a 50-year tenor have also been introduced after market consultation.

³⁸ While limits for non-resident investments in domestic markets were liberalised, the voluntary retention route (VRR) was introduced to facilitate non-resident investment in government and corporate bonds. The fully accessible route (FAR), introduced in 2020, enables non-residents to invest in specified G-Secs without any macroprudential limits.

been permitted to undertake settlement of OIS transactions with non-residents in foreign currency.

Digital technology is transforming the financial services landscape. Leveraging technology can improve not only the efficiency of capital allocation, but also the expanse of financial inclusion. However, we must be mindful of rapid growth of entities that use technology to provide financial services without appropriate guardrails, and it is important for authorities to identify, assess and respond to risks from these entities while continuing to foster innovation to improve efficiency of capital allocation. To keep pace with the dynamically changing landscape, the RBI has been making conscious efforts to facilitate innovation in the fintech sector for the larger public good. On 17 August 2023, the RBI launched the pilot of the Public Tech Platform for Frictionless Credit (PTPFC). The platform is being envisioned as a critical “digital public infrastructure” (DPI) in the lending space which has transformative potential. Currently, five loan journeys are live on the platform: Kisan Credit Card loan, Digital Dairy/ cattle loan, MSME loan, Housing Loan and Personal Loan. Ten banks have already been onboarded to the platform and are using 13 data services such as digitised land records, Aadhar e-KYC, NeSL e-signing, PAN validation, Account aggregator, Digilocker and CGTMSE,³⁹ which are provided through the platform. Technical integration of the Goods and Services Tax Network (GSTN) with the platform is also in progress post the gazette notification.⁴⁰

Strengthening cyber security frameworks and protocols is crucial to protect sensitive financial data and maintain trust in digital financial services. In this regard, on 2 June 2023 the RBI placed “Draft Master Directions on Cyber Resilience and Digital Payment Security Controls for Payment System Operators (PSOs)” on its website for comments. The document covers robust governance mechanisms for identification, analysis, monitoring and management of information security risks, including cyber security risks and vulnerabilities, and baseline security measures for ensuring safe and secure digital payment transactions.

³⁹ Credit Guarantee Fund Trust for Micro and Small Enterprises.

⁴⁰ This will improve access for lenders by leveraging digital reach, and by using the platform lenders can create fully digital loan journeys for customers which will not only be cost-effective but also improve access by removing barriers of physical presence. So far, INR 42 billion of loans have been sanctioned and disbursed, which include INR 24 billion of MSME loans in the pilot.

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Appendix

Financial assistance sanctioned and disbursed by AIFIs

In billions of rupees

Table A1

	2021–22	2022–23	2021–22	2022–23
EXIM Bank	688.63	797.65	561.89	687.87
NABARD	3,803.96	3,843.19	3,783.87	3,648.32
NHB	305.07	361.37	259.90	303.72
SIDBI	1,485.50	2,881.37	1,464.02	2,807.87
NaBFID	N/A	185.61	N/A	100.45
Total	6,283.16	8,069.19	6,069.68	7,548.23

Source: Respective financial institutions.

Growth in real premium by region in the world in 2022

In per cent

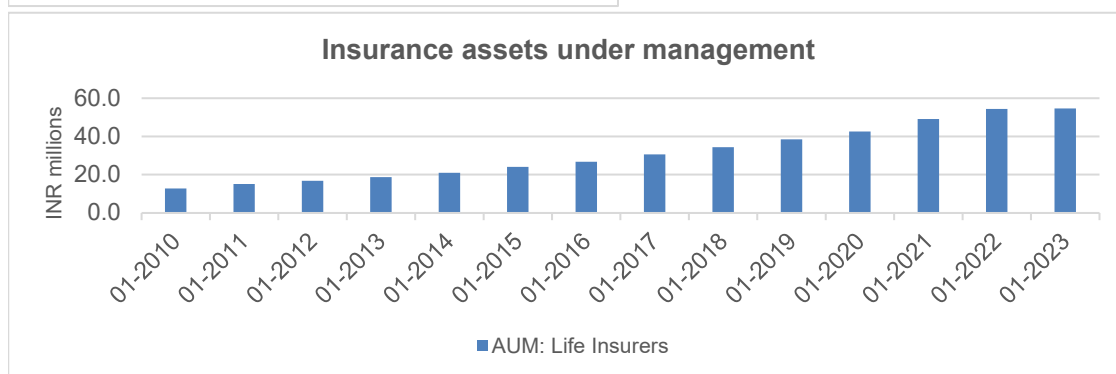
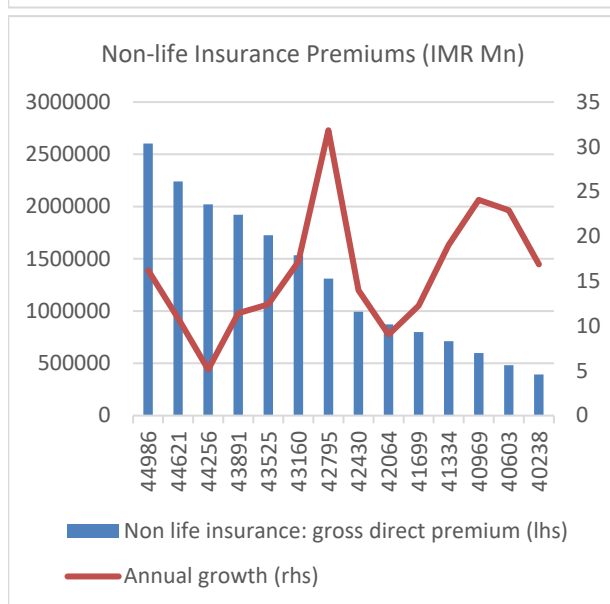
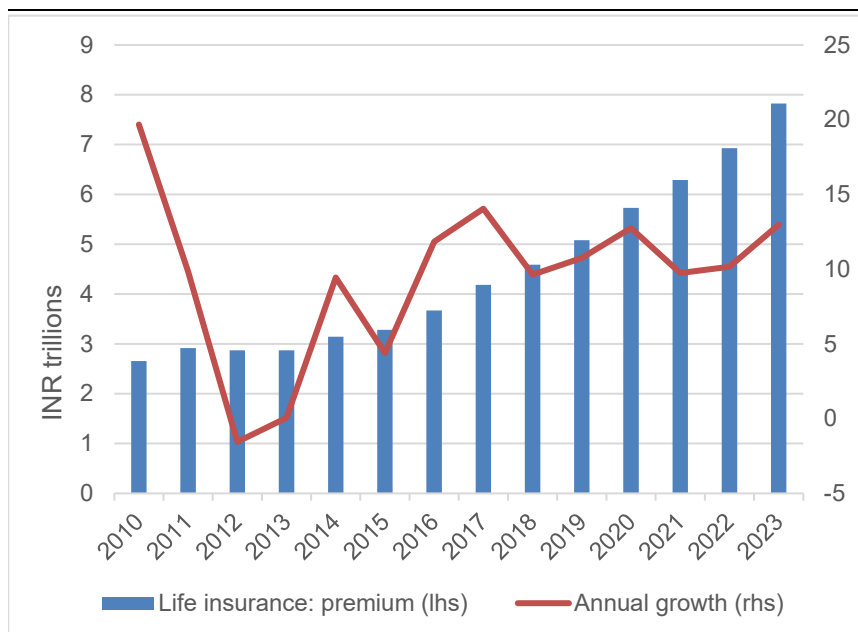
Table A2

Regions	Life	Non-life	Total
Advanced markets	–4.4	0	–1.8
Emerging markets	1.4	2.8	2.1
Asia-Pacific	–2.0	2.9	–0.1
India	8.2	6.0	7.7
World	–3.1	0.5	–1.1

Source: Swiss Re (2023).

Insurance premiums and AUM

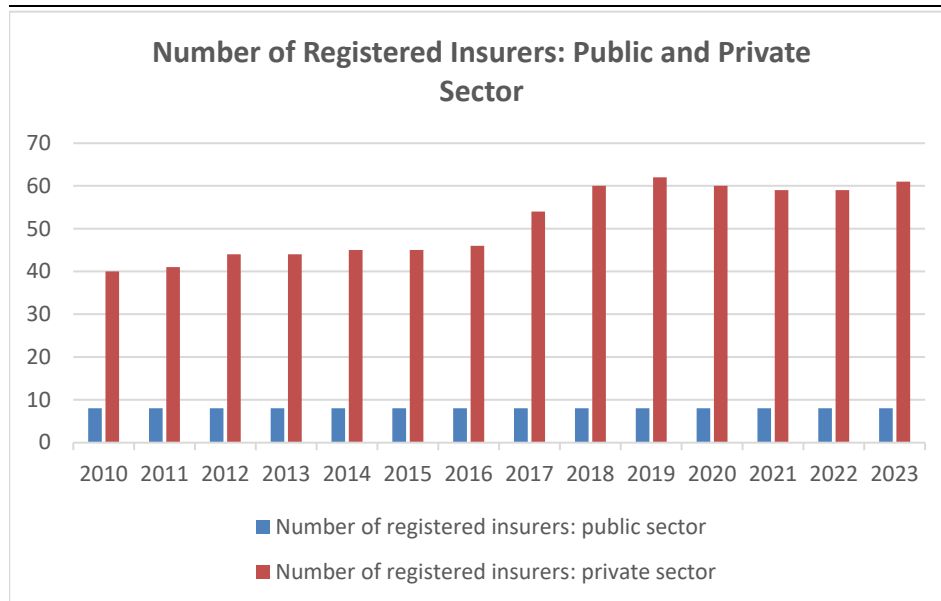
Graph A1



Source: CEIC database.

Numbers of registered insurers in India

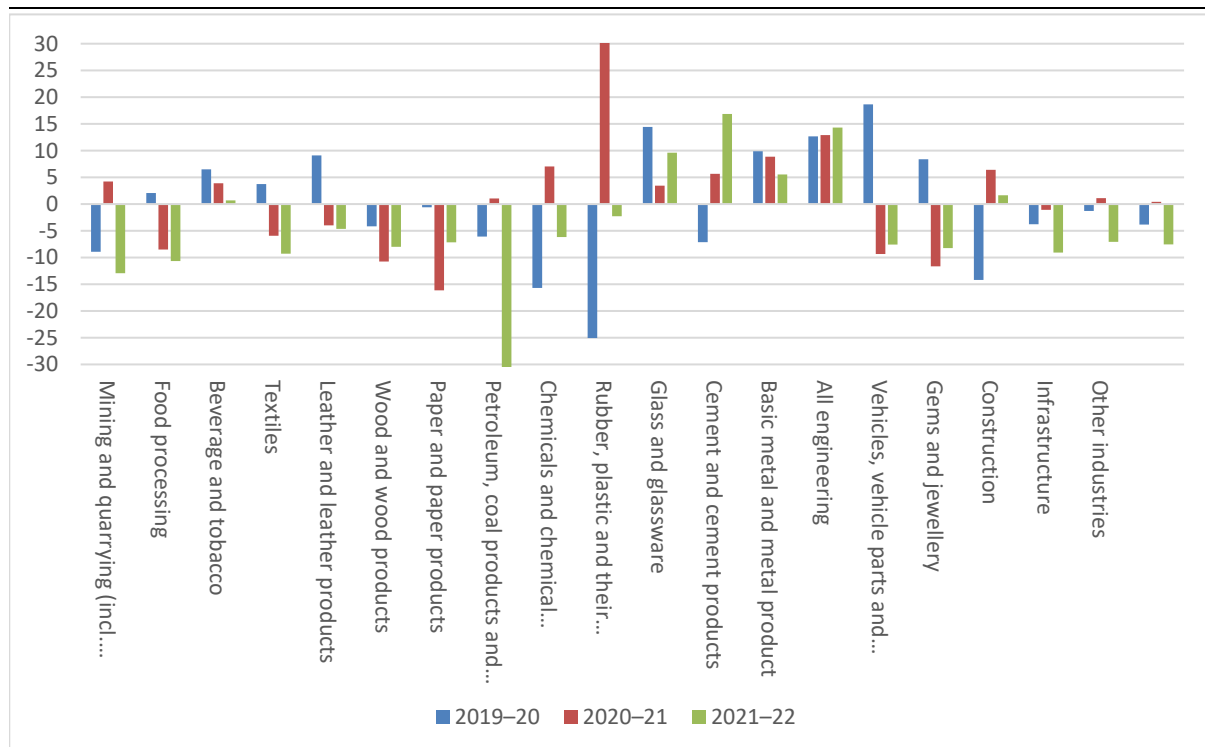
Graph A2



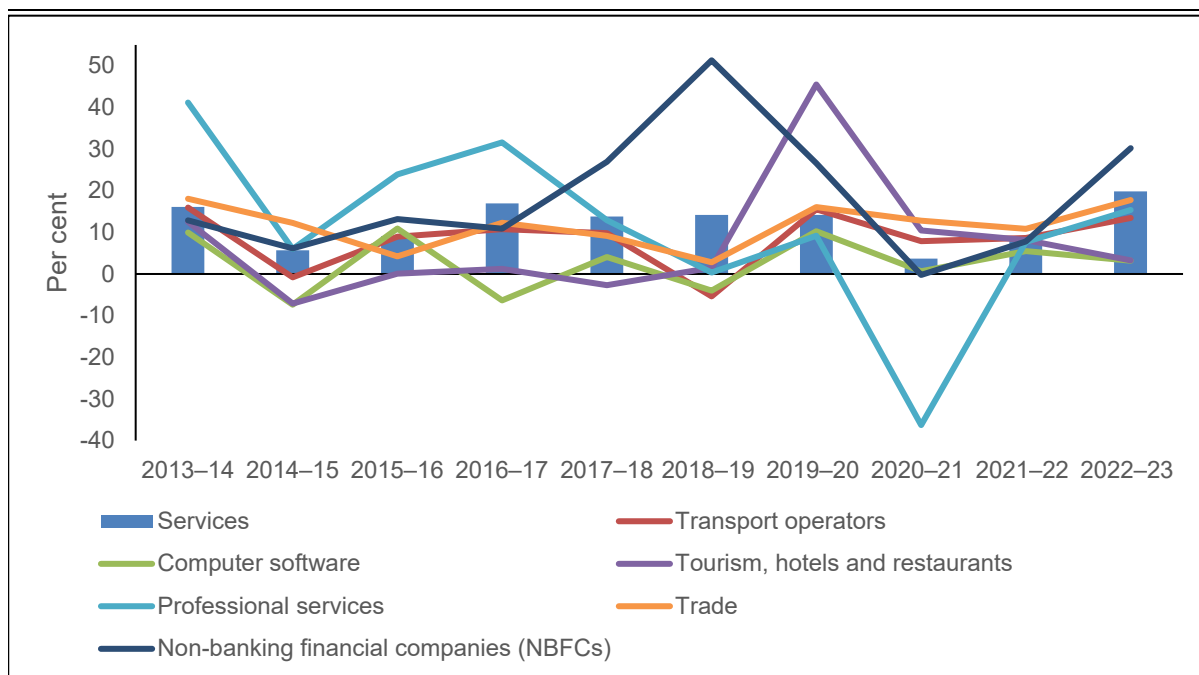
Source: CEIC database.

Credit growth within the industrial sector in India

Graph A3



Source: RBI, Handbook of Statistics on the Indian Economy, compiled from various years.



Source: RBI, Handbook of Statistics on the Indian Economy, compiled from various years.

The impact of global capital flows on financial intermediation and monetary transmission in Indonesia

Bank Indonesia

Introduction

The evolution of Indonesia's economic landscape has occurred in tandem with the globalisation of capital flows, engendering substantive consequences for financial intermediation and monetary policy transmission within the predominantly bank-based economy. This essay explores the multifaceted effects of global capital flows on Indonesia's financial sector and the measures adopted by Bank Indonesia to navigate the evolving economic landscape, including the impact of the Covid-19 pandemic.

Since the 2008 global financial crisis, Indonesia's economy has been marked by resilience and adaptability. Despite the tumultuous global economic climate, the nation has demonstrated remarkable strength. This strength was also shown recently, with predictions that the Indonesian economy will continue to grow and remain resilient amid global spillovers. In the fourth quarter of 2023, the economy grew 5.04% year on year (yoy). This growth is supported by:

- private consumption, including by the younger generation, which will rise in line with increasing consumption in the services sector; and
- consumer confidence, which remains high.

Investment continues to grow driven by the ongoing completion of National Strategic Projects. With these developments, economic growth is predicted to increase in the range of 4.7–5.5% in 2024. Continued economic improvement in 2024 will be mainly driven by domestic demand along with increases in salaries for state civil servants, general elections and development of the new National Capital City (IKN). To support economic growth, especially from the demand side, Bank Indonesia has implemented a pro-growth macroprudential policy and accelerated the digitalization of the payment system in close synergy with the government's fiscal policy.

Inflation has been maintained within the target range of $3 \pm 1\%$ in 2023. Consumer price index (CPI) inflation in December 2023 was 2.61% yoy. This decline in inflation was supported by core inflation, which fell to 1.80% yoy and inflation in the administered prices group, which was also lower at 1.72% yoy. Meanwhile, the volatile food group recorded inflation of 6.73% yoy. Controlling inflation has been the result of consistent monetary policy and close synergy between Bank Indonesia and the (central and regional) Government through strengthening the Central and Regional Inflation Control Teams (TPIP and TPID) as well as the National Movement for Food Inflation Control (GNPIP) in various regions. Bank

Indonesia will continue to monitor several risks that could put pressure on inflation, including the impact of rising global energy and food prices, as well as the depreciation of the Rupiah, which could put pressure on imported inflation. For this reason, Bank Indonesia continues to strengthen the monetary policy mix and synergy with the central and regional governments to ensure inflation remains under control, in the range of $2.5 \pm 1\%$ in 2024.

Global capital flows and their influence

One of the key driving forces behind Indonesia's economic performance has been the inflows of foreign capital, comprising both foreign direct investment and portfolio investments. These global capital flows have penetrated Indonesia's financial markets, including for government bonds and corporate equities. The impact on these markets has been profound, with far-reaching implications for exchange rates, bond yields and equity prices.

Foreign portfolio flows, often in the form of investments in government bonds and corporate equities, have been particularly influential. These investments have had a direct and immediate impact on the dynamics of Indonesia's financial markets. As foreign capital flows into government bonds, they exert pressure on bond yields, affecting interest rate movements in the domestic market. Similarly, investments in corporate equities influence equity prices, contributing to the overall market sentiment.

Moreover, the rapid increase in foreign capital flows, especially during periods of economic expansion characterized by robust consumption and high commodity prices, has fuelled bank lending. Global capital flows have injected liquidity into the Indonesian economy mainly through financial markets. This liquidity has notably influenced interest rate setting and bank lending, creating an environment where the banking sector plays a central role in financial intermediation. The shallowness of domestic financial markets, however, has occasionally amplified the volatility of financial asset prices, especially during times of market stress.

In 2023, higher for longer global interest rates prompted a rebalancing of capital flows from emerging market economies (EMEs), including Indonesia, to advanced economies. However, liquidity remained ample in the banking system and the economy. Base money (M0) growth contracted 1.5% yoy in December 2023, driven by the increase in the Macprudential Liquidity Incentives Policy (KLM) and due to the base effect of government financial expansion at the end of the year. Meanwhile, money in circulation in a narrow (M1) and broad (M2) sense grew by 2.1% yoy and 3.5% yoy, respectively. M2 development was mainly influenced by credit, which remained strong, and the recorded expansion of the government's financial operations. Bank Indonesia continues to ensure adequate liquidity, both through the effectiveness of existing policies and by strengthening accommodative macroprudential policies, to revive lending/financing and support economic growth.

Bank-based financial system

Indonesia's economic landscape is characterised notably by a bank-centric financial system. Banking institutions play a central role as financial intermediaries, while non-bank financial institutions (NBFIs) and capital markets provide secondary sources of funding. Despite the small amount of their assets relative to the overall financial system, NBFIs have experienced significant growth, particularly in fintech lending. Therefore, funds from capital inflows are channelled mostly through the banking system.

Loose liquidity supports banking intermediation and maintains financial system stability. In December 2023, the ratio of liquid assets to third-party funds remained high at 28.73%. This ample liquidity has contributed to favourable banking interest rates, with the one-month banking deposit interest rate and lending rate maintained at 4.69% and 9.25%, respectively, in December 2023. Adequate banking liquidity is also supported by the implementation of the Macroprudential Liquidity Incentives Policy (KLM), effective from 1 October 2023, offering a maximum incentive of 4% of the statutory reserve requirement. As of December 2023, KLM provided additional liquidity to 120 banks, amounting to IDR 55.13 trillion, marking an increase from IDR 108.15 trillion to IDR 163.28 trillion. Anticipated to rise further, this additional liquidity aligns with stronger credit growth in priority sectors as indicated in the primary policy objectives. Bank Indonesia continues to ensure adequate liquidity to maintain financial system stability and increase lending/financing to support sustainable economic growth.

The bank intermediation function continues to improve. Bank loans grew by 10.38% yoy in December 2023, supported by eased bank lending standards and early indications of rising demand for financing in line with sound corporate performance. By sector, credit growth was mainly supported by the business services, trade and social services sectors. Sharia financing also continues to increase, reaching 15.80% yoy in December 2023. In the micro, small and medium-sized enterprise segment, credit growth reached 8.03% yoy, supported by, among other things, People's Business Loans. Bank Indonesia will continue to encourage the distribution of bank lending/financing and strengthen synergy with the government to maintain the momentum of economic growth, especially in priority, inclusive and green economy sectors. Considering these developments, Bank Indonesia anticipates credit growth to accelerate in the 10-12% range in 2024.

Banking resilience has been maintained, supported by strong capital and low credit risk. The capital adequacy ratio was at a high of 27.66% in December 2023, with effectively managed credit risk reflected in the non-performing loan (NPL) ratio of 2.19% (gross) and 0.71 % (net). Banking liquidity has been maintained, supported by growth in third-party funds of 3.73% yoy in December 2023. Bank Indonesia's stress test results also show that banking remains resilient in the face of global pressure. Bank Indonesia will continue to strengthen synergy with the Financial System Stability Committee in mitigating various risks that have the potential to disrupt financial system stability and economic growth momentum.

The effects of global factors on banking

Indonesia's bank-based economy has been influenced by global factors and capital flows through financial markets, primarily in the form of foreign portfolio investments in government bonds and corporate equities. In 2023, higher for longer global interest rates accompanied by increases in long-term government bond yields prompted a rebalancing of capital flows from EMEs to advanced economies. Such conditions were linked to a build-up of global economic risk in line with ongoing global geopolitical tensions, the growing risk of economic recession, high inflation, aggressive policy rate hikes and the strong US dollar.

Increasing uncertainty in the financial markets triggered risk-averse behaviour among global investors, which led to capital outflows of portfolio investments from developing economies. Consequently, investors began to rebalance portfolios from securities to readily convertible cash equivalents. This required an optimal policy response to mitigate the adverse impact of global spillovers on domestic macro-financial resilience in EMEs, including Indonesia. However, the resilience of the domestic financial system was maintained in line with solid capital, ample liquidity and effectively managed credit risk. Financial system resilience and manageable interest rates supported the intermediation function. Credit growth accelerated as risk perception in the banking industry improved along with corporate and household sector performance through improving repayment capacity and fewer loans at risk.

Bank Indonesia, therefore, continues to strengthen a consistent and innovative policy mix of monetary, macroprudential and payment system policies to maintain stability and revive sustainable growth. The accommodative macroprudential policy stance has been strengthened by the effective implementation of the Macroprudential Liquidity Incentives Policy and by lowering the Macroprudential Liquidity Buffer to support lending/financing for national economic growth. Additionally, Bank Indonesia continues to innovate to increase the effectiveness of monetary policy in controlling inflation and ensuring the Rupiah exchange rate remains stable. In this regard, interest rate policy was strengthened by the issuance of the Bank Indonesia Rupiah Securities (SRBI), to strengthen efforts to deepen the money market and support efforts to attract portfolio inflows, by optimizing the underlying government securities owned by Bank Indonesia. The market welcomed the issuance of SRBI, which was reflected in the high offer compared with the target (oversubscribed). As of 19 December 2023, an SRBI auction had been held 27 times, with an outstanding amount reaching IDR 229.95 trillion. This development was also followed by active transactions in the secondary market. The issuance of SRBI also supported the inflows of foreign portfolio investments, as reflected in the net purchase of SRBI by non-resident investors of IDR 9.81 trillion. These developments generally show that SRBI can replace the reverse repo SBN as a pro-market contractionary monetary instrument and at the same time attract capital inflows to strengthen the Indonesian economy against the impact of global spillovers.

Impact on monetary transmission

The impact of global factors on monetary transmission in Indonesia has manifested mainly through exchange rate and asset price volatility. This volatility has a direct bearing on various macroeconomic aspects, including inflation, the current account deficit, economic growth and financial stability. Additionally, the effects of global factors on domestic liquidity are primarily felt within the banking sector, where they have provided a degree of additional financing for the domestic economy. The relative shallowness of domestic financial markets has often exacerbated the impact of these global factors on exchange rate and asset price volatility. This underscores the need for measures that strengthen the effectiveness of monetary transmission in Indonesia.

To navigate the challenges posed by global capital flows, Bank Indonesia has adopted a strategic policy mix. This mix combines the use of interest rate policy, flexible exchange rates and macroprudential measures. The policy mix was also supported by financial market deepening. These policy approaches are targeted at mitigating excessive lending in specific sectors and addressing external vulnerabilities to enhance monetary and financial stability.

1. **Interest rate policy:** One of the key tools at the disposal of the central bank is the interest rate policy. Bank Indonesia has utilized this tool to adjust the policy rate, aiming to meet inflation targets while addressing the complexities of the global economic environment.
2. **Exchange rate flexibility:** The adoption of a more flexible exchange rate regime is designed to help the country adapt to current account deficits. This flexibility allows for adjustments in response to changing economic conditions and external pressures.
3. **Macroprudential measures:** The central bank has also implemented macroprudential measures, designed to curtail excessive lending in specific sectors of the economy. These measures aim to enhance the overall stability of the financial system.
4. **Deepening Indonesia's financial markets:** Recognizing the need for a more diversified and resilient financial system, Bank Indonesia has intensified efforts to deepen the country's financial markets. This endeavour includes the introduction of interbank repo and swap markets, which strengthen the market mechanisms for setting interest rates and exchange rates. Additionally, these initiatives enhance the term structure and liquidity management of both banks and NBFIs.

Conclusion

The impact of global capital flows on financial intermediation and monetary transmission in Indonesia is a multifaceted phenomenon. Indonesia's journey as a bank-based economy demonstrates the complexities of navigating the global financial landscape. Global capital flows, while contributing significantly to economic growth and resilience, also bring volatility and challenges that require astute policy responses.

Bank Indonesia's policy mix, which encompasses interest rate policy, flexible exchange rates and macroprudential measures supported by financial market deepening, represents a thoughtful and strategic approach to managing these challenges. Efforts to deepen Indonesia's financial markets are a step towards achieving a more diversified and resilient financial system.

Indonesia's experience serves as a valuable case study for emerging economies, highlighting the importance of adaptability and a multifaceted approach to maintaining monetary and financial stability in an ever-evolving global economic environment. As Indonesia continues to evolve, it stands as a testament to the interplay between global capital flows, economic resilience and sound policy responses in shaping the future of a nation's financial landscape

The changing nature of the financial system in Israel in the last two decades

Merav Shemesh¹ and Andrew Abir²
Bank of Israel

Introduction

The 2018 Basel Committee on Banking Supervision paper titled *Sound practices – implications of fintech developments for banks and bank supervisors* outlined five possible scenarios for the future of the financial system. These scenarios include: the “better bank” scenario, where banks continue to dominate while enhancing digitalisation; the “new bank” scenario, where a technology-based financial entity replaces incumbents; the “distributed bank” scenario, where financial services are distributed among banks and technology-driven players; the “relegated bank” scenario, where new digital intermediaries are at the forefront of managing the ongoing relationship and interface with the customer; and the “disintermediated bank” scenario, where banking activity is conducted peer to peer with no significant intermediation by banks.

Since the publication of this paper in 2018, the Israeli financial system has undergone significant changes: credit to corporates and households has grown significantly, technology has started playing a major role in transforming the financial industry, and new financial players, including fintechs and big techs, have entered the Israeli market. Nevertheless, banks still have a very dominant role in the financial system in Israel and probably we are still closest to the “better bank” scenario, although there are signs that the “distributed bank” and, to some extent, the “relegated bank” and “new bank” scenarios may be gaining traction.

The banking system in Israel is dominated by domestic players and very concentrated, and it continues to play a significant role in the financial sector and credit market. One major change has been the entry of institutional investors into the corporate credit market, initially through the capital markets in the years prior to the Great Financial Crisis (GFC), and the decline in banks’ share of credit to corporates, from 70% in 2004 to 50% today. This development has focused mainly on large corporates, whereas small and medium-sized companies still rely mostly on banks for credit. In the area of household credit, the share of banks has declined from 80% to 70% in the last five years. This decline has been focused mainly on consumer credit, while mortgages are still granted almost exclusively by banks.

In recent years, technology has started to play a major role in transforming the Israeli financial industry, making it more efficient and vibrant. The use of big data, artificial intelligence (AI) and machine learning (ML), the move to the cloud and other

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² Deputy Governor, Bank of Israel.

technology developments have affected financial firms and their customers, corporates and individuals, including in terms of access to credit, credit pricing, speed of transactions and more. Information has become a fundamental factor in the new financial era and, together with innovation in financial services, the unbundling of banking services and other developments, has started to slowly open the door to new players, including fintechs and big techs.

The entry of new players is increasing competition, particularly in credit to households (excluding mortgages) and small and medium-sized enterprises (SMEs). This has initiated a shift and contributed towards a more inclusive and customer-oriented financial system. The boundaries between banks and non-banks are becoming blurred, creating opportunities as well as risks and challenges.

Policymakers have encouraged these changes in the Israeli financial system through regulatory intervention, particularly where it was necessary to promote growth and support end users. Policymakers have enabled innovation, removed regulatory barriers to entry and supported efficiency in areas of weakness, such as credit to SMEs, credit pricing, mortgage pricing, inclusiveness and more. Measures have been implemented to strengthen the resilience of the financial system, promote better standards of conduct of business and fairness, and contribute to credit growth, including: monetary loan guarantees, increased transparency in mortgage pricing, a credit registry, a Computer Services Bureau,³ the ability for customers to switch banks with a “click”, open banking and advanced means of payment.

This paper focuses on the Israeli financial system and its recent developments. Section 1 discusses long-term credit trends, while Sections 2 and 3 address the entry of new technologies in finance and of new financial players and credit providers, respectively. Section 4 provides examples of regulatory interventions that have had a direct impact on the resilience, credit growth, fairness and competition of the financial system. Policymakers have encouraged these developments and intervened where necessary to promote growth and support end users.

1 Long-term credit trends in Israel

The banking system in Israel is dominated by domestic banks and highly concentrated, and it plays a significant role in the financial sector and credit markets. Banks in Israel are responsible for approximately 50% of corporate credit and 70% of household credit. The dominance and concentration features of the system support financial stability and resilience, while leading to criticism concerning the level of competition; they also influence credit trends, growth and consumer welfare.

Economic literature links the level of private sector debt⁴ and its growth rate with long-term economic growth. However, since the 2008 crisis, the literature suggests

³ The Computer Services Bureau is an infrastructure supported by the state, intended to serve a number of banks and non-bank entities. This enables small and new banks to benefit from its advantage of scale.

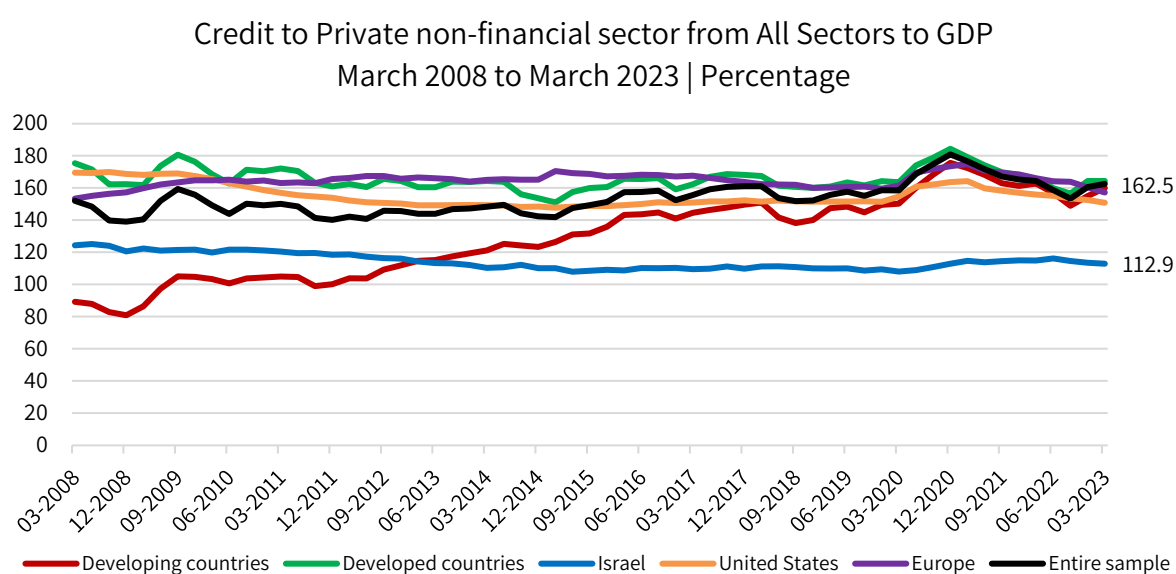
⁴ Business and household debt.

that the positive impact of debt is decreasing and may even be negative, while high debt levels are now perceived as a risk factor that could undermine financial stability.⁵

In Israel, the private debt-to-GDP ratio is low by international comparison (see Figure 1). Looking at the components of debt, both the business debt-to-GDP ratio and the household debt-to-GDP ratio are comparatively low in Israel, a position that supports financial stability and grants policymakers some degree of freedom in their measures to promote growth (see Figures 2 and 3).

In Israel credit to the private sector in relation to GDP is low in international comparison

Figure 1



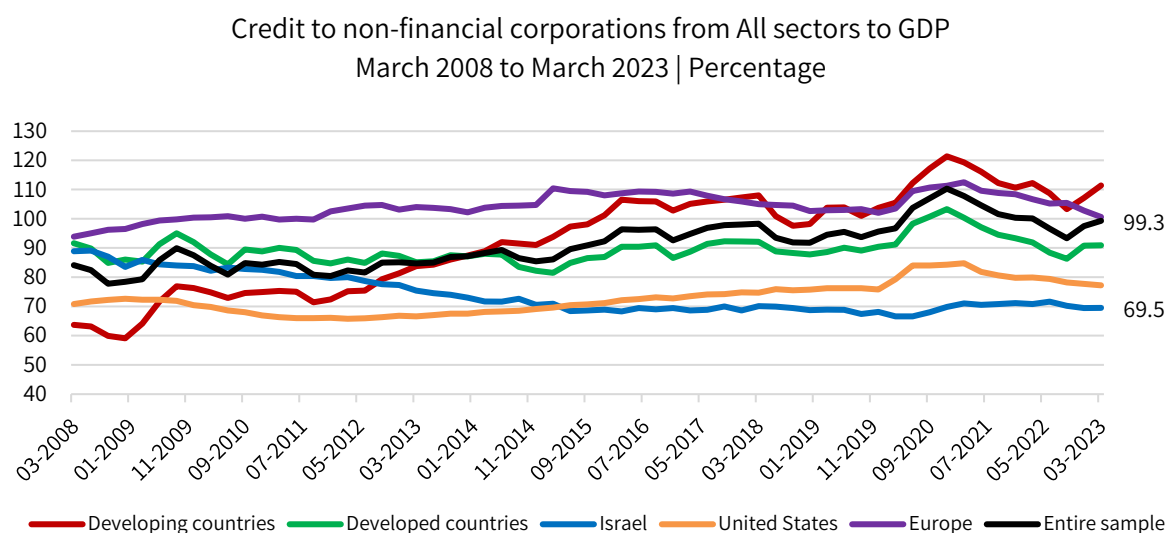
Credit to Private non-financial sector from All sectors at Market value.

Source: Bank for International Settlements (BIS).

⁵ Reinhart et al (2012); Kalemli-Ozcan et al (2015); World Bank (2017); Kose et al (2017); Giroud and Mueller (2017); Checherita-Westphal et al (2019).

Credit to the business sector – the debt ratio of the non-financial business sector to GDP in Israel is low in international comparison

Figure 2

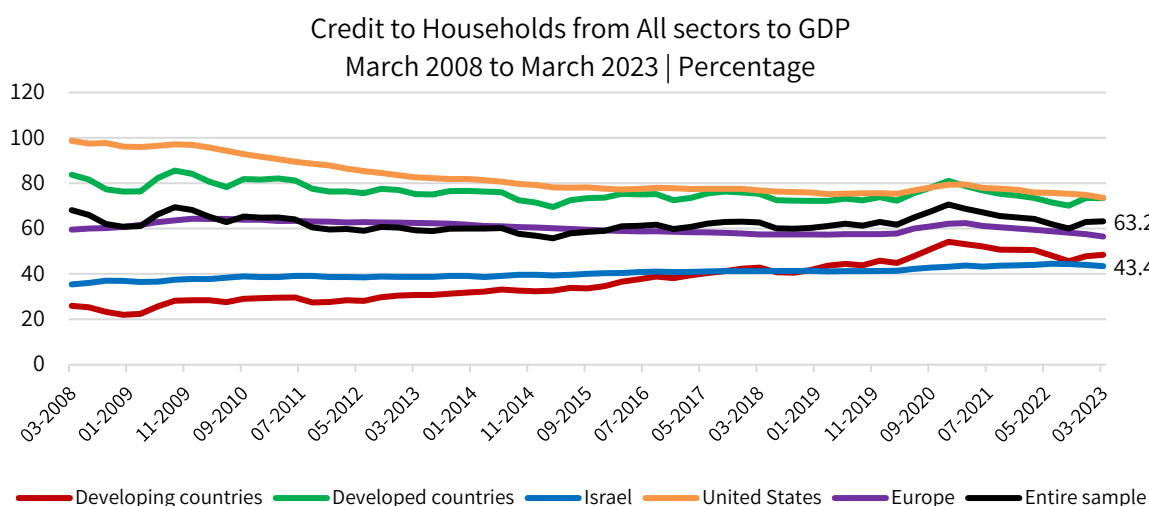


Credit to Non-financial corporations from All sectors at Market value.

Source: Bank for International Settlements (BIS).

Credit to households in relation to GDP – the ratio of household debt to GDP in Israel is on the rise but remains low relative to the rest of the world

Figure 3



Credit to Households and Non-profit institutions serving households (NPISHs) from All sectors at Market value

Source: Bank for International Settlements (BIS).

When analysing developments over time, the gap between the business debt-to-GDP ratio in Israel and that of developed countries has increased slightly in the last decade. This is explained, among other things, by: the impact of the Covid-19 pandemic, which Israel managed without significant growth in debt; the structure of the business sector in Israel; the rise of the service sector at the expense of the goods sector and the increasing weight of high-tech companies that fund their activities through equity; and perhaps a cultural reluctance to take on high levels of debt.

The household debt-to-GDP ratio in Israel is low by international comparison, particularly due to the low level of mortgage debt. Housing prices in Israel have risen significantly since 2007, and with them, the credit for housing. However, structural limitations such as low participation rates in the mortgage market and relatively low funding rates in this market, partly due to Bank of Israel (BOI) intervention with macroprudential tools, have limited the increase in debt in Israel and there are limitations on loan-to-value (LTV) ratios for mortgages. Banks are not allowed to grant mortgages with an LTV ratio exceeding 75%. Additionally, there are limitations for payment-to-income (PTI) ratios to not exceed 50% and TTM to not exceed 30 years. There are also capital requirements and general provision demands for mortgages with high-risk characteristics.

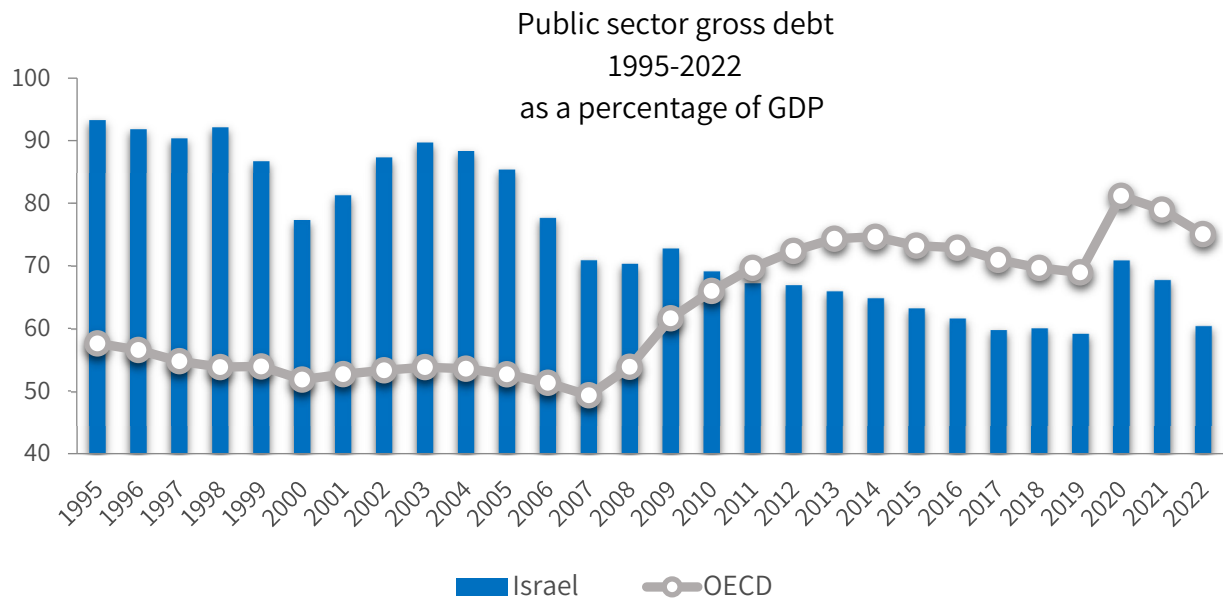
The level of private sector debt is also dependent on the level of financial development in each country, which is reflected in the variety and extent of credit supply and credit providers. The absence of a securitisation market in Israel that would allow banks to reduce their leverage and risk assets, as well as the concentration of the financial system and the dominance of the banking system, have also influenced the level of debt. Studies that examined the financing structure of businesses emphasise the importance of opening up the non-bank financing market to the business sector. These studies found a positive correlation between non-bank financing and economic growth.⁶

Two developments led to the growth in the corporate debt market. First was the reduction in government deficits, and consequently government debt (see Figure 4), which had crowded out corporate issuance. Second, starting in 2005, as part of the Bachar Reform, the management of public assets in trusts and mutual funds was transferred to non-bank financial institutions to increase competition in the financial system. During this period, there was also a significant increase in the leverage of companies in the economy. Institutional investors entered the corporate credit market through the capital markets in the years prior to the GFC, and banks' share of credit to corporates declined from 70% to 50%, where it stands today. This development has focused mainly on large corporates, whereas small and medium-sized companies still rely almost solely on banks (see Figure 5).

⁶ Allen et al (2012); Langfield and Pagano (2016).

Reduction in Israeli public sector debt

Figure 4

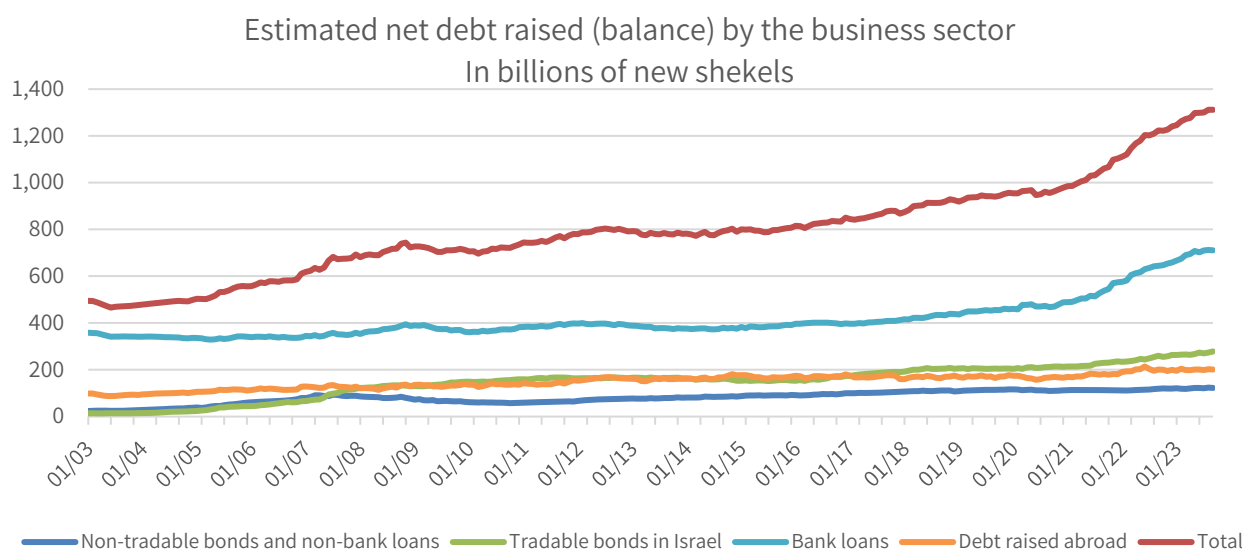


OECD average is a simple average (excluding: Latvia).

Source: Bank of Israel.

Banks' share of credit to corporates declined in the years prior to the GFC

Figure 5



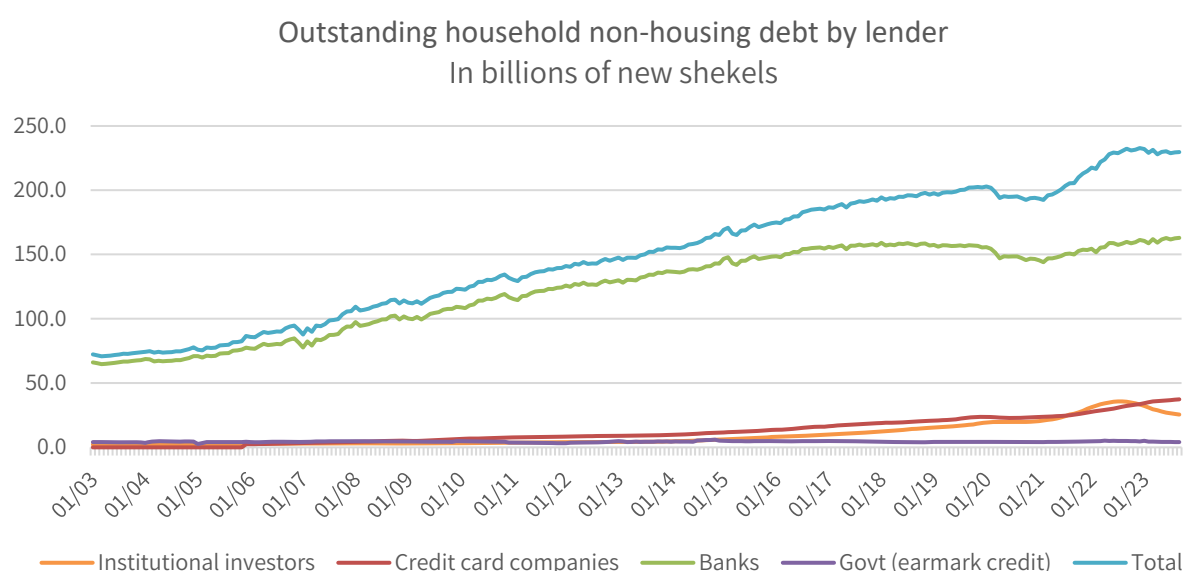
Source: Bank of Israel

In Israel, most of the credit granted to households is mortgage credit, which is almost entirely provided by the banking system.

Since 2017, as part of the remit of the Committee to Increase Competition in Common Banking and Financial Services, steps were taken to structurally separate credit card companies from banks to increase competition in the consumer credit market, as well as other structural measures. All of the aforementioned focused mainly on consumer credit, and as a result, the share of non-bank credit in the consumer credit market has increased from 20% to 30%, while mortgages are still granted almost exclusively by banks (see Figure 6).

Since 2017 the share of non-bank credit in the consumer credit market has increased

Figure 6



Source: Bank of Israel.

Analysing the structural, regulatory and economic developments in Israel over the past two decades, we note that they reflect the developments in credit demand and supply. In this short paper we will focus on two long-term developments which form the foundation of the current financial and credit position towards a more effective credit market: technology developments in finance and the entry of new players to the credit market. Both developments, which are interdependent, have influenced the credit market in Israel and encouraged credit growth in particular where weaknesses were found. Both trends and structural changes were accompanied by proactive involvement from policymakers. These interventions were made possible while maintaining financial resilience, against a background of declines in Israel's debt-to-GDP ratio.

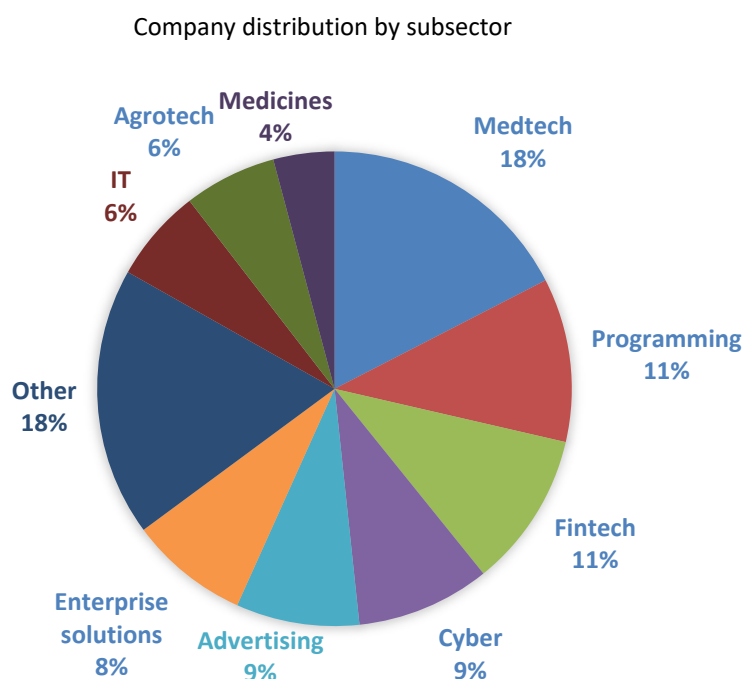
2 New technologies enter the Israeli financial system

Israel is renowned for being a high-tech nation, and the statistics speak for themselves. In the last five years, 40% of Israel's business GDP growth has been attributed to the high-tech sector. High-tech companies contribute to 17% of Israel's GDP and to 56% of its exports. Moreover, 12% of Israeli employees work in high-tech, and high-tech employees pay approximately 25% of all income tax. The high-tech sector is relatively decentralised, and 11% of high-tech companies are fintech companies (see Figure 7).

The fintech industry in Israel covers a vast variety and scale of topics. This sector is composed of almost 500 fintech companies, which operate across a range of financial fields, including trading, payments, enterprise solutions, anti-fraud, insurtech, lending and personal management. Fintech is one of the three fields that has attracted the majority of investment in recent years, highlighting the significant growth and innovation in this area

Israel's high-tech sector is relatively decentralised, with 11% of high-tech companies being fintech companies

Figure 7



Source: Bank of Israel.

Given Israel's technological environment and vibrant fintech industry, one might expect Israeli banks to be among the most technologically advanced in the world. After all, banks around the world have always to an extent been technological firms, enabling electronic transactions, cross-border activities, payments and complicated computing. However, until several years ago in Israel, this was not the case. Banks were labour-intensive and not especially innovative and most transactions were executed manually through branches in a traditional manner.

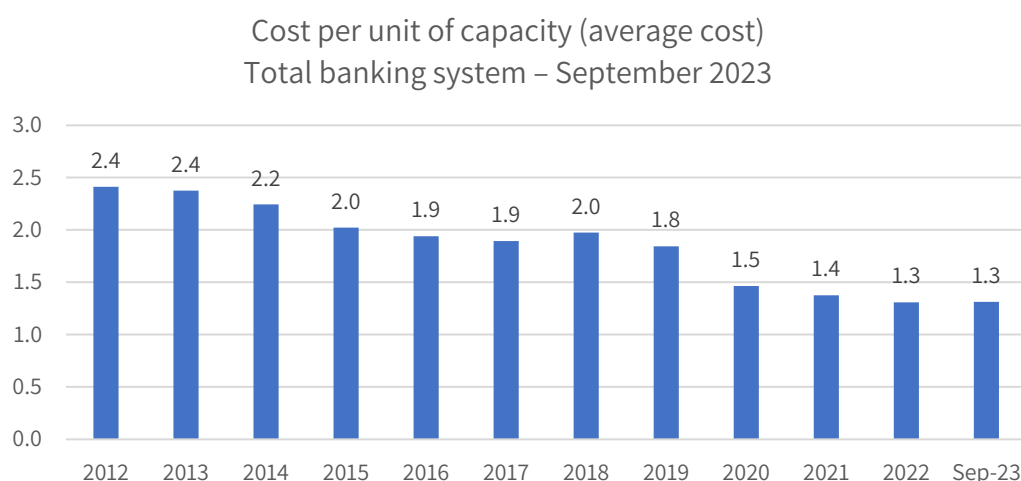
How can we explain this lack of innovation in Israeli banks in the past, and what has changed in the last few years in the banking and financial systems in Israel, with innovation starting to play a key role?

Initially, the concentration of the banking system and its dominance in the financial arena were not conducive to efficiency or promoting innovation. The efficiency ratios⁷ of Israeli banks were between 60 and 70%, indicating that Israeli banks were less efficient than their peer banks in OECD countries. **Furthermore**, strong labour unions in banks and insurance companies in Israel and a low level of financial literacy were additional factors that influenced financial institutions' considerations in implementing technological innovation. **Moreover**, the financial system in Israel is quite conservative, particularly its banks. Banks, regulators, banking regulation and supervision have historically been conservative, a result of the fallout from the banking crisis in the early 1980s. While this conservatism enabled the financial system to weather the GFC and other financial shocks with relatively good results, it also impeded it from embracing technology.

During the last few years, the financial system in Israel has undergone significant changes, with digital finance taking the lead. While industries typically embrace technological innovation and do so before regulatory authorities, in Israel a regulatory initiative and change in attitude were needed to spur the financial industry forward. As early as 2016, the supervisor of banks at the BOI added two supportive objectives to those of stability and fairness: (1) promoting technology and innovation in the banking sector; and (2) improving the efficiency of the banking sector. These interrelated objectives contributed to the changing technology environment in Israel, and induced a significant change (see Figure 8).

Israeli banks underwent a significant efficiency process in the last decade

Figure 8



The ratio between total operating and other expenses and average balance of assets (average cost).

Source: Bank of Israel.

⁷ The ratio between total operating and other expenses and total net interest and non-interest income (cost to income ratio).

At the time, there was a regulatory perception that the financial environment was changing rapidly and materially, and that this trend would continue, with new financial players entering the market. This required banks to accelerate the pace of examining new technologies, enabling them to compete in the new digital financial era.

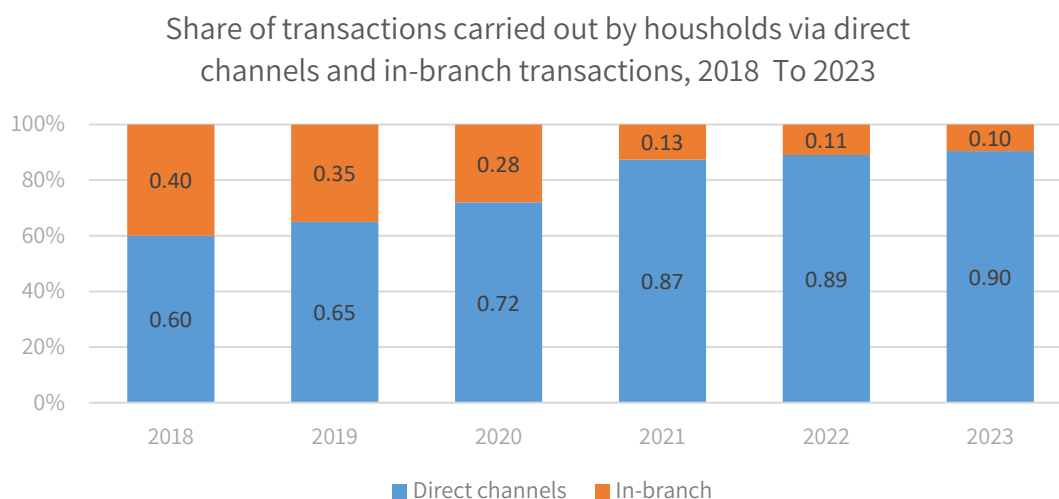
With this in mind, the BOI took several operative actions, along with a loud and clear declaration that it was aware that innovation experiments would at times entail the materialisation of risks, and it understood that this was an unavoidable part of the process of change. Therefore, creating an experimental environment, by examining the risks for trying the new initiatives, “will be an easing consideration in the Banking Supervision Department’s examination and compliance processes (examinations, sanctions, etc) should the risks materialize”.⁸

Banks were required to formulate a clear and holistic strategic approach with regard to adopting innovation in their banking activity. This referred, among other things, to improving the customer’s journey (households and businesses) and experience, enhancing automation of the operational process (back office, call centres, etc) and ameliorating the effectiveness of internal controls and risk management systems as well as the competitiveness of banking corporations.

In the last few years, banks and non-bank financial institutions in Israel have implemented new technologies such as big data based on AI and advanced ML, open banking and application programming interface (API), cloud computing, digital image processing, biometrics and voice recognition, Internet of Things (IoT), distributed ledger technology (DLT) based on blockchain, 5G internet and more.

The BOI plays a pivotal role in advancing financial service technology on two fronts: first, it has been instrumental in removing some of the regulatory barriers that had hindered banks and credit card companies from adopting new technologies. It achieved this with initiatives such as promoting open banking, removing cloud restrictions, supporting advanced means of payment, collaborating with fintech companies, using technology-based methods of identification to replace physical interactions between bank representatives and customers, and simplifying the process of opening digital accounts. Second, it actively encourages customers to switch to digital channels by reducing regulated fees, supporting financial literacy and making it easier for customers to switch from one bank to another with a digital “click”. By taking these steps, the BOI is helping to galvanise innovation in the financial services industry, making it more accessible and convenient for customers while also promoting competition among banks. Banks were requested to implement innovation in a responsible and prudent way by identifying opportunities as well as risks and taking the appropriate measures needed. The increase in digital banking can be seen in Figure 9.

⁸ Bank of Israel Supervisor of Banks letter to the banking corporations and credit card companies re: Encouraging innovation at banks and acquirers, 23 June 2019.



Source: Bank of Israel.

The Covid-19 pandemic in 2020, which necessitated remote working, facilitated significant progress in technological implementations by both financial institutions and their customers. Banks have had to adapt their business models, resulting in improved digital customer service and a wider variety of services being offered digitally. Customers have also shifted towards direct channels instead of relying on physical branches. As a result, the pandemic accelerated the adoption of digital technologies in the financial services industry, leading to greater efficiency, convenience and accessibility for both banks and their customers.

3 New financial players enter the Israeli financial system

The integration of technology and innovation into finance, along with effective policymaking measures, has created opportunities for new players to enter the Israeli financial market. While technology alone was insufficient to attract new players, and policymakers' measures and regulations were also not enough, the combination of the two has proven successful. This synergy has enabled the financial market in Israel to expand and diversify, providing new opportunities for investors and businesses alike.

Over the years, policymakers in Israel have pursued a more competitive financial market through various initiatives. The Bachar Reform in 2005,⁹ for example, resulted in the separation of provident and mutual funds from banks, while the Zaken Committee in 2013 encouraged the entry of new players such as foreign banks and credit unions. While these actions have had an impact on the Israeli financial market

⁹ The Bachar Reform refers to the Law for the promotion of competition and reduction of concentration and conflicts of interest in the Israeli capital market (legislative amendments), 5765-2005.

and fostered competition in some areas, they have not fully addressed weaknesses in other areas, particularly for households and SMEs.¹⁰ As a result, the pursuit of a more competitive financial market remains a key priority for policymakers. Israel's relatively low debt-to-GDP ratio has given some degree of freedom for regulatory intervention to foster credit supply in areas where it was needed.

In Israel and around the world, the combination of regulation and new technologies has facilitated the entry of new entities, such as digital banks, credit service providers and payment service providers. Listed below are examples of regulatory initiatives to promote competition and innovation in Israel's financial sector which directly affect the entry of new financial players and somewhat increase credit access:

- In accordance with the 2016 credit data law, the BOI established a Central Credit Register (CCR) for individuals and households. The CCR expands the information available to credit providers wishing to evaluate a customer's credit risk level. This is particularly important to new entrants who lack the banks' access to data on potential clients.
- In collaboration with the BOI, since 2017 the Ministry of Finance has promoted the establishment of a centralised Computer Services Bureau; this is in order to lower the high price of computer infrastructure, which acts as a significant barrier to establishing a new bank, and to enable new banks to enter the market and increase competition.
- Starting in 2017, two credit card companies were separated from the two big banks. These credit card companies now operate as separate non-bank credit providers and merchant acquirers, and compete with banks to provide credit to SMEs and retail customers.¹¹ A third credit card company is also going to be separated from its parent bank.
- In 2019, a licence was granted to a new digital bank, the first licence in 40 years; another digital bank is on its way, and possibly others may follow. This resulted from a change in the BOI's bank licensing process and the establishment of the centralised Computer Services Bureau.
- Between 2017 and 2022, the BOI granted three licences to new merchant enquirers by easing the licence process and removing entry barriers.
- Towards the end of the second quarter of 2023, an initiative to set up a new business credit data register was announced to improve access to credit for corporate entities and in particular for SMEs; this should increase competition between the financial players in this area.

With these measures the BOI is aiming to facilitate the entry of new financial entities into Israel's financial system. This will enhance the value for customers, not

¹⁰ The operations of foreign banks and credit unions in Israel are minor.

¹¹ See the Law for increasing competition and reducing concentration in the banking market (legislative amendments), 5777-2017.

only through the innovation that these entities bring, but also via their impact on the traditional system and the competition they can generate.

Furthermore, there are entities that begin operating in the financial system without supporting legislation, mainly due to the technological ability they bring. Various fintechs have succeeded in introducing innovation in a variety of fields of activity, starting with the world of payment services, followed by those of models for credit ratings, insurance and investment consulting, and ending with those of knowing the customer and complying with regulatory instructions. Most of them work in collaboration with the local banks (the “distributed bank” and “relegated bank” scenarios). Big techs are also in the financial world to stay; they are already significant players in the world of payment services, and their entry into additional financial worlds, although proceeding slowly, has the potential to advance quickly.

A few years ago, there were doubts about banks’ ability to adapt to the new financial technological world (the “new bank” scenario). Today it is clear that, together with the entry of new financial players, fintech and big tech, banks have risen to the challenge and implemented innovation. One worry continues to be the potential use by the banks of their dominant market position to place barriers in front of aspiring new entrants into the financial ecosystem.

4 Regulatory intervention and Bank of Israel measures

The BOI plays a central role in identifying market weaknesses and taking measures to mitigate risks in the financial sector and enable effective credit activity. This section will focus on measures taken by the BOI in three specific areas: supporting credit provision to SMEs during crisis times; implementing “open banking” in Israel to support a more efficient credit market; and increasing transparency and comparability in the mortgage market to make it more effective.

1. **Emergency monetary loans to SMEs** – Small businesses in Israel are a major growth engine for the economy, and their contribution to business output is significant. Their growth and contribution to the economy are made possible by the financing provided to them, primarily by the banking system. However, studies¹² have identified many hurdles to SME lending, including information gaps, relatively higher risk and lack of collateral. These create a potential for market failure, particularly during difficult times. To enable the financial system to continuously supply the economy’s credit needs during Covid-19 (2020) and the “Swords of Iron” war (2023), the monetary committee at the BOI launched programmes intended to ease credit terms for small and micro businesses. Within the scope of these programmes, the BOI provides low-interest credit to the banking system against loans granted to small and micro businesses totalling up to ILS 10 billion (for each programme). This helped the SME sector to weather the difficult environment during the Covid-19 pandemic, and initial data from

¹² See, for example, Committee for Examining Competition in the Credit Market (2018).

2023 suggest that the intended purpose of providing cheaper credit to micro and small businesses is starting to be achieved.

2. **Implementing open banking** – At the centre of implementing open banking activity in Israel lies the asset of information possessed by the customer. The Financial Information Service Law, 5772-2021, which was published in November 2021 and went into effect in June 2022, presented a timetable under which baskets of information in open banking were gradually introduced until the end of 2023. In Israel, information sources (such as banks) are required to share information not only on transactions in customers' accounts but also on credit, deposits and securities held by customers. We expect to see open banking expanding and promoting advanced business models and increasing opportunities for competition as time progresses. Additionally, it is reasonable to assume that open banking will expand into open finance and perhaps even open data, which will have a systemic impact and will, of course, affect various market players, including credit providers.
3. **Mortgage transparency reform** – BOI measures to enhance transparency and comparability in the mortgage market came into effect in August 2022. The mortgage market is remarkably complex for the average consumer, with banks offering a combination of fixed nominal, floating nominal and index-linked mortgages. The new measures are intended to help customers request a mortgage proposal faster and more conveniently, better understand the mortgage terms being offered and their impact on future payments, and compare the various proposals offered by several banks in a more informed and easy manner. For example, customers can submit a digital request via the bank's website, and the bank must offer three mortgage options as per the BOI format so the customer can compare different offers more easily. As a result, not only does the customer have more negotiating power, but the competition among mortgage providers is enhanced.

Conclusions

The financial system in Israel has proven to be resilient and weathered financial crises well. Yet, the system is relatively concentrated and has weaknesses in certain areas, such as SMEs and household credit. In comparison to other countries, Israel's debt-to-GDP ratios are low for both businesses and households. This has allowed policymakers to take proactive measures to increase competition while maintaining financial stability. The introduction of new technologies and financial players has encouraged the system to become more effective and inclusive. However, technology alone is not enough. The willingness of policymakers to act has played a crucial role in digitalising the financial system, promoting its development, innovation and resilience. The responsible adoption of new technologies such as AI, quantum computing, DLT and biometrics is having a tremendous and evolving effect on the financial system, for both individuals and corporations. This must be done while endorsing risk management and controls, promoting financial literacy and addressing identified weaknesses.

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Sectoral credit shifts and potential issues in economic growth

Bank of Korea

Abstract

This article shows that government-owned banks play a pivotal role in providing credit to the corporate sector. Three government-owned banks, the Korea Development Bank, the Industrial Bank of Korea and the Export-Import Bank of Korea, account for approximately one third of corporate lending in the banking sector.

The Covid-19 pandemic appears to have had a limited impact on sectoral credit allocation in Korea. Instead, significant shifts in the credit distribution between the household and corporate sectors, as well as within non-financial sectors, predate the pandemic. Following the Asian financial crisis in 1997, the proportion of household loans relative to total loans surpassed that of corporate loans. Additionally, a notable sectoral shift towards the real estate sector was evident. The share of real estate credit, which was 13% in 2012, rose to 24% in 2022. Conversely, manufacturing credit share dropped from 34% in 2012 to 24% in 2022.

This phenomenon suggests that the growing prominence of household sector credit and real estate sector credit could hinder economic growth due to the misallocation of credit towards less productive areas. While further empirical analysis is necessary to confirm this hypothesis, policymakers may consider implementing more stringent macroprudential measures on household sector credit and fostering incentives to encourage credit provision to more productive sectors.

JEL classification codes: H81, G21, G30.

Keywords: sectoral credit, corporate finance, household finance.

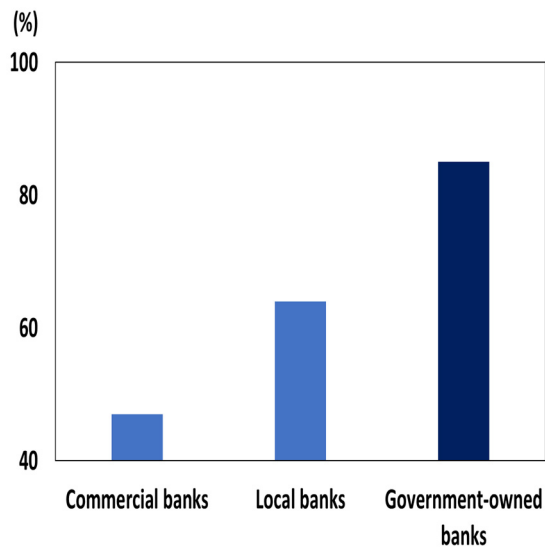
I. Shift in sectoral credit allocation

In Korea, government-owned banks (Korea Development Bank, Industrial Bank of Korea, Export-Import Bank of Korea) play a crucial role in corporate finance. These banks account for approximately one third of corporate loans within the banking sector. The share of total loans of government-owned banks that are corporate loans is substantially higher than that of commercial and local banks. As of the end of 2022, this ratio for government-owned banks was 85%, while the ratio was 47% and 64% for commercial banks and local banks, respectively (Graph 1).

We do not have firm empirical evidence that the pandemic significantly affected the lending behaviour of government-owned banks. However, the share of services sector credit increased by 4 percentage points, whereas the share of manufacturing sector credit decreased by 5 percentage points. The expansion of the services sector

credit was observed before the pandemic, but it is noteworthy that such a pattern became more pronounced during the pandemic (Graph 2).

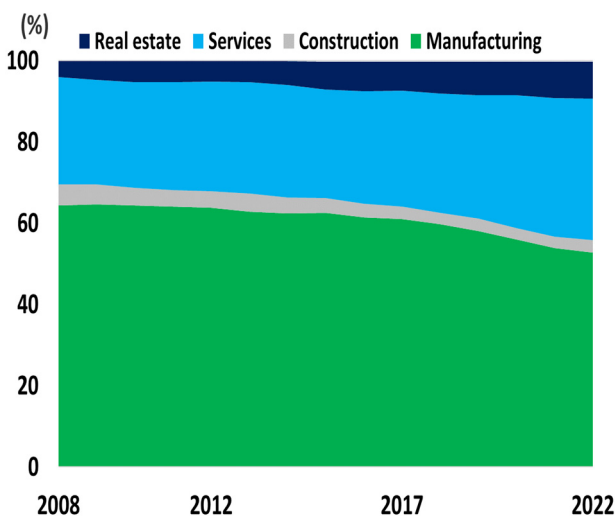
Graph 1: The ratio of total loans that are corporate loans, by bank type



Note: The share is as of the end of 2022.

Source: Bank of Korea.

Graph 2. The sectoral allocation of corporate credit from government-owned banks

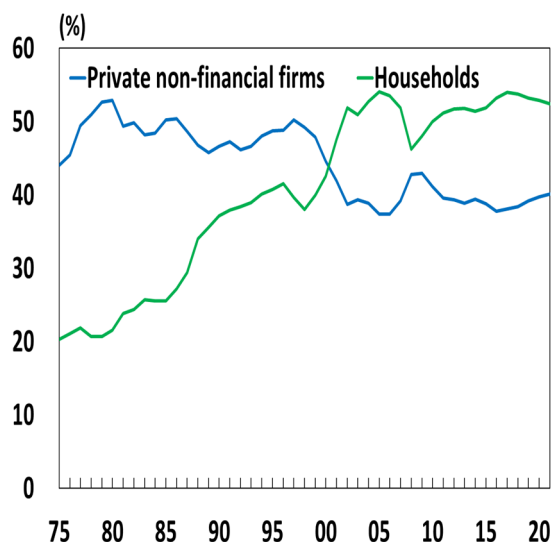


Source: Financial Supervisory Service.

There were major shifts in credit allocation between households and non-financial firms following the Asian financial crisis in 1997. Before 1997, the share of credit allocated to the household sector was smaller than that allocated to the private non-financial corporate sector. The share of household sector credit was 40% in 1999, rising to 50% in 2022. For non-financial corporations, the share of credit was approximately 48% in 1999 and decreased to 41% in 2022 (Graph 3).

Within the non-financial corporate sector, we observe a sectoral shift in credit towards the real estate sector. Real estate lending as come to constitute a considerable portion of corporate loan portfolios. The share of real estate credit in 2012 was 13%, and this share rose to 24% in 2022. In contrast, the share of services sector credit remained stable, hovering around 40% between 2012 and 2022. The most notable change occurred in the manufacturing sector: the share of manufacturing credit was 34% in 2012, and it decreased to 24% in 2022. Unlike in advanced economies, where the share of construction sector credit expanded to 14% as of 2015, the share of construction sector credit in Korea continued to decrease (Graph 4).

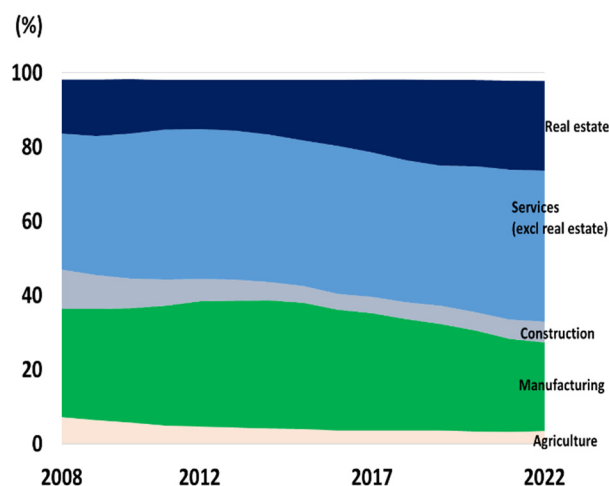
Graph 3: Sectoral allocation of credit between households and non-financial firms



Note: The share is as of the end of 2022.

Source: Bank of Korea.

Graph 4. Sectoral shares in corporate credit



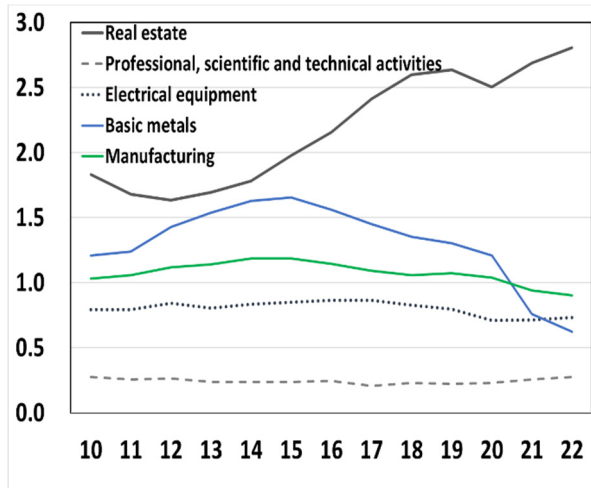
Note: This includes banks and non-banks.

Source: Bank of Korea.

A measure of credit concentration, defined as $\frac{\text{the sectoral share of credit to total credit}}{\text{the sectoral share of GDP to total GDP}}$, in the real estate sector is pronounced after 2015. As of the end of 2022, the real estate sector stands out, with loans exceeding twice its gross domestic product (GDP) composition. In contrast, other sectors, including manufacturing, electrical equipment and scientific activities, have a stable level of credit concentration (Graph 5).

This poses the possibility of credit expansion in the real estate crowding out other credit in the real economy. A scatterplot shows that the manufacturing sector's share of credit is negatively associated with that of the real estate sector (Graph 6). Other sectors, including services, agriculture and construction, do not exhibit clear correlations with the real estate sector's credit share.

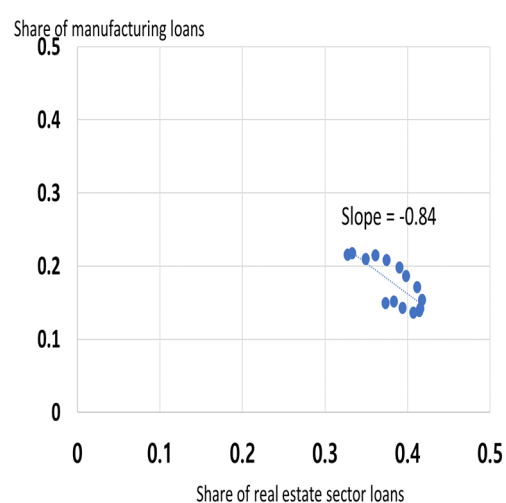
Graph 5: The measure of credit concentration, by sector



Note: The measure of credit concentration is defined as the sectoral share of credit to total credit / the sectoral share of GDP to total GDP.

Source: Bank of Korea.

Graph 6: Scatterplot of the credit shares of the manufacturing and real estate sectors



Note: The period spans from 2008 to 2022, and the credit shares of each sector are based on bank loans.

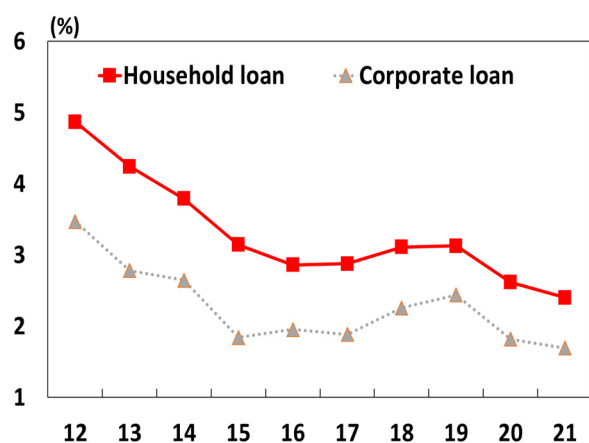
Source: Financial Supervisory Service

II. The causes of sectoral credit changes and potential remedy

Banks have the incentive to issue household loans instead of corporate loans for the following reasons. First, household loans offer higher profitability than corporate loans do, given that their delinquency rate is lower, reducing bad debt expenses (Graph 7). In addition, the procedure for a household loan is relatively simple relative to that for corporate loans. Not only are the majority of household loans secured by residential property (except for unsecured loans), but the market price of residential property is also available on a monthly basis.

Second, the Basel Framework, with the goal of establishing optimal practices for bank risk management, provides incentives for banks to prefer household loans. Under the Basel Framework, the risk weights for corporate loans range from 20% to 150%, whereas the risk weights for residential mortgage loans are lower, ranging from 35% to 50%. This results in a comparatively lower capital regulatory burden when handling household loans. As of the end of 2019, before the onset of the Covid-19 pandemic, domestic banks in Korea posed average risk weights by loan type as follows: residential mortgage loans were at 18% and personal retail loans at 26%, whereas corporate loans were significantly higher at 75% (Graph 8). This highlights the lower risk weight for household loans compared with corporate loans.

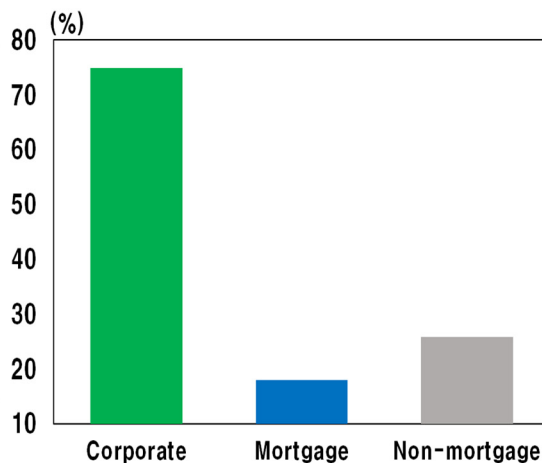
Graph 7: Estimates of loan profitability, by sector



Note: Profitability is defined as (interest earnings – allowance for bad debts)/loans. The estimates are based on reports of domestic banks.

Source: author's calculations.

Graph 8: Risk weights, by loan sector



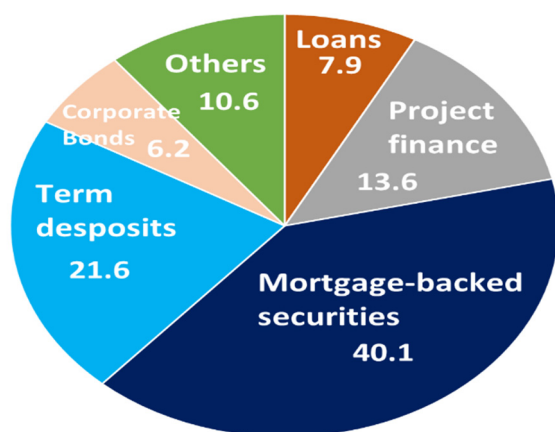
Note: as of the end of 2019.

Source: Bank of Korea.

The potential remedy for financing long-term growth could involve policy support for the securitization of corporate loans. In Korea, securitization of securities is primarily implemented in mortgage-backed securities, term deposits and project finance for commercial/residential property development (Graph 9). Securitization of loans held by financial institutions comprises only 7.9% of total securitized assets. Unlike in the United States and Europe, securitization of corporate loans (e.g., collateralized loan obligations, as shown in Graph 10) is not highly developed currently in Korea.

Digital innovation also has the potential to alleviate credit constraints, particularly for low-income groups and small and medium-sized enterprises (SMEs). However, as of the end of 2022, the role of fintech or big tech firms in the loan market remains limited. The outstanding amount of peer-to-peer (P2P) lending, as of end-2022, was 1.3 trillion won, accounting for only 0.06% of the total outstanding loans in the banking sector. It is noteworthy that a majority of P2P loans are directed towards mortgages. Consequently, SMEs are still unlikely to benefit significantly from digital innovation in securing loans.

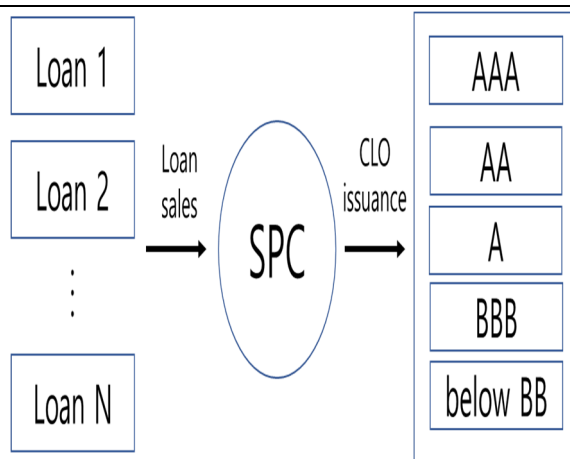
Graph 9: Shares of securities



Note: as of the end of 2022.

Source: Korea Securities Depository.

Graph 10: The structure of collateralized loan obligations (CLO)



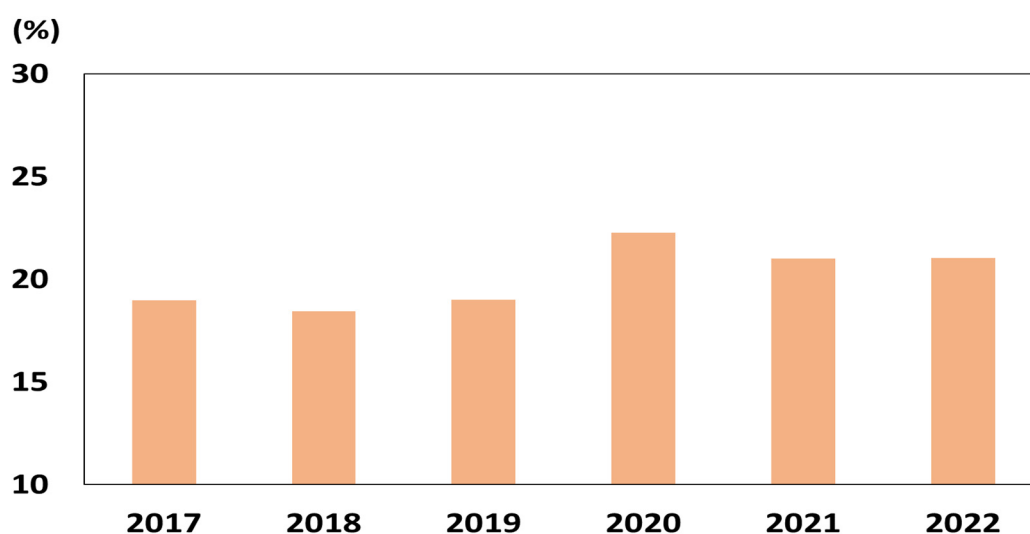
Note: SPC stands for Special Purpose Company.

III. Caveats in promoting corporate finance

Müller and Verner (2023) examine the relationship between sectoral credit expansion and economic growth. This study finds that credit expansions to the tradable sector are positively associated with sustained economic growth, while credit expansions to the non-tradable and household sectors are associated with a slowdown in growth. Other studies that explore the relationship between household debt and macroeconomic growth (Arcand et al. (2015), Cecchetti et al. (2011), Lombardi et al. (2017)) suggest that higher household debt is associated with lower long-run growth when household debt exceeds 60–80% of GDP. These studies underline the importance of allocating credit to more productive sectors.

Note, however, that there are also concerns about financing zombie firms, given the rising proportion of companies with an interest coverage ratio (ICR) below 1. Before the pandemic, an average of 19% of non-financial corporations exhibited an ICR below 1. After the pandemic, this ratio increased by 2 to 3 percentage points (Graph 11). The restructuring of zombie firms might be considered a priority before advancing corporate finance, as these entities could lead to a crowding out of credit for healthy firms.

Graph 11: Share of non-financial firms with an ICR below 1



Note: ICR is interest coverage ratio (operating profit/interest expense).

Source: Bank of Korea.

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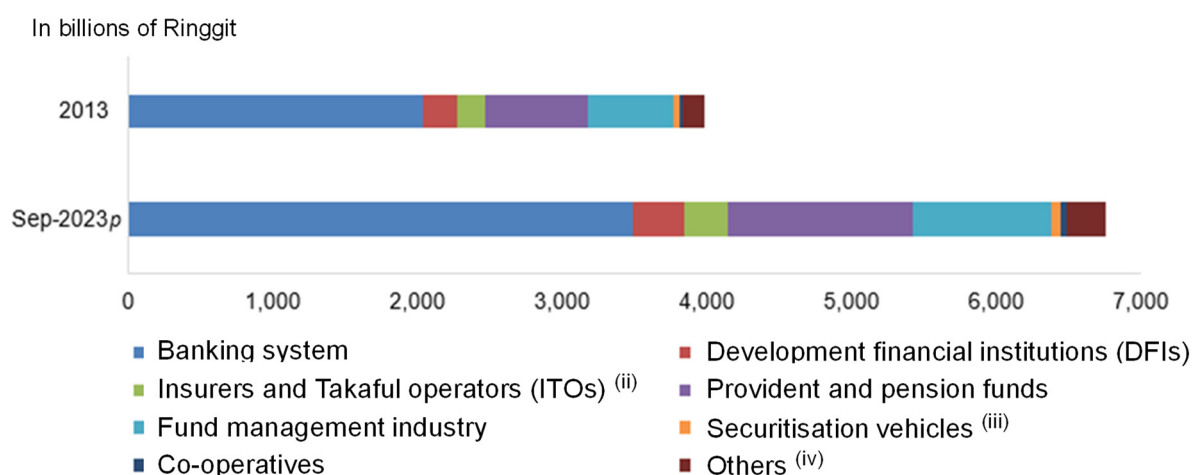
Müller, K and E Verner (2023): "Credit allocation and macroeconomic fluctuations", *NBER Working Paper*, no w31420.

The changing nature of the financial system: implications for resilience and long-term growth in emerging market economies (EMEs)

Bank Negara Malaysia

The Malaysian financial system: an overview

Financial system: total assets by type of institution Chart 1



p = preliminary. Data for non-regulated DFIs, provident and pension funds, co-operatives and others, are based on latest available figures as of December 2022 and June 2023.

(i) Includes DFIs not regulated by the Central Bank of Malaysia under the Development Financial Institutions Act 2002. (ii) Excludes investment-linked unit funds. (iii) Includes Cagamas Berhad (National Mortgage Corporation) and structured finance vehicles (asset-backed securities). (iv) Includes housing credit institutions, education financing provider, social security organisation, government-owned trustee company, pawnbrokers, money lenders, non-bank providers of hire purchase and credit sales, non-bank credit card issuers, and leasing and factoring companies.

Sources: Central Bank of Malaysia; Securities Commission Malaysia; Malaysia Co-operative Societies Commission; published financial statements; internal estimates.

The banking sector maintains a dominant role in the Malaysian financial system, holding total assets of MYR 3.5 trillion or about 1.9 times¹ GDP, with loans constituting about 58% of these assets (see Chart 1). The liability structure of the banking system is dominated by a diversified deposit base which accounts for approximately 78% of total funding, of which 35.9% is from retail deposits. The banking system’s consistently strong positions in terms of capital (total capital ratio: 18.2%; 2013–19 average: 16.3%) and liquidity (Liquidity Coverage Ratio: 151.5%;

¹ Data quoted in the paper are as of end-September 2023 unless stated otherwise.

2015–19 average: 135.3%) have contributed to its resilience against both domestic and external shocks. An important development in the recent decade has been the growing significance of Islamic finance (Islamic financing stood at 45.6% of total loans/financing of the entire banking system, as of end-December 2023). In 2021, digital banks were also licensed to help address market gaps in access to financial services, particularly for some segments of individual and SME customers. These banks, however, remain in early stages of operation in Malaysia.

Aside from banks, non-bank financial institutions (NBFIs)² in Malaysia play a complementary role in the provision of financial services, making up 49.9% of total financial system assets. The NBFIs sector has expanded by 67.4% over the past decade, with total assets growing from MYR 2 trillion in 2013 to MYR 3.3 trillion in 2023. About 40% of NBFIs' assets are attributable to provident or pension funds, thus limiting shadow banking risk related to maturity transformation. As the redemption risk is low, these funds engage in strategic investments with a longer-term view. Fund management/collective investment vehicles make up 30% of NBFIs' assets. While the sector's size is substantial, risk of excessive leverage is limited by rules imposed by the Securities Commission that prohibit such vehicles from engaging in leveraged investments.

While the banking sector remains as the dominant source of financing in the Malaysian financial system, the domestic bond and sukuk market continues to play an essential role as an alternate source of funding. Malaysia has a relatively well developed bond market.³ Total outstanding debt securities stand at MYR 2 trillion, equivalent to 1.1 times GDP. The bond market complements bank-based financing and serves as an alternative source of funding, especially for large corporations. Over the period 2010 to 2023, the bond market grew at a compounded average growth rate (CAGR) of 7.6%, compared with growth in domestic bank credit of 6.1% (see Chart 2). Government bonds, comprising Malaysian Government Securities (MGS) and Government Investment Issues (GIIs), account for 54.9% of total outstanding bonds, while issuances of corporate bonds have continued to grow as an important source of funding, particularly for larger corporations.

Malaysia's prominence in the global sukuk (Islamic bond) market has also contributed to the debt market's depth, which grew at a CAGR of 11.9%⁴ between 2010 and 2023. Collectively, these elements have helped promote the stability of Malaysia's funding markets through various economic cycles.

² Based on the Financial Stability Board (FSB) definition, NBFIs include the broad measure of all non-bank financial entities, comprising all financial institutions that are not central banks, banks or public financial institutions.

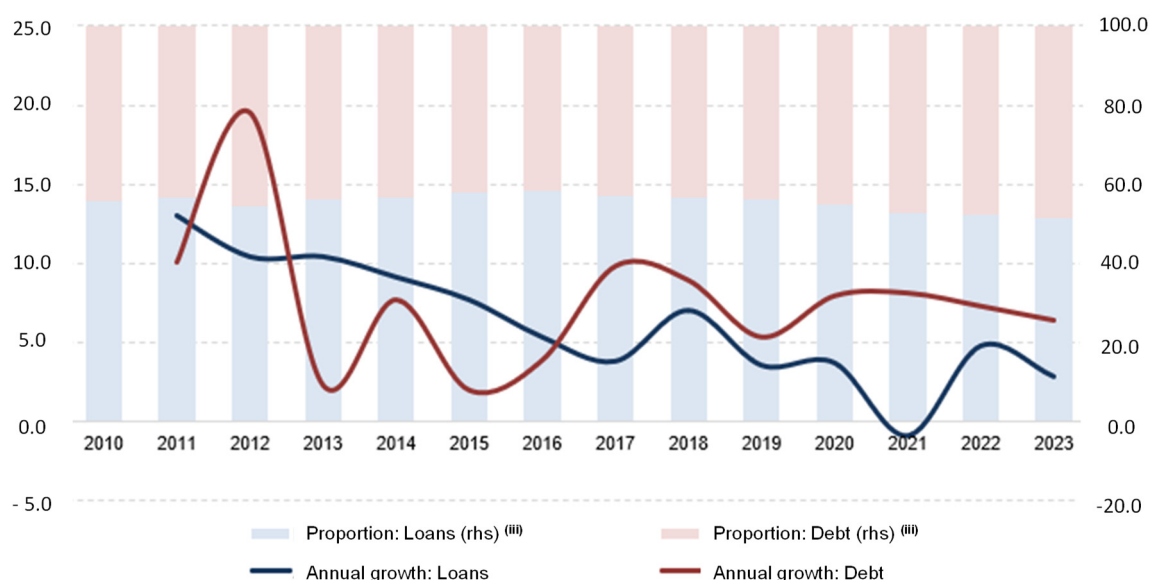
³ Measured as a percentage of GDP, the Malaysian bond market is the third largest in size in Asia, following Japan and Korea.

⁴ Total issuance of sukuk was approximately MYR 244.9 billion and total outstanding sukuk MYR 1.3 trillion at end-September 2023. Malaysian sukuk securities accounted for about 36% of global issuance and 40% of the total stock of sukuk securities outstanding globally.

Annual growth of loans(i) and debt(ii) financing

In per cent

Chart 2



(i) Refers to the total outstanding loans to the private non-financial sector from the banking system and DFIs. (ii) Total outstanding public and private debt, both conventional and Islamic. This encompasses issuances from the government, the central bank and corporate entities. (iii) Refers to the percentage share of each component relative to the total sum of outstanding loans and debt.

Source: Central Bank of Malaysia.

Developing Malaysia's bond and sukuk markets

The growth in the Malaysian bond market has been driven by a range of initiatives aimed at deepening and broadening the market. Among these initiatives are efforts to widen the investor base, which include enhancing participation from diverse market players such as banks and NBFIs, as well as insurance and takaful operators (ITOs). While the market is largely dominated by major domestic institutional investors (DIIs), such as banks and pension funds, there has been strong participation on the part of non-resident investors. The share of non-resident holdings in the bond market peaked at around 24% in 2014 and has averaged around 16% of the overall bond market in the past 10 years.

While the greater participation from non-resident investors has increased potential vulnerabilities to external developments, Malaysia's bond market has remained orderly given the significant presence of DIIs, which help facilitate price discovery and liquidity.

The bond market has also benefited from substantial developments in market infrastructure established following the 1998 Asian financial crisis (AFC).

These developments include the enhancement of price discovery process through the Bond Information and Dissemination System (BIDS) and the establishment of domestic credit rating agencies. Additionally, a more efficient issuance process was implemented through the Fully Automated System for Tendering (FAST) and the development of a real-time gross settlement system (RENTAS) to reduce settlement risk. Accordingly, these initiatives have contributed to an increasing spectrum of bond issuances beyond the more typical AAA-rated bonds and across a wider variety of maturities. This has helped expand funding sources for firms with differing funding and risk profiles.

The successful implementation of the capital market master plans (CMP1 and CMP2) was also crucial in advancing bond market development post-AFC. These master plans were centred around increasing transparency, refining trading mechanisms for efficiency and enhancing risk management protocols. Key initiatives under these master plans included moving to a full disclosure framework from a merit-based framework, establishing an MGS auction calendar that led to the establishment of benchmark yield curves, and gradual introduction of new asset-backed securities (ABS) products and real estate investment trusts (REITs) as alternative investment options.

Malaysia has also gradually extended the maturity profile of government bonds, fostering the development of a well formed long-term yield curve and establishing credible benchmarks for tenors ranging from three to 30 years. Volume-weighted average maturity of government bond issuances grew from 6.8 years in 2009 to 12.4 years in 2023. The improved liquidity and market depth in benchmark government bonds provides reliable reference pricing for high-quality private sector issuers to obtain long-term funding for infrastructure and developmental projects that have longer time horizons that cannot be met through bank financing. Naturally, as the government yield curve developed to comprise longer-tenor benchmarks, these private sector issuers were able to raise funds according to their requirements, reducing exposure to rollover risks.

More recent initiatives to enhance domestic bond market infrastructure include the introduction of the dynamic hedging programme in 2016 to develop domestic hedging facilities. This has been effective at allowing institutional investors to actively manage the FX exposure of their invested assets onshore. As at end-2023, 148 investors were registered for the dynamic hedging programme with onshore hedging activities recording an average daily FX turnover of USD 15.5 billion in 2023.

Malaysia is also actively pursuing the electronification of inter-primary dealer (PD) trading to improve government bond market liquidity and depth. This would eradicate barriers in communications such as trades that are reported manually which are prone to human errors, allowing for more efficient real-time price transparency.

Concurrently, Malaysia has intensified efforts to position itself as a global Islamic finance gateway. A key priority to achieve this is strengthening the vibrancy and sophistication of the Islamic financial markets via instrument diversification and providing regulatory clarity. These aim to widen the range and volume of Shariah-compliant investable assets, including to international investors. In this regard, the Islamic Financial Market Subcommittee (IFMC) set up by the central bank was tasked to explore strategies to enhance foreign investors' participation in domestic sukuk issuances. Thus far, the IFMC has made key progress in the area of hedging. This has

led to a Shariah Advisory Council ruling on the permissibility of anticipatory hedging, subject to specified conditions. This initiative is aimed at further developing the Islamic derivatives market in a way that aligns with both Shariah principles and prudent risk management practices.

The Malaysian Islamic finance market also plays a key role in pushing the country's sustainability agenda. As part of Malaysia's efforts, the government issued sustainable sukuk in 2021 via the issuance of USD 800 million in 10-year and USD 500 million in 30-year trust certificates, the world's first US dollar sustainability sukuk issued by a sovereign. The sukuk was issued based on the newly established government of Malaysia Sustainable Development Goal (SDG) sukuk framework, which was developed to demonstrate how the government of Malaysia intends to enter into the SDG sukuk to fund projects that will deliver environmental and social benefits which are in close alignment with SDGs.

Domestic credit growth is strongly associated with economic growth and property prices

Households' and businesses' demand for credit is supported by growth in consumption and investment activities amid stable income growth. In Malaysia, credit growth has been driven mainly by loans for the purchase of residential property by households and loans for investment purposes by businesses. In terms of economic sectors, the growth in business loans has largely been contributed by the manufacturing and services sectors.

In the early 2010s, Malaysia witnessed a period of exuberance in the property market, leading to significant increases in property prices and resulting in strong growth of property loans. Speculative investment activities were also observed during the period (2010 annual growth of borrowers with three or more outstanding housing loans: 15.5%; 2015–19 average: 2.1%). The Malaysian House Price Index (MHPI) expanded by 10.3% on average between 2010 and 2013, increasing household loans for the purchase of residential properties, which accounted for 45% of total household debt. Based on the credit-to-GDP (CTG) ratio gap⁵ and the annual growth rate of CTG as indicators for credit excessiveness,⁶ Malaysia's CTG gap in 2009 remained within the threshold of 1.5 times its standard deviation (see Chart 3), while CTG grew higher than 10% (14.4%, see Chart 4) due to a GDP contraction following the Great Financial Crisis.

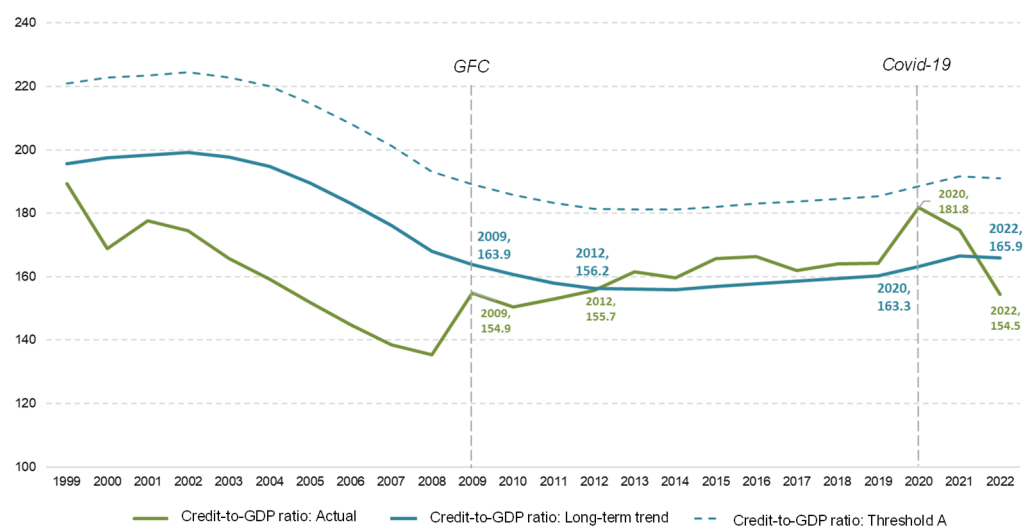
⁵ The credit-to-GDP ratio gap is the divergence between the actual credit-to-GDP ratio and its long-term trend.

⁶ Dell'Ariccia et al classified an episode as a credit boom if either of the following two conditions is satisfied: (i) the deviation from trend is greater than 1.5 times its standard deviation ("Threshold A") and the annual growth rate of the credit-to-GDP ratio > 10% ("Threshold B"); or (ii) the annual growth rate of the credit-to-GDP ratio exceeds 20%. The second condition is introduced to capture episodes in which aggregate credit accelerates very gradually but credit growth reaches levels that are well above those previously observed in the country. See G Dell'Ariccia, D Igan, L Laeven and H Tong, with B Bakker and J Vandenbussche, "Policies for macrofinancial stability: how to deal with credit booms", *IMF Staff Discussion Note* SDN/12/06, June 2012.

Credit-to-GDP ratio

In per cent

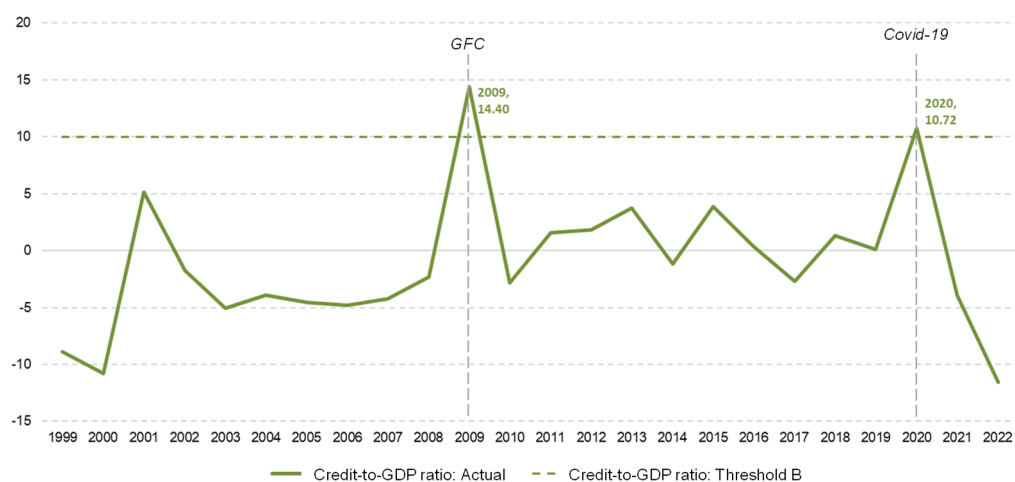
Chart 3



Annual growth of credit-to-GDP ratio

In per cent

Chart 4



Managing the risks of excessive finance: implementation of macro- and microprudential measures

In response to these signs of emerging risks, a set of macro- and microprudential measures aimed at avoiding excessive household indebtedness and strengthening responsible lending practices by key credit providers was introduced from 2010 onwards and remains in place today. These measures include the imposition of a maximum loan-to-value (LTV) ratio of 70% for the third and subsequent house financing facilities and an LTV ratio limit of 60% for all housing loans by non-individuals; higher risk weights were also introduced under the capital adequacy framework, from 75% to 100% for housing loans with LTVs exceeding 90%; and the maximum tenure for financing granted for the purchase of residential and non-residential properties was capped at 35 years.

Apart from borrowings for the purchase of residential properties, Malaysia also experienced high growth in credit card transactions (outstanding credit card balances 2010: 14.2%, 2009: 5.8%), which was partly due to increasingly easier access to credit cards as a payment instrument. While financial stability risks were limited, pre-emptive measures were put in place to ensure households did not become overly indebted beyond their financial means. These included raising the minimum income eligibility, limiting the number of credit cards individuals could have, and imposing an aggregate credit limit for those with annual income of MYR 36,000 and below, commensurate with their ability to repay.

These measures collectively helped to moderate the high credit growth, ensuring credit continued supporting GDP growth in a sustainable manner. Consequently, the CTG ratio converged towards its long-term trend in the 2017 to 2019 period. The bulk of the financing given was channelled into the purchase of residential and non-residential property as well as working capital for businesses, which contributes to home ownership, investment and business activities. The growth of credit card balances slowed to an average of 3.3% during 2017 to 2019, suggesting that the introduced measures were effective. Overall impairment trended lower at an average of 1.6% (2009–13 average: 2.7%), reflecting borrowers' improving debt repayment capacity.

The CTG ratio increased sharply again to 10.7% in 2020. However, this was largely driven by a contraction in GDP following a series of stringent movement control measures to contain the Covid-19 pandemic rather than being an indicator of excessiveness in credit growth. Credit demand grew only modestly, at 3.8%, during this period. Credit growth post Covid-19 has also been modest (2022: 2.3%, June 2023: 2.0%), driven mainly by household loans for the purchase of residential property. This reflects a gradual recovery in spending on big ticket items. CTG declined by 11.6% in 2022 but expanded by 1.0% in 2023, showing no signs of credit excessiveness.

Expanded role of NBFIs during the Covid-19 pandemic

Historically, NBFIs have played a crucial role during periods of market stress and significant withdrawal of non-resident investors from the domestic capital market. During such episodes, these entities have often stepped in to purchase government bonds and domestic equities, driven by attractive valuations and investment opportunities, effectively acting as an automatic stabiliser during times of market stress. This also helps provide the necessary funds to finance planned fiscal outlays. The capacity and willingness of NBFIs to play such a crucial role have helped to maintain investor confidence and reinforce Malaysia's resilience in the face of external economic shocks.

During the pandemic, the automatic stabiliser/countercyclical role of NBFIs in the government bond market became more apparent. Like many countries, Malaysia saw an increase in the issuance of government debt. NBFIs, who are already large holders of government papers, subscribed to 24% of new government bonds issued between 2020 and 2022 (2015–19: 28%). More notably, the average annual amount of new government bonds purchased by NBFIs during the pandemic (MYR 37.7 billion) grew by 30% compared to the five-year pre-pandemic average (MYR 29.4 billion).

NBFIs also played a key role in complementing the government's four economic stimulus packages introduced between 2020 and 2022. The country's largest provident fund implemented measures to ease cash flow strains. These included limited early withdrawal schemes for members to withdraw their retirement savings before reaching the mandatory retirement age. A significant majority of members, particularly among the lower-income segments, drew down on their retirement savings to meet daily expenses and sustain loan repayments between 2020 and 2022.

Meanwhile, credit-related NBFIs granted loan moratoriums to their borrowers, akin to those extended by banks. Most of these moratoriums were initially offered on a blanket basis to all borrowers before transitioning to a more targeted assistance programme. Some NBFIs provided direct funding to the government for Covid-related expenses, while some also provided rental waivers to SMEs who tenanted their office buildings. There were also NBFIs that played a more facilitative role, for example by implementing government-related assistance such as managing unemployment benefits or rolling out reskilling programmes. While such measures played an important role in mitigating the impact of the crisis, over the longer term the expanded role of NBFIs observed during the Covid-19 crisis could amplify the sovereign-bank nexus given substantial interlinkages between NBFIs and the financial sector as elaborated above.

Supporting Malaysia's long-term growth and transition to a high-income nation: what can a central bank do?

For Malaysia, policy measures to promote the efficient allocation of finance for long-term growth are focused on the following:

- Enhancing the diversity of the funding landscape to better meet the needs of households and businesses;
- Harnessing technological advancements to improve efficiency and inclusivity of financial services; and
- Positioning the financial system to facilitate an orderly transition to a greener economy.

Diversity of funding

Financing support for high-growth firms in Malaysia is increasingly aligned with Malaysia's National Investment Aspirations (NIAs).⁷ Financing approvals by Malaysian financial institutions to SMEs in NIA areas are on an uptrend, with healthy growth in sectors such as manufacturing of chemicals and pharmaceuticals, electrical and electronic products, and transport equipment. Among firms seeking bank financing, those in high-growth sectors are enjoying favourable approval conditions, as indicated by higher approval rates across loan purposes compared to the overall SME segment, with more than 90% of these borrowers obtaining their required financing in full.

Nevertheless, the share of both financing outstanding and disbursements to SMEs in NIA sectors remain relatively small at only 5%. This partly reflects the higher perceived risks associated with high-growth sectors, innovative firms and new strategic areas. Relying on deposit-funded intermediaries like banks may lead to inefficient allocation of capital to support frontier economic sectors.

Continued development of alternative financing sources and financial instruments has been critical to support the increasingly diverse funding needs across the business life cycle, encourage firms to embrace strategic pivots to enhance competitiveness, boost the growth of innovative SMEs and promote longer-term financial stability. This includes blended finance, venture capital, private equity, equity crowdfunding and social finance.⁸ Termed as "alternative finance", it has enormous potential to support growth of new and innovative enterprises.

⁷ The National Investment Aspirations (NIAs) refer to overarching strategic developmental objectives to increase economic complexity, create high-value jobs, extend domestic industry linkages and develop new and existing clusters. Strategic sectors deemed to be aligned with the NIAs include the manufacturing of electrical and electronic products, chemicals, medical devices and pharmaceuticals, machinery and equipment and transport equipment (eg aerospace); information and communication technology; research and development; and higher education. See further details in the box article "Securing future growth through quality investments", published in the Central Bank of Malaysia *Economic and Monetary Review* 2019.

⁸ Social finance pools recognised sources of funds such as donation and cash waqf to provide funding towards social outcomes. This approach complements public sector finance, commercially driven financial solutions and the corporate social responsibility activities of institutions, collectively promoting enhanced socioeconomic resilience.

Currently, the size of the alternative finance market in Malaysia is small compared to regional peers and developed markets.⁹ Alternative finance accounted for only 0.4%¹⁰ of GDP in 2022, a slight growth from 0.3% in 2018, and only 2% of SMEs reported utilising these avenues. Venture capital funding in particular is relatively underdeveloped compared to other countries in the region.¹¹

As part of a multi-pronged approach supported by various stakeholders involved in the funding and startup ecosystem, the central bank is playing a more targeted role in the alternative finance space. Interventions have been focused towards supporting a larger role for development and Islamic financial institutions to explore equity or blended financing in support of more sustainable SME funding solutions and growth of social finance. Meanwhile, government co-investment funds administered since 2019 have been instrumental in crowding in private investors and spurring growth in alternative funding. The Securities Commission Malaysia, on the other hand, is responsible for establishing the frameworks to regulate and strengthen development of private equity markets as well as online lending and investment platforms. Its five-year capital market master plan includes measures such as a more structured framework to encourage participation of angel investors, as well as support towards co-investment models involving institutional investors and venture capital or private equity firms. Other ministries and agencies in charge of technology, investments and entrepreneurship have also spearheaded efforts in fortifying the innovative industry ecosystem over the past few years.

Digital innovations

Technological advancements offer the financial sector numerous opportunities to enhance accessibility, efficiency and innovation. Digital innovation and data analytics employed by incumbents, fintech providers and digital banks¹² alike offer tailored solutions to the unique challenges and fulfil the unmet needs of unserved and underserved segments, thus possessing the potential to improve the efficiency and effectiveness of credit allocation. A key policy priority for financial sector regulators in Malaysia is to ensure the regulatory approach caters for digital-first business models and entrants, prioritising those that can advance greater financial inclusion, while ensuring a balance of risks and benefits.

For the central bank, our policymaking approach considers three overarching principles:

- **Parity:** implementing the same type of regulations for the same type of risk;

⁹ Based on publicly available data for the year 2018, the size of alternative finance as a percentage of GDP is 1.2% in Indonesia, 1.7% in Australia and 8.2% in the United Kingdom.

¹⁰ Source: Central Bank of Malaysia.

¹¹ See World Bank, *Malaysia: assessment of the start-up financing ecosystem*, March 2022.

¹² In April 2022, the Ministry of Finance approved five digital bank licences, out of a total 29 applicants. Three were approved to be licensed as commercial banks under the Financial Services Act 2013, and the other two as Islamic banks under the Islamic Financial Services Act 2013. See Central Bank of Malaysia, *"Five successful applicants for the digital bank licences"*, 29 April 2022.

- **Proportionality:** implementing regulations that are proportionate to the benefits and risk; and
- **Neutrality:** prioritising desirable outcomes whilst remaining agnostic to different technologies, systems and approaches.

These principles are applied in the central bank's licensing framework for entry of digital-first players such as digital banks. The framework enables the admission of innovative players with strong value propositions, while simultaneously safeguarding the integrity and stability of the financial system. This is operationalised through an initial or "foundational" phase of operations where digital banks are subject to a simplified regulatory framework commensurate with asset size limits imposed on their activities.

Measures are also in place to enable innovation and more efficient banking practices, such as the central bank's regulatory sandbox and electronic know-your-customer (e-KYC) policies. Introduced in 2016, the regulatory sandbox facilitated testing of various technologies and business models (eg digital insurance, peer-to-peer family takaful, buy-now-pay-later, digital remittance). Results of testing within confined parameters were useful in contributing to policy adaptations while ensuring that risks were within manageable levels. Meanwhile, regulatory guidance on e-KYC adoption in the financial sector aims to ensure that digital innovations remain compatible with expectations for financial institutions to ensure robust risk management practices in customer identification and verification to preserve the integrity of financial transactions.

Moving forward, regulatory focus remains on supporting Malaysia's financial industry to take advantage of the upsides of digitalisation, while managing the associated risks – especially those that may threaten system-wide stability, consumer outcomes, and confidence in the financial sector. Key focus areas include enhanced regulatory guidance for critical digital enablers such as cloud and artificial intelligence/machine learning (AI/ML), and efforts to strengthen industry cyber security readiness and responsiveness. The central bank is working closely with the financial industry to advance the development of an open data ecosystem for Malaysia's financial sector that can unlock greater market innovation, promote consumer empowerment and advance financial inclusion, with a more immediate focus on enabling open banking and open finance.

Green economy

Climate change and environmental degradation pose unprecedented challenges and opportunities that will reshape the economic and financial landscape. Against this backdrop, the primary focus of policymakers in Malaysia is to promote financial system resilience by continuing efforts to improve climate-related and environmental risk management in the financial sector. Simultaneously, given its central role in allocating and deploying economic resources, the financial sector could be a catalyst for advancing environmentally sustainable practices and financing green initiatives. In response to these developments, policy measures have been focused on:

- **Supporting an orderly transition to a low-carbon economy.** Financial institutions are actively encouraged to incorporate ESG considerations into their decision-making processes. The issuance of the Climate Change and Principle-based Taxonomy (CCPT) guidance document introduces a progressive system of transition categories (Climate Supporting, Transitioning and Watchlist) while emphasising the need for financial institutions to consider broader environmental impacts and the principle of “no significant harm” in business operations. Other than that, sector-specific¹³ toolkits have been developed for financial institutions to incorporate ESG risk considerations in their financing and investment decisions.
- **Integrating climate-related and environmental risks into prudential regulation and supervision.** Regulatory guidance establishes expectations for financial institutions to incorporate climate risk management and scenario analysis in their risk management practices. This is important to enhance the financial sector’s resilience against climate-related risks and to facilitate a just and orderly transition to a low-carbon economy.
- **Enhancing the role of the sukuk markets in facilitating green and greening investments.** The government has further bolstered its commitment to sustainability by issuing MYR-denominated sustainability sukuk, garnering strong support from institutional investors and financial institutions. These efforts signify Malaysia’s dedication to enhancing the liquidity of domestic sustainability sukuk and fostering a robust ecosystem for green financing within its capital markets.

Another emerging policy priority is to support small businesses’ orderly transition towards greener and more sustainable practices amid the climate crisis, which in turn are critical determinants for Malaysian firms’ growth and global competitiveness moving forward. Under the Joint Committee on Climate Change (JC3), in May 2023 the central bank, in collaboration with the financial industry and strategic partners, established an SME Focus Group (SFG)¹⁴ to accelerate transition and adoption of sustainable practices and green business models by SMEs. Additionally, the central bank has realigned its Fund for SMEs to incentivise or crowd in private financing into newly identified areas and to support the transition towards a low-carbon future, specifically through two targeted facilities:

- The **Low Carbon Transition Facility (LCTF)** was established in 2022 to encourage SMEs to adopt sustainable and low-carbon practices in their business operations. This includes providing financing for the purposes of improving energy efficiency, increasing usage of sustainable materials for production and obtaining sustainability certification. Under the LCTF, in late 2022 the central bank, in collaboration with FIs and strategic partners, launched the **Greening**

¹³ To date, sectoral guides have been issued for the following six activities/sectors: palm oil; renewable energy; energy efficiency; oil and gas; construction and infrastructure; and manufacturing.

¹⁴ The SFG announced three initiatives in 2023 to support SMEs’ transition: (i) introduction of the ESG portfolio guarantee scheme by the Credit Guarantee Corporation and a consortium of banks; (ii) the ESG Jumpstart Information Portal to equip SMEs with foundational information to jump-start their sustainability journey; and (iii) development of an ESG Jumpstart Guide to provide practical step by step guidance for SMEs to build basic ESG knowledge and navigate critical ESG issues, risks and opportunities.

Value Chain (GVC) programme to assist Malaysian SMEs in implementing long-term and impactful changes to green their operations through technical advisory and support by strategic partners, as well as transition financing.

- The **High Tech and Green Facility (HTG)** was designed to assist SMEs and innovative startups to grow their businesses and invest in strategic sectors and technological fields (eg digital tech, green tech and biotech).

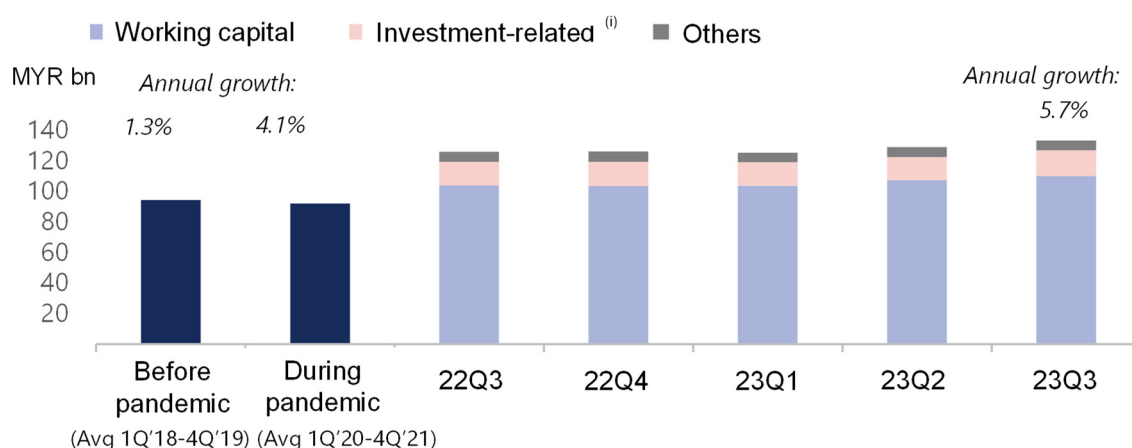
More than MYR 1.2 billion in financing has been approved to date under the LCTF and HTG, enabling more than 550 SMEs to start their transition journey. SMEs under the GVC programme have begun to measure their greenhouse gas emissions, and more than 40 of these have begun reporting emissions.

Box

Financing Malaysia's SMEs¹⁵

SME financing disbursements by purpose

Chart 1



⁽ⁱ⁾ Investment-related purpose includes financing the purchase of non-residential properties, residential properties for business use, fixed assets (including cars), and construction activity.

Source: Central Bank of Malaysia.

Throughout the Covid-19 pandemic, a continued flow of credit to Malaysian SMEs,¹⁶ supported by accommodative policies,¹⁷ helped viable businesses in managing tight cash flows and staying resilient over the periodic disruptions to economic activity. Although banks were more cautious in lending to borrowers and

¹⁵ Refers to loans from banks and development financial institutions (DFIs).

¹⁶ SMEs accounted for 38.4% of GDP, 48.2% of employment and 10.5% of exports in 2022 (source: Department of Statistics, Malaysia).

¹⁷ Measures by the central bank included significant monetary policy easing, temporary regulatory and supervisory flexibilities, and establishment of relief facilities paired with credit guarantee schemes.

sectors that were hit hardest by the pandemic, including SMEs,¹⁸ they continued to support viable borrowers by undertaking additional measures to complement credit risk assessments, including more extensive background checks and the use of alternative information sources as well as more frequent engagements to better assess the borrowers' financial and operating conditions. Overall SME financing approval rates gradually recovered by 2021 with the resumption of economic activity, while financing demand for liquidity needs also abated after peaking at the onset of the crisis.¹⁹

Since then, outstanding SME loans have continued to expand at a strong pace (September 2023: 6.7%, December 2022: 5.8%), amid sustained high levels of disbursements and higher approval growth supported by better approval rates. Forthcoming disbursements have continued for working capital purposes for firm expansion amid better business activity, while selected segments²⁰ have also continued to draw down on credit lines to bridge their cash flow needs amid persistent or renewed operating challenges and the high-cost environment. Notably, financing of SMEs' investment needs has gained momentum since late 2021 and there was a significant disbursement uptrend in 2023, reflecting positive investment sentiments amid the stronger economic footing.

Composition-wise, the top sectors for credit approvals and disbursements remained unchanged – namely services, especially in the wholesale and retail trade, manufacturing and construction sectors – aligned with the sectoral distribution of SMEs nationally and their economic contribution. In terms of approval growth, SMEs in property-related sectors (ie construction and real estate) were the single largest contributors in the post-pandemic period, marking a shift from banks' cautious lending to these sectors given structural weaknesses before the pandemic.

Another important development has been the significant growth in approval volume to microenterprises during and after the pandemic, with the average number of accounts approved annually in these periods almost doubling from pre-pandemic levels in line with the demand for financing.²¹ This underscores FIs' countercyclical role in helping the traditionally underserved segment to weather the economic downturn, while also reflecting the culmination of long-standing initiatives to improve access to financing for microenterprises.

¹⁸ SMEs were disproportionately affected by containment measures given lower liquidity buffers, also evidenced by the segment's reliance on targeted repayment assistance programmes (after September 2020), which followed the blanket moratorium period (April–September 2020).

¹⁹ SMEs' demand for working capital financing peaked in April 2020, in part reflecting the availability of the Special Relief Facility established under the central bank's Fund for SMEs. Demand then normalised, with pockets of pressing needs remaining in Covid-affected sectors.

²⁰ For example, SMEs in construction, manufacturing, and wholesale and retail trade sectors.

²¹ Post-pandemic refers to the period 2022–YTD September 2023, while pre-pandemic refers to the period 2018–19.

Enhancing SMEs' resilience in Malaysia: overcoming financing and ecosystem barriers in the post-pandemic era

The pandemic posed unprecedented challenges for SMEs, affecting their survival, growth and competitiveness.²² SMEs responded to cash flow strains by cutting operating costs and downsizing operations while adapting to new operating conditions by leveraging digital platforms, diversifying their businesses and changing their business models. At the peak of the pandemic, the government and central bank prioritised policy support, ranging from financial relief through to fiscal measures²³ and repayment assistance for SME borrowers,²⁴ to cushion the immediate impact of the crisis.

Notwithstanding the impact of the pandemic, certain SME segments generally find it more difficult to obtain financing due to inherent challenges, particularly “young” firms and microenterprises, given limited or no credit history and collateral. To address some of these constraints and ease access to financing, the central bank and the financial industry have continuously enhanced the financing ecosystem. This includes establishing various facilities under the central bank’s Fund for SMEs²⁵ to complement bank lending to SMEs and ensuring other forms of assistance are available, such as debt advisory and resolution, existing credit information infrastructure and financing facilitation. In addition, credit guarantee institutions such as Syarikat Jaminan Pembiayaan Perniagaan Berhad (SJPP), a wholly owned company of Minister of Finance, and Credit Guarantee Corporation Malaysia Berhad (CGC) continue to bolster bank lending via credit guarantee schemes, especially to SMEs with no or insufficient collateral. Meanwhile, in formulating policy recommendations, the central bank conducts active surveillance on the state of SME financing and policy analysis on an ongoing basis, including industry engagements with SMEs.

²² During the pandemic, SMEs in Malaysia experienced a significant decline in revenue, cash flows and profitability. See World Bank, “Impacts of COVID-19 on firms in Malaysia”, *COVID-19 Business Pulse Surveys*, round 3, July 2021.

²³ For example, wage and other subsidies, tax incentives, grants.

²⁴ For example, moratoriums, deferments and restructuring of loans.

²⁵ The Fund for SMEs provides financing at a reasonable cost to targeted segments or strategic areas for selected purposes, including for microenterprises. Further information available from <https://www.bnm.gov.my/funds4sme>.

The changing nature of the financial system in Mexico: the allocation of finance, long-term growth and policy measures

Bank of Mexico

The Mexican financial system remains strong and has exhibited considerable soundness and resilience over the past several years, managing to navigate several episodes of stress. It holds assets equivalent to 98% of GDP and has posted consistent growth for the last decade (5.5% annual growth as of March 2024). The financial system is bank-centred, with the commercial banking sector accounting for 44% of the system's assets. Meanwhile, pension funds account for 20% of the total, followed by investment funds with 11%, development banks with 10%, insurers with 8% and brokerage firms with 4%. The commercial banking sector has a strong presence of foreign subsidiaries and holds high capital and liquidity buffers. Five of the seven domestic systemically important banks (D-SIBs) are foreign-owned subsidiaries that account for a substantive share of their parent-group profits. Six development banks (DBs) fill market gaps by financing long-term projects such as infrastructure investments, small and medium-sized enterprises (SMEs), exporters, housing and low-income populations. These development banks generally rely on wholesale funding. Pension funds are the leading institutional investors, followed by investment funds and insurers.

The Mexican financial system is highly integrated with global financial markets. Foreign investors hold about 15% of the outstanding local currency government bonds, though their share has been declining in recent years. The Mexican peso (MXN) is widely used as a proxy for emerging market (EM) currencies. Trading volumes of MXN in major exchanges are significantly higher than those of most other EM currencies. Capital and bond markets are modestly sized and dominated by sovereign securities. Mexico experienced capital outflows and a sharp exchange rate depreciation during the Covid-19 pandemic. Still, the overall spreads of risky financial assets were low, market functioning was orderly and, most importantly, the financial system remained resilient during that period.

The allocation of finance and long-term growth

Foreign capital generates several benefits for emerging market economies (EMEs). These economies typically have lower savings rates than their developed counterparts. Thus, foreign capital allows EMEs to supplement their domestic savings with external resources to finance investment, promoting productivity and capital accumulation. Moreover, foreign investors have more diversified portfolios, which provide financing projects with higher risk but also higher profitability and productivity. Thus, these resources can be beneficial in the long run, as they can boost the potential output of an economy.

The benefits of increasing foreign capital flows depend on several factors. One key factor is the allocation of external resources and their impact on productivity. If resources obtained through foreign capital are directed towards projects or sectors that yield high profitability and enhance productivity, the benefits for economic growth will be more important. In addition, since a share of foreign capital is directed towards sovereign debt financing, it has been beneficial to free up a portion of domestic savings to support investment projects in other sectors of the Mexican economy, particularly in small and medium-sized firms; and it has also broadened the array of financial instruments available within Mexico's financial system. However, if the influx of foreign capital distorts relative prices and encourages the accumulation of financial imbalances, it may lead to macroeconomic and financial downturns. Examples of such scenarios are the financial and economic crises Latin America faced in the 1980s, which were closely related to the dynamics of foreign capital. Thus, it is important to closely follow these inflows to make sure no such imbalances appear.

Another advantage of gaining access to foreign capital is that it typically comes hand in hand with increased accountability on the part of policymakers. Enhanced access to these resources, coupled with a robust macro-financial framework supported by responsible public policies, can stimulate the development of the financial system in EMEs and yield additional benefits such as achieving greater economic growth that can be further amplified if, for example, competition, market discipline and financial inclusion are fostered.

For instance, following the 1995 Tequila crisis, Mexico implemented significant economic and financial reforms that positively impacted the development of its bond and capital markets. These advances occurred gradually, enabling the Mexican government to develop and adopt a debt management strategy. This strategy allowed the economy to shift from foreign currency debt to domestic currency debt, diversifying bond issuance in foreign currencies other than the US dollar, extending debt maturities and creating a longer, more liquid government yield curve. Consequently, increased access to foreign capital, a robust macro-financial framework and an autonomous and accountable central bank allowed Mexico to develop and fortify its financial system. This, in turn, enhanced financial stability and mitigated both the first- and second-order effects of economic shocks.

Excessive finance, resilience and long-run growth

The relationship between exposure to international finance, macroeconomic volatility and its impact on long-term economic growth hinges significantly on the quality of an economy's macroeconomic framework and the effectiveness of its policies. For example, when an economy accumulates high levels of external debt, especially if it is denominated in foreign currency, it becomes vulnerable to fluctuations in exchange rates and global financial shocks. Moreover, a heavy reliance on foreign capital inflows introduces elements of instability due to the inherent unpredictability of these financial flows. The situation may be further exacerbated in economies with underdeveloped financial markets, where the influx of international capital can increase volatility and broaden economic imbalances.

In this regard, various economic and institutional channels play a pivotal role in mitigating the potential adverse impact of international financing on macroeconomic volatility. A credible and independent monetary policy as well as responsible fiscal policies are key factors in alleviating the effects of volatility. Effective financial regulators are also crucial for managing and mitigating the risks associated with financial market volatility. Additionally, factors such as political stability and high-quality governance are essential for maintaining and enhancing the confidence of foreign investors. All these elements are fundamental in establishing a robust macro-financial framework that enables increased exposure to external financing without triggering macroeconomic and financial instability, ultimately contributing to long-term economic growth.

As an EME, Mexico is susceptible to reactions from global financial markets due to its significant exposure to external financing. However, it is essential to note that Mexico has established well-structured adjustment processes for such events, based on its robust macro-financial framework (price stability, fiscal discipline and a strong financial system, along with ample international reserves to foster the orderly functioning of markets during shocks). Additionally, Mexico's extensive and diverse investor base further contributes to an orderly adjustment, enhancing the liquidity and depth of local financial markets. While a higher exposure to global markets could increase volatility in the short run, there is no doubt that, if it is well managed and comes along with a sound macro-financial framework, it diminishes volatility in longer terms.

Notwithstanding the safeguards, no silver bullet allows an economy to open to foreign capital and reap its benefits while remaining shielded from potential external shocks originated in (or transmitted through) international financial markets. A sustained track record of consistent policymaking geared towards those goals is essential to strike a good balance between the different trade-offs. In the case of Mexico (although it is also the case in other EMEs), the robustness, coherence and credibility of the macro-financial policy framework, coupled with a flexible exchange rate regime that acts as an efficient shock absorber, can be credited with making medium- and long-term financing a reality for some sectors in the economy. Undoubtedly, the experience gathered during these decades-long process will give us a head start in coming years to remain an attractive destination for foreign capital in times of fast-paced technological innovations in the financial sector.

Digital innovation and fintech

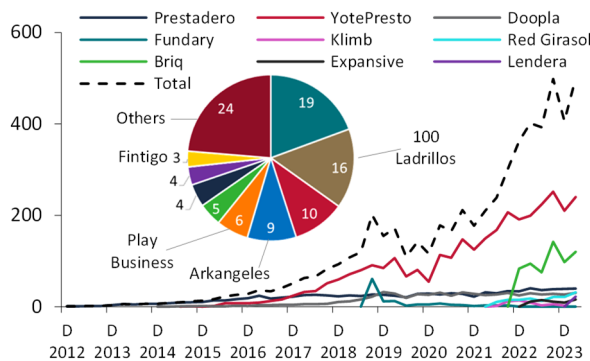
The financial industry has transformed rapidly over the last few years due to new technologies (e.g. big data, artificial intelligence, machine learning, cloud computing) and greater connectivity. Even though this process has been driven by shifting consumer behaviour for the most part (possibly linked to demographic factors, such as the usage of internet-connected devices), it is undeniable that financial services providers have also played a significant role. Moreover, because of this ongoing transformation, the relationship between users and providers of financial services has also changed and is expected to continue evolving.

These developments carry risks of their own. To fulfil our legal mandate of promoting the healthy development of our financial system, we should remain vigilant, especially in the presence of significant externalities. Industry shifts and the respective policy responses should be aligned to improve the system and, ultimately, users' welfare. For instance, given Mexico's previous history and current standing in terms of financial inclusion, one sensible approach would be to leverage the digitalisation of financial services to close the remaining gaps.

Fintech is a booming industry in the Mexican market, and increased competition in and from this sector has motivated incumbent banks to invest in digital technologies and evolve rapidly to attract new clients that entrant non-bank digital firms might otherwise attract. Despite the strong growth in fintech institutions, this sector's funding is still small relative to traditional banks although it is similar to other non-bank financial institutions (Chart 1).

Chart 1

Funding granted by institution: crowdfunding institutions¹
In millions of pesos

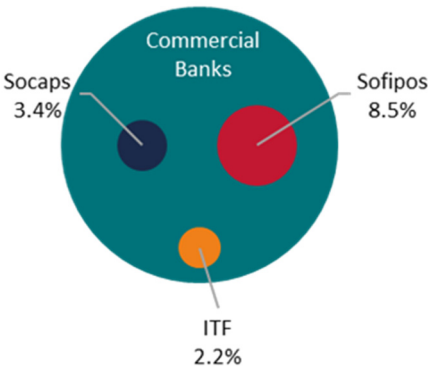


Data as of March 2024.

¹ The pie chart denotes the proportion of capital contributed by crowdfunding lenders compared to the total (in percent). The colours in both the pie -slices and the time series' lines correspond to the ones next to the entity names on top.

Source: Institutions' websites.

Relative size of financial intermediaries compared to commercial banks²
Percentage in terms of total equity



Data as of March 2024.

² The pie chart denotes the proportion of capital contributed by crowdfunding lenders compared to the total (in percent). The colours in both the pie -slices and the time series' lines correspond to the ones next to the entity names on top.

Source: Institutions' websites.

Mexican fintech law

Given the importance of this sector, Mexican financial authorities considered the need to issue a fintech legislation. The Mexican regulators – the National Banking and Securities Commission (CNBV); the Ministry of Finance (SHCP); and the Bank of Mexico – drafted a joint proposal for a financial technology law (known as the Fintech Law), which the Senate approved in March 2018.

The Fintech Law was introduced to create conditions for the sector to evolve in an orderly way based on a client protection perspective that would allow greater

financial inclusion. In particular, the objectives of this law were twofold. First, to create a legal framework that provides certainty and protection to its users and promotes the sector. Second, to regulate financial activities carried out with these new technologies, particularly with institutions focused on crowdfunding, e-money and crypto asset activities.

Given the inherent risks that this sector may represent to financial stability and the sector's dynamism, the Fintech Law was based on certain ruling principles that would provide authorities with greater flexibility to regulate. These principles include financial inclusion, consumer protection, increased competition, preservation of financial stability and anti-money laundering/combating the financing of terrorism (AML/CFT).

The main aspects regulated by the Fintech Law seek to limit the scope of collective financing institutions (crowdfunding) and electronic payment institutions (e-money) where the resources for these types of lending alternatives are akin to deposits, since there is no deposit protection framework in place like the one for bank deposits. Nonetheless, it is recognised that these platforms' clients need certain level of protection. In particular, the Law oversees the following services: crowdfunding and peer-to-peer (P2P) lending, e-money services, virtual assets (cryptocurrencies), application programming interfaces (APIs) and open banking. For instance, the CNBV authorises the licences of fintech institutions, whereas for operations with virtual assets, the Law does not regulate them directly, but rather their use by financial institutions.

The Fintech Law would not cover other financial digital services pertaining to unregulated activities. For example, insurance is a regulated activity, so its digital implementation would still fall under the insurance regulator's scope.

Previous efforts

The pandemic set a fertile ground for a faster digitalisation of financial services, especially in digital banking. The Bank of Mexico has made various proposals to increase digitalisation in financial services, which is a challenge given the size of the informal sector in Mexico. In 2019, the Bank of Mexico implemented a digital payment system through quick response (QR) codes named CoDi. It has become a part of our policy efforts to increase financial inclusion and reduce the amount of cash used in the economy, which is quite large for a country where the informal sector accounts for 55% of total employment. Unfortunately, the considerable informality compounds with poor financial education and other cultural traits to make the generalised adoption of CoDi a challenge, mainly because a bank deposit account is a prerequisite for both the sending and the receiving ends of a CoDi transaction. The recently launched mobile money scheme (DiMo, for its Spanish acronym) is a new service that allows money transfers between two mobile phone users without additional information requirements. Finally, in line with several other central banks, the Bank of Mexico has been analysing and assessing the pros and cons of introducing a central bank digital currency (CBDC).

New entrants

Since the onset of the pandemic, new credit card digital lenders have evolved their business in the current high interest rate environment towards deposit-taking as part of the financial services they offer. Some institutions have been doing this by acquiring licences for microfinance deposit-taking intermediaries, similar to banks (popular savings and loan institutions) catering to the unbanked segments of the population.

The fight over retail deposits has triggered fierce competition in terms of interest rates being offered. Some licensed formal digital banks have responded with similar deposit products. Authorities must remain vigilant on the outcomes of this competition strategy by new entrants, as it relies on the assumption that they can promote growth while maintaining a healthy loan portfolio and complying with loan origination standards. If loan portfolios deteriorate in terms of credit quality, these entities may not produce the necessary margins to pay depositors in the medium and long term at the rates that they are offering. Their main vulnerability is that their credit models have yet to be tested, unlike traditional banks' models. While entrants and incumbents have ample capital levels, this can change if economic activity suffers a downturn that impacts borrowers' disposable income through adverse effects on employment. Thus, authorities must monitor the evolution of these institutions, particularly newcomers, because Mexican banks are in a better position as they mainly serve formal sector individuals and firms.

Benefits from financial digitalisation

There are significant potential benefits of digitalisation for financial inclusion and investment. The positive impact on unbanked and underbanked segments of households and firms (especially SMEs) may be considerable if loan origination and risk management are done properly. This could also increase tax compliance, as digital transactions can be monitored by authorities. However, considering the significant share of informality and the considerable incentives to remain outside the fiscal authority's radar, adoption could slow down at some point and not be as broad as expected from the current growth trend.

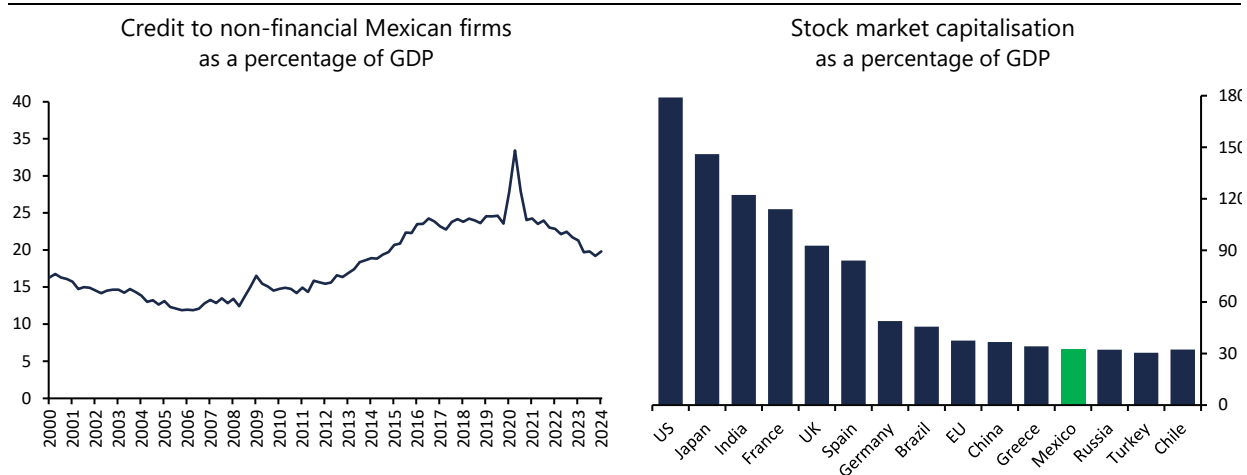
One area where there could be an especially positive impact in Mexico, besides the credit sphere, is insurance services. These services have low penetration, individuals (as well as firms) do not fully grasp the benefits of risk-sharing via insurance contracts, and premiums are perceived as high. A public policy mandating insurance contracts to cover certain risks (third-party liability) would be likely to increase activity and insurance penetration through competing digital platforms while increasing transparency and financial education on these products.

The good news is that the increase in competition and innovation is so dynamic that benefits are expected to be seen in the very short run. In that regard, authorities must step up supervision and regulation to stay on top. New risks may also arise, especially those related to cyber security. Authorities need to update their regulatory and supervisory processes as they face a significant increase in the number of participants.

Allocation of finance for long-term growth, including capital markets

Mexico's capital markets remain small and subdued, like many among EMEs. Regulatory changes in the past 15 years have been essential to create investment instruments that expand households' and firms' alternatives, especially towards long-term products. Nonetheless, there have been recent episodes of firms delisting from the stock exchange, low activity and illiquidity in both the stock and debt markets and low interest on the part of large, consolidated companies in accessing capital markets to obtain more financing that could enhance their investment and broaden their activity. This also means that, in general, public investors remain outside of the stock market as demand is low and financial inclusion is limited. Hence, the Mexican capital market is small (Chart 2) and its turnover is low compared to its peers; in addition, volume is highly concentrated in a few issuers (Chart 3). Lack of financing may also explain low fixed investment rates in the economy.

Chart 2



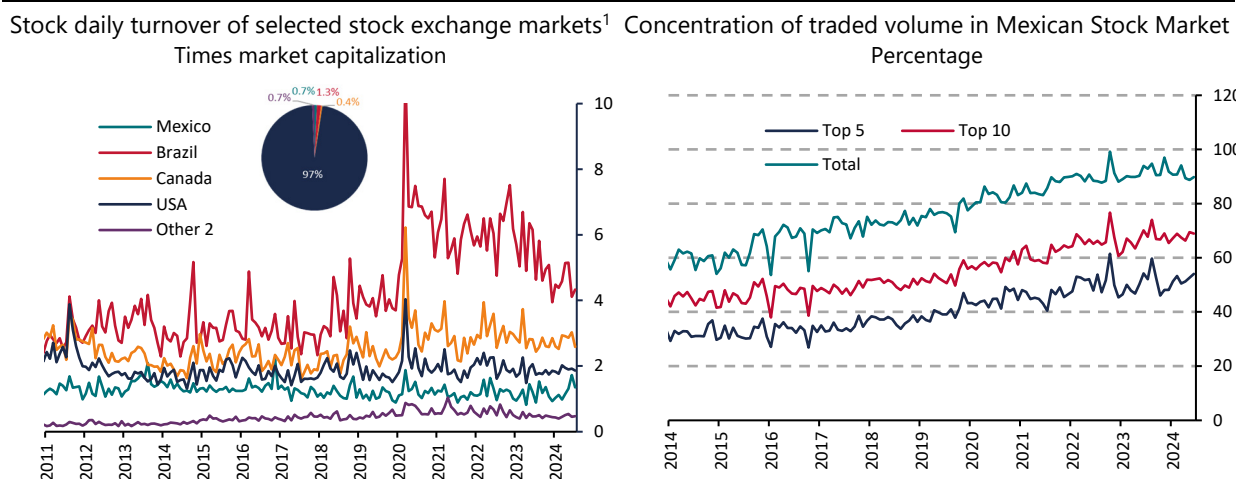
Data as of March 2024.

Source: Bank of Mexico.

Data as of 2023.

Sources: World Federation of Exchanges and World Bank.

Chart 3



Data as of June 2024.

¹ Three-month moving average. ² Includes Argentina, Chile, Colombia and Peru.

Sources: Bloomberg and Bank of Mexico.

Mexican regulators (the CNBV, SHCP and Bank of Mexico) and industry associations have assessed this environment in recent years and deemed it necessary to address existing shortcomings, on both the demand and the supply side. In November 2023, a reform advocated by all stakeholders was approved by the Congress and is expected to have positive effects in the short term, following publication of the necessary secondary regulation.

Among the shortcomings targeted by this reform are the strict requirements for firms to become public, making it costly to comply, even for some large and medium-sized firms. To this end, a simplified regime was created to attract medium-sized and even small firms seeking financing, along with other measures taken to increase market liquidity for both listed stock and public debt markets.

On the supply side, the simplified regime will help reduce the time it takes for small and medium-sized firms to issue debt or equity in the local public market. To achieve this, the new rules grant flexibility in entry requirements, allowing the issuance of common stock – and other types of ownership alternatives with variations in voting rights – to avoid hostile takeovers (a concern for large family firms, for example). At the same time, they limit the set of investors that may take this debt and equity to qualified investors, thereby limiting risk-taking to proficient clients. The reform also incorporates some due diligence responsibilities on broker-dealers and the stock exchanges, instead of leaving them to the securities regulator to stamp the issuances. This reduces the public perception of authorities endorsing the quality of the issuances and the associated false sense of security. Securities and broker-dealer firms will now have this responsibility facing their clients. This will align incentives as broker-dealers would incur the reputational cost of offering products that go against their clients' interests. With this reform, a mechanism similar to the United States Reg 144-A is open to SMEs that want to access institutional investors' financing.

On the demand side, provisions have been made so that specific institutional investors have access to new debt and equity issuances. In this regard, within this reform hedge funds have been included for the first time in the law. Other changes for the investment fund sector include adopting best international practices, which is likely to increase transparency. Some changes in the secondary regulations may be needed to fully exploit the potential of the new securities market law.

Lastly, another relevant capital market development that is likely to provide benefits is the consolidation of an ESG debt market. This market has grown notably in the last year and is expected to represent more than half the outstanding balance in the local long-term debt market soon. Indeed, our previous experience developing a long and liquid government bond yield curve will help us guide our efforts for a similar outcome in the ESG case.

Conclusion

A fast-evolving financial system plays a very relevant role in fostering investment, which can, in turn, bolster economic growth. It is vital to leverage the benefits from international capital markets, as they could fund productive projects and foster long-term economic growth in the presence of sound economic fundamentals. To fully grasp the benefits of international markets, it is crucial to participate in them while maintaining sound local financial markets and a deep financial system, thereby creating multiple investment channels for households and firms of different characteristics. In this regard, the Mexican financial system is experiencing growing participation by fintech institutions that can foster financial inclusion and depth provided their growth is overseen by authorities to prevent undue accumulation of risks and ensure sound consumer protection. Finally, the regulatory framework for local financial markets is also being reformed to facilitate wider participation of firms, particularly SMEs. Overall, the evolving financial landscape should create fertile soil for the more extensive involvement of economic agents in funding productive projects and economic activity

The changing nature of the financial system: implications for resilience and long-term growth in EMEs: the Peruvian experience¹

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The structure of the Peruvian financial system has remained relatively stable in recent years, with private sector financing increasing moderately over the past 10 years. Historically, credit from deposit-taking institutions has served as the primary source of funding. However, there has been a shift towards greater diversification, particularly among families and small businesses, in contrast to the previous dominance of corporate credit. Concurrently, the Peruvian capital market has grown, largely attributable to the increased involvement of institutional investors and non-residents in the local sovereign bonds market, but still remains small and incipient compared to other Latin America economies. Recently, some regulatory measures impacting the portfolios of private pension funds pose a potential risk to the market's overall depth and stability.

Some features of the current financial system include the predominance of private financial institutions over state-owned ones in extending credit to the private sector, a decreasing trend in dollarisation due to measures implemented by the Central Reserve Bank of Peru (BCRP) over the past decade, and a significant growth in the microfinance sector facilitated by specialised institutions focusing on this segment. However, despite advancements, a substantial portion of the population remains excluded from the formal financial system, largely due to Peru's significant informal economy.

Therefore, technological innovations can play a pivotal role in promoting microfinance, as they enable cost-effective transactions and enhance access to financial services, especially for individuals residing in remote areas. The momentum of digital payments gained traction during the pandemic and continues to surge. This ongoing evolution aligns with advancements in retail payment methods, the modernisation of critical payment infrastructures, and the emphasis on efficiency and security through BCRP's regulations and oversight.

1. Evolution of the Peruvian financial system

The Peruvian financial system has experienced a remarkable transformation from a severe case of financial repression and capital controls during the 1970s and 1980s to a liberalised financial system with an open financial account.

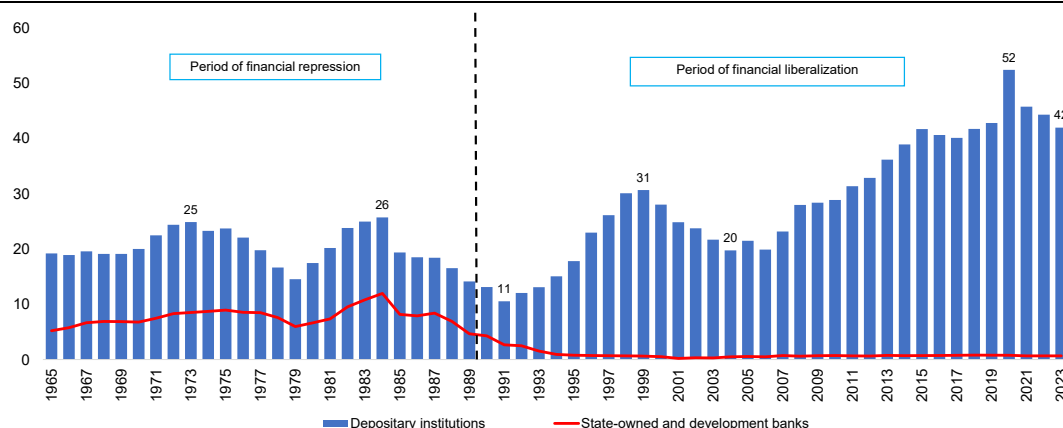
In the first phase, until the end of the 1980s, the financial system was plagued by multiple distortions. These included binding interest rate caps, direct

¹ Prepared for the BIS EME Deputy Governors meeting on "Finance, resilience and economic growth in EMEs", 18–19 March 2024.

allocation of loans based on portfolio coefficients, high reserve requirement rates (RRRs), freezing of foreign exchange (FX) deposits, mandatory investment directives for banks, and a range of taxes imposing burdens on financial intermediation (such as a 2% tax on chequing account debits and an excise tax on interest earnings). Consequently, Peru experienced significant financial disintermediation along with a hyperinflation process starting in 1988, substantial capital outflows, widespread scarcity of bank credit, rampant speculation and the emergence of informal credit intermediaries. Low formal intermediation, compounded by the inflation process, severely restricted the lending capacity of financial institutions and increased their operating costs by reducing the volume of lendable resources. By 1989, the monetisation ratio, reflecting the availability of national currency financial resources for supporting economic activity, fell to a historic low.

Total credit (as % of GDP)

Graph 1



Sources: Central Reserve Bank of Peru.

In the second phase, starting in 1991, the authorities launched a comprehensive programme aimed at liberalising the financial system. The measures taken included: (i) the new Law on Banks, Financial Institutions and Insurance, seeking to establish a level playing field for domestic and foreign investments with an aim to promote free competition; (ii) freedom to hold FX; (iii) banks' freedom to set interest rates, commissions and fees; (iv) lower RRRs; (v) reform of state-owned financial intermediaries, consolidating them into one entity performing second-tier banking functions (*Corporación Financiera de Desarrollo*, known as COFIDE) and an agricultural development bank (Agrobanco); (vi) FX market liberalisation; (vii) redefinition of the role of the Central Reserve Bank of Peru (BCRP); (viii) elimination of taxes on intermediation; (ix) introduction of the new Securities Market Law; (x) enactment of the Private Pension System Law; and (xi) reinforcing regulatory and supervisory mechanisms aligning with Basel prudential criteria (1996).

During the 1990s, the financial system experienced a recovery, evidenced by an increase in the credit-to-gross domestic product (GDP) ratio from 11% in 1991 to 31% in 1999. During this period, the newly introduced regime of free capital mobility, the restructuring of public debt and other market-friendly reforms promoted capital repatriation and capital inflows. However, in September 1998, a sudden-stop episode was magnified by high financial dollarisation (78% of bank credit was FX-denominated) and bank' high dependence on short-term external debt

(5% of GDP and 25% of bank credit prior to the capital outflow). The credit crunch and the balance sheet effects caused by the sharp currency depreciation had a larger impact on corporates and medium-sized firms, as bank credit was concentrated in these segments.²

Financial depth in Peru increased following the above reforms and the achievement of low inflation by the end of the 1990s.³ Financial system assets have grown consistently, from 37% to 58% of GDP between 2001 and 2023. They peaked at 79% of GDP in 2020, due to the extraordinary stimulus measures (especially a government-guaranteed loan programme known as “Reactiva Peru”) implemented to address the impact of the Covid-19 pandemic.

In addition, the number of debtors surged from 1.4 million in 2001 to 8.0 million in 2023. At the same time, the number of financial institutions decreased from 63 in 2014 to 51 in 2023 due to spin-offs, mergers, acquisitions and liquidations among financial entities in recent years.

As part of the liberalisation process, the new financial regime from the beginning of the 1990s allowed free capital mobility and freedom to hold FX financial assets. Moreover, article 64 of Peru's 1993 Constitution established that the state guarantees the freedom to possess and dispose of foreign currency. This provision fostered an environment conducive to capital inflows from bank accounts held by Peruvians abroad. Given the country's history of hyperinflation and the persistence of high inflation rates at the time, the dollarisation coefficient remained significantly high.

In this century, financial dollarisation has decreased continuously in parallel with keeping low inflation. Thus, the dollarisation coefficient for private sector obligations decreased from 82% in 2000 to 23% by December 2023. The decline in financial dollarisation has been facilitated by the inflation targeting framework adopted by the BCRP in 2002. This approach entails a permanent, clear and credible commitment to maintaining the purchasing power of the PEN over time, thereby restoring confidence in the domestic currency. Accordingly, the BCRP has implemented policies such as the credit de-dollarisation programme, which seeks to align incentives for financial entities through RRRs linked to the evolution of dollar credit, as well as currency repo operations, to continue promoting a gradual reduction in credit dollarisation over the long run⁴.

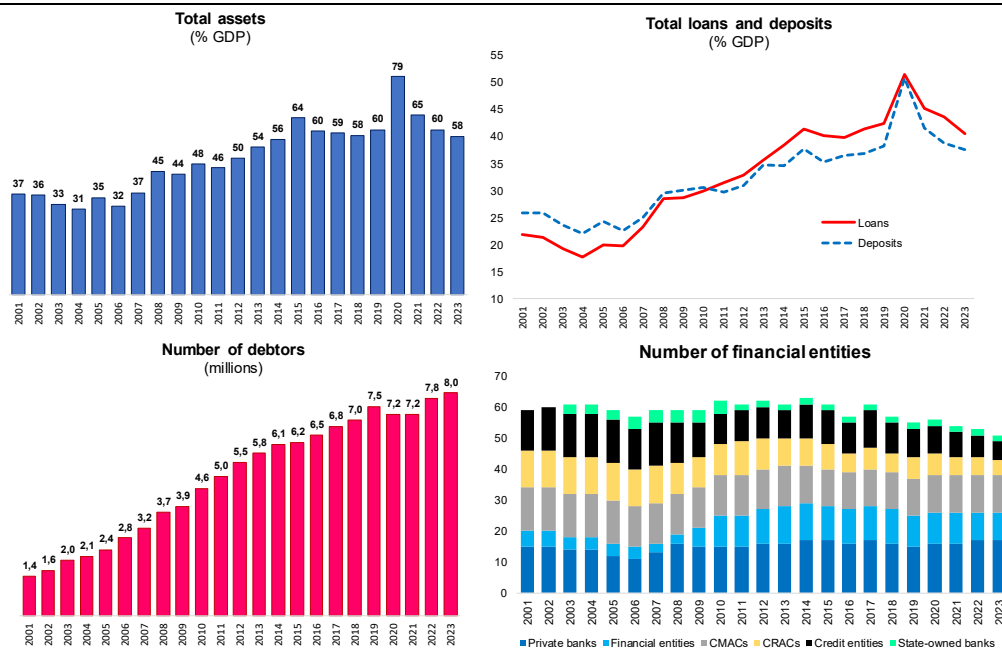
² The capital flow sudden stop was widespread in Latin America and other regions. Castillo and Barco (2009) provide more detail and an international comparison of economic costs and policy responses.

³ From 39.5% in 1993 to 6.01% in 1998 and to 3.7% in 2000. During 2001–22, the average inflation rate was 2.91%, the lowest among Latin American countries that issue their own national currencies.

⁴ Armas (2016), Castillo, P, H Vega, E Serrano and C Burga (2016).

Peruvian financial system structure⁵

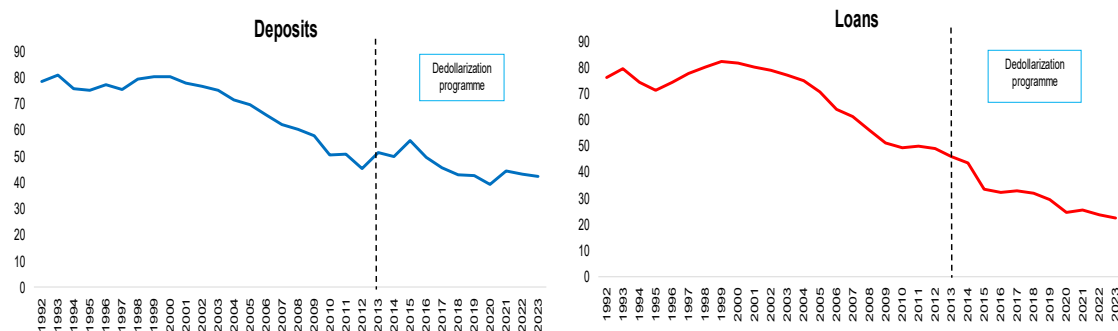
Graph 2



Sources: Superintendency of Banking, Insurance and Private Pension Fund Administrators.

Financial dollarisation – banks

Graph 3



Sources: Central Reserve Bank of Peru.

2. Structure of Peru's financial system

Total financing to the private sector has increased moderately over the last decade and credit from depository institutions remains the main funding source. The credit-to-GDP ratio augmented from 48% in 2011 to 57% in 2023, after

⁵ As of December 2023, the financial system is composed of 51 entities: 17 private banks, two state-owned banks, nine financial institutions, 12 municipal savings and loan banks (CMACs), five rural saving and loans associations (CRACs) and six credit entities.

peaking at 73% in 2020 driven by “Reactiva Perú” in response to the Covid-19 pandemic. Credit from depository institutions accounts for around three quarters of total financing, the share of external financing has varied between 17% and 27%, and funding from other financial sources (capital markets) has ranged between 7% and 10%.

Total financing to the private sector (as % of GDP and % share)

Table 1

	% GDP		% Share	
	2011	2023	2011	2023
I. Credit of depository corporations	35	42	73	74
Domestic currency	18	32	37	57
Foreign currency	17	10	11	5
Dolarization (%)	50	23	0	0
II. Credit of other financial corporations	4	4	9	7
Domestic currency	2	3	4	5
Foreign currency	2	1	2	1
Dolarization (%)	55	34	0	0
Of which:				
AFP's loans	3	1	6	2
Mutual fund's loans	0	0	1	0
Insurance companies' loans	1	2	2	3
III. External private indebtedness	8	11	17	19
Short-term	3	2	2	1
Medium and long-term	6	9	3	4
IV. TOTAL (I+II+III)	48	57	100	100
Domestic currency	20	35	41	61
Foreign currency	28	22	18	10
Dolarization (%)	59	39		

Total funding to the private sector includes the credit provided by depository institutions, direct external loans to businesses and the resources provided by other financial institutions such as mutual funds, insurance companies and private pension funds.

Source: Central Reserve Bank of Peru.

2.1 Depository Institutions

Credit extended by depository institutions has increased substantially in the last three decades, from 14.1% of GDP in 1989 to 31% of GDP in 1999, further escalating to 52% of GDP in 2020.

Credit from depository institutions has diversified, moving from predominantly short-term financing for the corporate sector to loans extended to households and micro, small and medium-sized enterprises (MSMEs). In 1995, 92% of the loan portfolio was directed towards funding business activities, with only 8% allocated to individuals and households (consumer loans 6% and mortgages 2%). However, by 2005, household financing had soared to 30% of loans, primarily due to the expansion of mortgage lending. By 2023, the share of all financial system loans to individuals and MSMEs accounted for 41% and 28%, respectively. This highlights a substantial rise in the share of loans extended to individuals, mainly due to significant growth in mortgage financing associated with increased per capita income and employment, enabling families to access formal credit. In contrast, corporates and large enterprises gained greater access to international capital markets and foreign banks.

Total credit to the private sector (% GDP and % share)

Table 2

	% GDP			% Share		
	2001	2011	2023	2001	2011	2023
Businesses	22	10	25	82	53	59
Corporate and large companies	21	3	13	79	16	31
Medium-sized enterprises	0	2	5	0	10	13
Small businesses and micro businesses	1	5	6	4	27	15
Households	5	8	17	18	47	41
Consumer	3	6	10	9	35	25
Car loans	0	0	0	0	1	1
Credit card	0	2	2	0	12	4
Rest	0	4	8	0	22	19
Mortgage	5	2	7	18	12	16
Total	27	18	42	100	100	100

Source: Central Reserve Bank of Peru.

The largest part of bank credit to businesses is allocated to trade, manufacturing and services industries. Between 2001 and 2023, services industries increased their share of bank credit, while industries in other sectors, such as mining, external financing and capital markets, have been displacing bank credit.

Bank credit to businesses (% share)

Table 3

	2001	2023
a. Trade	22,2	24,9
b. Manufacturing Industry	28,0	22,7
c. Services*	14,3	19,3
d. Real state, business activities and renting	7,5	11,2
e. Agriculture, livestock, hunting and forestry	4,0	5,8
f. Financial intermediation	3,9	4,6
g. Mining	7,9	4,5
h. Electricity, gas and water	4,1	3,7
i. Construction	3,6	2,5
j. Fishing	3,4	0,7
k. Public administration and defence	1,1	0,1
TOTAL - Bank Credit	100,0	100,0

*Includes transport, health, social, private household, hotels and restaurants, education and other activities and community services.

Source: Superintendency of Banking, Insurance and Private Pension Fund Administrators.

Reactiva Perú

In 2020, to mitigate the economic downturn resulting from quarantine measures and the looming threat of a recession, the Reactiva Perú programme launched government-guaranteed repurchase agreements (repos) to infuse liquidity into the market. This initiative bolstered businesses by replenishing working capital, with the aim of preserving credit market functionality and averting disruptions in payment flows. Resources were distributed through auctions, wherein financial entities proposing the lowest interest rates to their clients were granted access to the funds.

By the end of 2020, total credit operations under the programme amounted to 7.8% of GDP (PEN 6 billion) at historically low rates, reaching approximately 502,000 companies. The peak balance exceeded PEN 58 billion, and the year-end balance of PEN 56 billion reflected repayments by recipient companies in 2020. As of December 2023, the balance amounted PEN 6.4 billion (0.6% of GDP).

Balance – Reactiva Perú

Table A1

	Dec 2020	Dec 2021	Dec 2022	Dec 2023
Balance (PEN billion)	56.2	42.7	20.9	6.4
% GDP	7.8	4.9	2.2	0.6

Source: Central Reserve Bank of Peru.

2.2 Other financial institutions

The creation of a private pension system in 1993 was a key element in the development of the local capital market. The system, which was designed to replace the state-run social security system, introduced individual capitalisation accounts (CICs) managed by specialised private companies (AFPs). The latter enhanced formal sector savings and stimulated the development of the local capital market. Along with AFPs, mutual funds and insurance companies are also important institutional investors in Peru.

From 2020-2022, Congress-authorised pension fund withdrawals have impacted the local capital market. AFPs' portfolio value peaked at 22% of GDP in 2019 (PEN 173 billion) but decreased to 12% of GDP in 2023 (PEN 123 billion). During the pandemic (2020-2022), six extraordinary pension fund withdrawals, equivalent to 9.4% of GDP in 2022 (PEN 88.0 billion), were enacted by Congress and the Executive. Approximately 6.1 million affiliates withdrew funds between 2020 and 2022. In addition, between 2016 and 2022 there had been other withdrawals equivalent to 5.7% of GDP in 2022 (PEN 53 billion). In 2024, a seventh extraordinary pension fund withdrawal was approved.

Pension fund withdrawals (2016–22)

Table 4

Withdrawal process	Number of affiliates (thousands)	Withdrawals (PEN billions)	% GDP
Law N° 30425 (21 April 2016) / 95.5% Retirement	503	50	5.3
Law N° 30478 (29 June 2016)/ 25% Housing	117	3	0.4
Emergency Decree N° 34-2020 (31 March 2020)	1 935	3	0.3
Emergency Decree N° 38-2020 (14 April 2020)	1 306	2	0.2
Law N° 31017 (1 May 2020)	3 775	20	2.1
Law N° 31068 (18 November 2020)	1 257	9	1.0
Law N° 31192 (7 May 2021)	3 218	32	3.4
Law N° 31478 (21 May 2022)	3 133	22	2.3
TOTAL	6 133	141	15.0

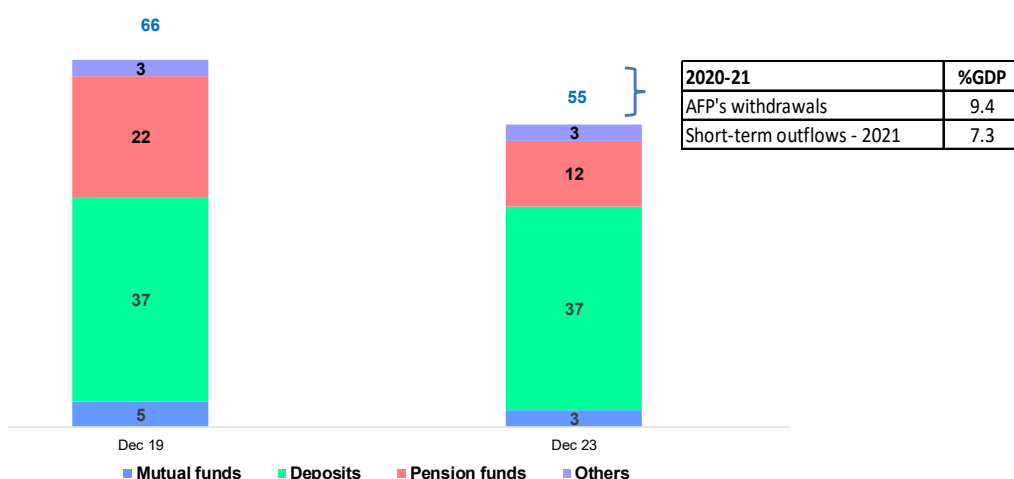
Source: Superintendency of Banking, Insurance and Private Pension Fund Administrators

The BCRP performed market operations to assist AFPs in accommodating the portfolio changes associated with pension fund withdrawals, with an aim to mitigate volatility in financial markets. In response to the withdrawals, AFPs managed liquidity by selling their more liquid assets, such as foreign investments and sovereign bonds. The BCRP performed repo operations with AFPs and provided a limited windows facility to conduct FX and government purchases.

The withdrawals from AFPs have significantly depleted financial savings in Peru. Between December 2019 and December 2023, total domestic savings plunged by 12 percentage points of GDP, of which 9.4% of GDP are explained by pension fund withdrawals. Additionally, political risk sentiment following the 2021 presidential election triggered a considerable short-term capital flight, with residents moving assets abroad, amounting to 7.3% of GDP.

Financial savings (% GDP)

Graph 4



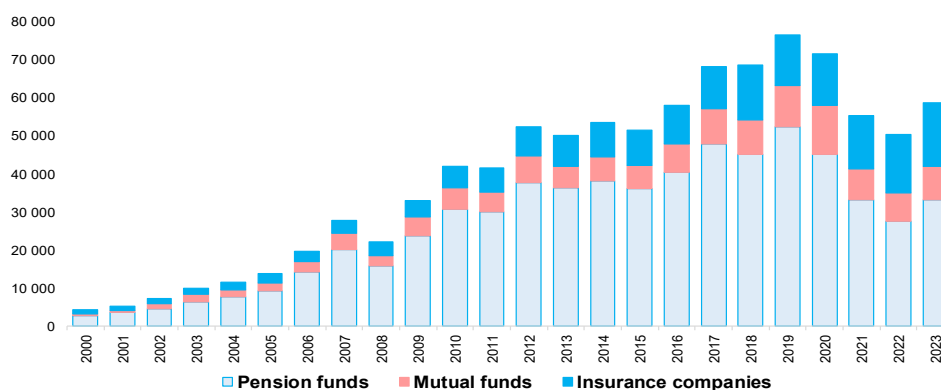
Sources: Superintendency of Banking, Insurance and Private Pension Fund Administrators; Central Reserve Bank of Peru.

Funding obtained by Peruvian companies through the domestic capital market, from institutional investors like AFPs, mutual funds and local insurance companies, rose from 4% to 6% of GDP between 2001 and 2020. Post-2020,

however, there was a reversal in this trend, related to the reduction of AFPs associated with the pension fund withdrawals.

Institutional investor assets (USD million)

Graph 5

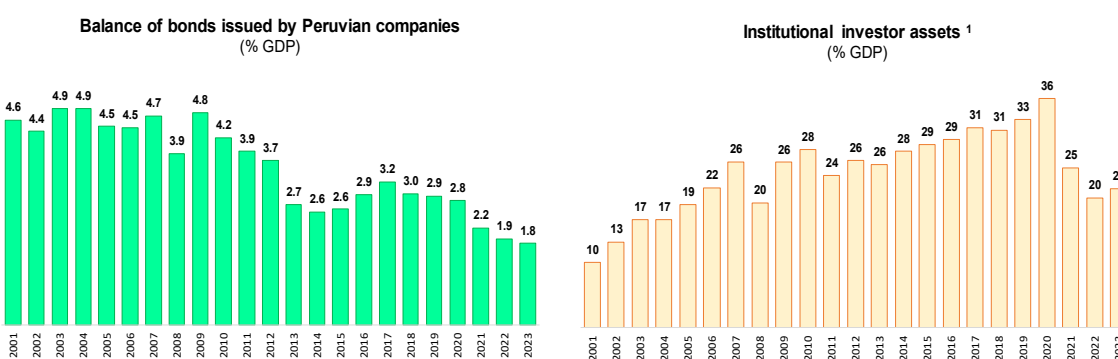


Source: Superintendency of Banking, Insurance and Private Pension Fund Administrators; Cavali.

Financing through the bond market experienced rapid growth over the last two decades, although it has stalled since the pandemic. The balance of bonds issued by Peruvian companies, covering both local and foreign markets, surged from USD 2.4 billion in 2000 to USD 23.2 billion in 2019, a ninefold increase. However, Peruvian companies' participation in the local capital market dwindled from 2020 onwards, with bond issuance volumes in local markets dropping from USD 1.7 billion in 2019 to a historic low of USD 0.5 billion in 2020. As of December 2023, the balance was USD 24.1 billion. On the international front, issuances have resumed only since the third quarter of 2023, post-pandemic, influenced by tightened financial conditions in international dollar markets and escalating yields of Peruvian sovereign bonds. In the local market, the issuance trend mirrored this decline, from USD 1.7 billion in 2019 to USD 1.0 billion in 2023, with a historic low of USD 0.5 billion also in 2020. The institutional investor portfolio grew from 10% to 33% of GDP between 2001 and 2019, then fell to 22% by 2023.

Private sector Peruvian bonds and institutional investors

Graph 6



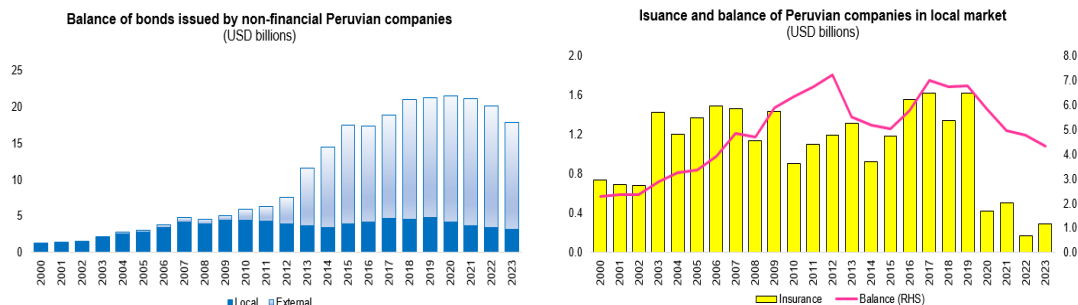
¹ Includes: Private pension funds, mutual funds and insurance companies.

Source: Superintendency of Securities Market and Superintendency of Banking, Insurance and Private Pension Fund Administrators

Private sector bond market

(amounts in USD billions and shares in %)

Graph 7



Source: Superintendency of Securities Market.

Mutual funds also faced a reduction in assets under management (AUM) and in the number of participants, coinciding with increased volatility in international financial markets due to pandemic-related uncertainties and later to higher local political risk. Notably, equity decreased from a peak of USD 50 billion in March 2021 to USD 33 billion in December 2023. This pattern is reminiscent of the trend seen in September 2008 during the Great Financial Crisis (GFC), although recovery in the current scenario has been faster.

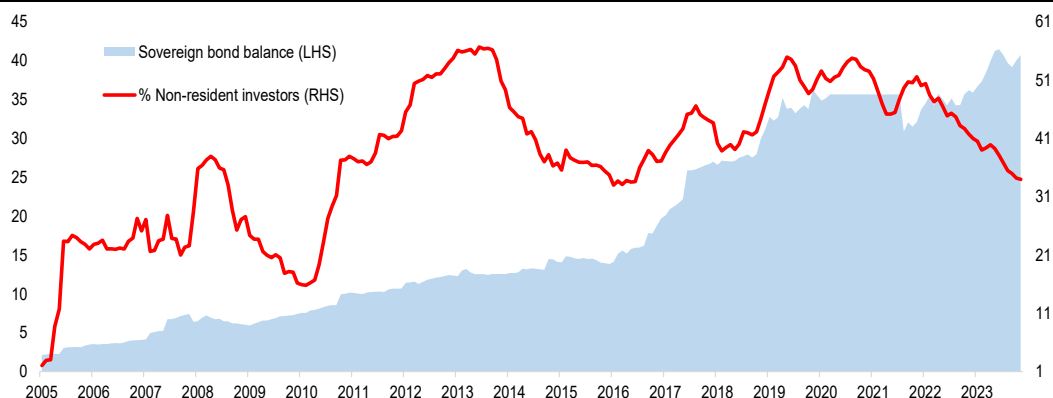
In contrast, insurance companies saw a significant increase in the size of their portfolio after the pandemic. The surge in their portfolio value from PEN 3.9 billion in 2000 to PEN 61.5 billion in 2023 is attributed to the post-pandemic recovery in economic activity, leading to an upward trend in their portfolio valuation.

Foreign investors have been key players in Peru's local capital and FX markets, especially in public treasury bonds (BTPs). Their involvement in BTP balances has grown over time, influenced by capital flow cycles and the incorporation of Peruvian bonds into the JPMorgan GBI-EM index in 2006. These investors typically hedge their BTP positions partly through non-deliverable forwards, contributing to the development of the FX derivatives market. However, since 2020, foreign participation in BTPs has declined, falling from 50% in February 2020 to 34% in December 2023. This trend is consistent with patterns in other Latin American countries. In the past two years, local banks have become the primary BTP purchasers, while AFPs and non-residents have been sellers, indicating a shift in market dynamics and investment patterns within the local capital market.

Peruvian sovereign bonds

(amounts in USD billions and shares in %)

Graph 8



Source: Ministry of Economy and Finance.

2.3 State-owned and development banks

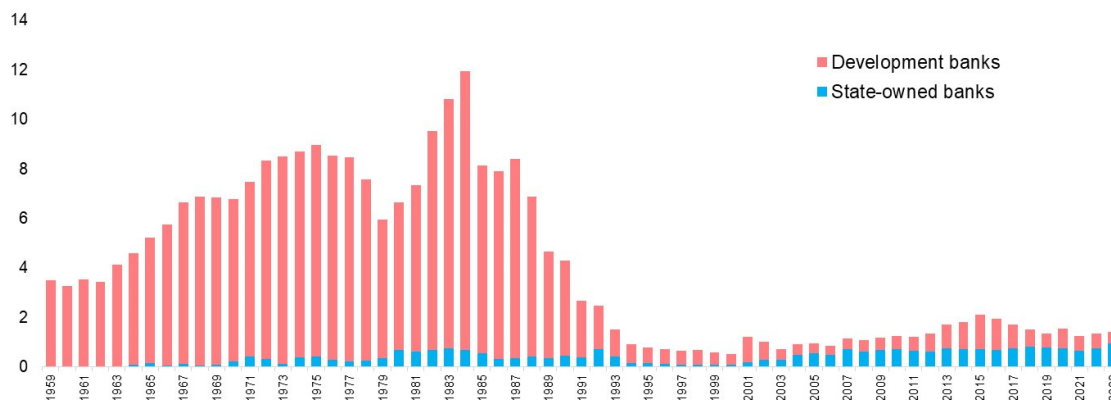
The presence of state-owned and development banks is much smaller than in the 1970s and 1980s. Credit provided by these institutions averaged 0.6% of GDP in the last two decades, in contrast with 12% in 1984 during the financial repression period. Peru's Constitution stipulates that state-run business activities, whether direct or indirect, are authorised by law only when deemed of significant public interest or national convenience.

The public financial sector includes four key institutions: a sole state-owned bank, Banco de la Nación (BN); and three development banks, COFIDE, Agrobanco and Fondo Mivivienda. BN focuses on complementing, rather than competing with, commercial banks. BN offers services to public entities, enhances banking accessibility and promotes financial inclusion. Besides managing public funds, it provides various financial services to public sector employees, including savings and chequing accounts, and loan facilities. BN also plays a crucial role in implementing social and economic assistance programmes, distributing subsidies and benefits to vulnerable segments. COFIDE is a second-tier financial entity focused on promoting development in economic sectors such as manufacturing, commerce, agriculture and infrastructure. COFIDE manages funds from several government support programmes targeted at MSMEs, including those implemented during the Covid-19 pandemic such as the *Reactiva Perú* and *Fondo de Apoyo Empresarial* programs. Agrobanco finances projects in the agricultural sector. Lastly, Fondo Mivivienda focuses on facilitating access to housing among the population. In 2023, domestic credit provided by BN was 1.2% of GDP, while loans from development banks account for 0.5% of GDP.

Due to their operational scale and role in the economy, neither BN nor the development banks pose direct competition to the private sector. However, they contribute to long-term balanced growth by financing MSMEs and fostering financial inclusion through the payments system.

Credit by state-owned banks and development banks (% of GDP)

Graph 9



Source: Central Reserve Bank of Peru. Since 2001 it includes COFIDE, Fondo MiVivienda and Banco Agropecuario.

Box B

The de-dollarisation process

The marked decrease in loan and deposit dollarisation since 2002 has been a key feature of Peru's financial system. The impact of hyperinflation during the 1980s and early 1990s continued to influence economic behaviour in the following years, resulting in persistently high financial dollarisation. The de-dollarisation process observed since then can be attributed to a combination of factors, such as the implementation of a set of successful macroeconomic stabilisation policies and the de-dollarisation programme implemented since 2013. Moreover, the adoption of inflation targeting by the BCRP in 2002 played a crucial role in economic stabilisation. This strategic shift contributed significantly to anchoring inflation expectations, ensuring a stable floating exchange rate with minimal fluctuations and accumulating significant international reserves.

In 2013, the BCRP launched a programme aimed at accelerating credit de-dollarisation to reduce risks from sudden depreciation for FX-indebted firms and households. Along these lines, in 2013 the BCRP established additional RRRs on FX liabilities aimed at: (i) moderating the expansion of USD credit and (ii) encouraging a shift from USD- to PEN-denominated debt. These additional RRRs were applied according to the evolution of mortgage and car loans and total USD credit. They became effective when financial entities failed to reach predetermined targets for FX loans established by the BCRP. They were intended to align incentives for financial entities by favouring domestic currency loans and facilitating coordination among financial entities seeking to de-dollarise credit, challenging traditional lending practices and addressing the mistaken belief that USD loans carry lower risk. These RRRs made USD credit more expensive for financial institutions, thereby breaking inertial credit practices determined by habit patterns or by borrowers' mistaken perception that USD loans carry a lower credit exchange risk.

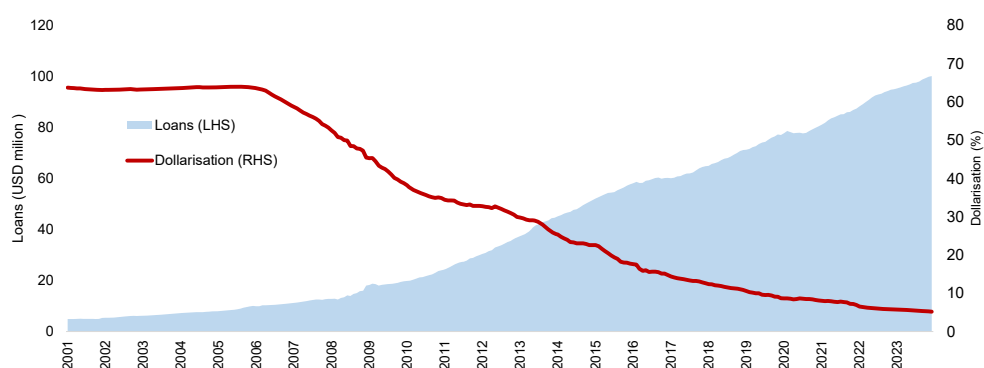
These measures contributed to reducing dollarisation across all credit categories. Total credit dollarisation fell from 49% in September 2013 to 23% in December 2023. During the same period, household credit dollarisation declined significantly. Mortgage and car loan dollarisation fell from 49% to 8% and from 82% to 10%, respectively, as of December 2023. This remarkable shift was also influenced by the government housing financing programme, MiVivienda, encouraging loans in domestic currency, and by the efforts by Peru's financial supervisory authority (SBS) to monitor FX credit risk, particularly by the end of 2012. Regulatory actions compelled financial institutions to significantly increase their capital reserves for FX mortgage loans.

Several studies – including Castillo et al (2016), Infante (2018) and Contreras et al (2019) – assess the impact of the BCRP's de-dollarisation measures. These works calculate the decline in credit dollarisation at 6–14 percentage points (isolating the effect of other factors such as exchange risk variations) and conclude that the de-dollarisation programme contributed significantly to reinforcing financial stability and the transmission channel of monetary policy.

These macroprudential measures are currently in force, but since the dollarisation rate has decreased significantly, their marginal contribution is lower.

Mortgage loans

Graph B1



Source: Superintendency of Banking, Insurance and Private Pension Fund Administrators

Dollarisation of credit to private sector (%)¹

Table B1

	Dec 01	Sep 13 (i)	Dec 23 (ii)	Gap (ii-i)
Households	68	29	6	-23
Consumer	44	13	5	-8
Car loans		82	10	-72
Credit card		10	12	2
Rest		8	4	-4
Mortgage	95	49	8	-41
Firms	82	59	35	-24
Corporate		70	53	-16
Large companies		21	29	8
Small businesses and micro businesses		8	3	-6
TOTAL	79	49	23	-26

¹ The balance in dollars is valued at the exchange rate as of December 2023. Does not include loans made by banks' branches of the local banks abroad.

Source: Central Reserve Bank of Peru.

3. Microfinance

The microfinance segment in Peru has experienced rapid development in recent years. This progress has been supported by a favourable regulatory framework, including reasonable capital requirements, low entry barriers and supervision by the SBS. The inception of microfinance institutions began in 1983 with the creation of CMACs to foster fair and decentralised growth. However, the severe crisis of the late 1980s resulted in the disappearance of several institutions focused on microfinance, including CRACs, mutual funds, financial start-ups and development banks.

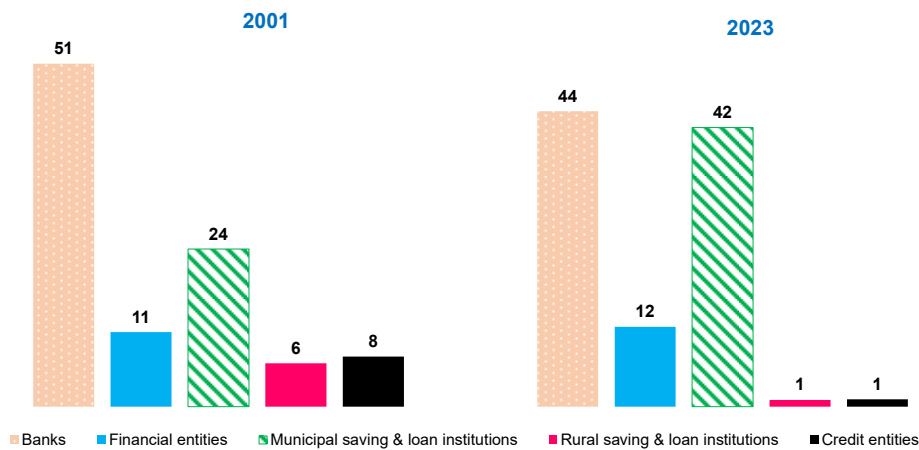
As the existing banks failed to adequately serve rural and urban micro enterprises across Peru, specialised private entities began to emerge in the mid-1990s. In 1992, CRACs were established, primarily targeting the agricultural sector. These entities

partially filled the gap left by the collapse of the state-run Agricultural Bank (*Banco Agrario*), which was burdened with a substantial non-performing loan portfolio. Over time, CRACs gradually diversified the range of services they offered to encompass commercial credit lines and support for the micro and small enterprise (MSE) segment. In August 1997, micro credit was defined as a new loan category. Additionally, this period saw the emergence of MSE development companies (EDPYMEs), aimed at promoting institutions engaged in microfinance.

As of December 2023, the microfinance segment⁶ in Peru comprised 25 institutions: one bank, five financial entities (*empresas financieras*), 12 CMACs, including the Municipal Popular Credit Bank of Lima, five CRACs and two credit institutions (previously named EDPYMEs). MSE credit balances have experienced significant growth. The MSE loan-to-GDP ratio increased from 1% in 2001 to 6% in 2023. Non-bank financial intermediaries have played a key role in extending credit to this segment, increasing their share from 49% in 2001 to 56% in 2023 (from 24% to 47% for CMACs).

Microbusinesses loans (% share)

Graph 10



Source: Superintendency of Banking, Insurance and Private Pension Fund Administrators.

4. Financial inclusion, new digital technologies and retail payments

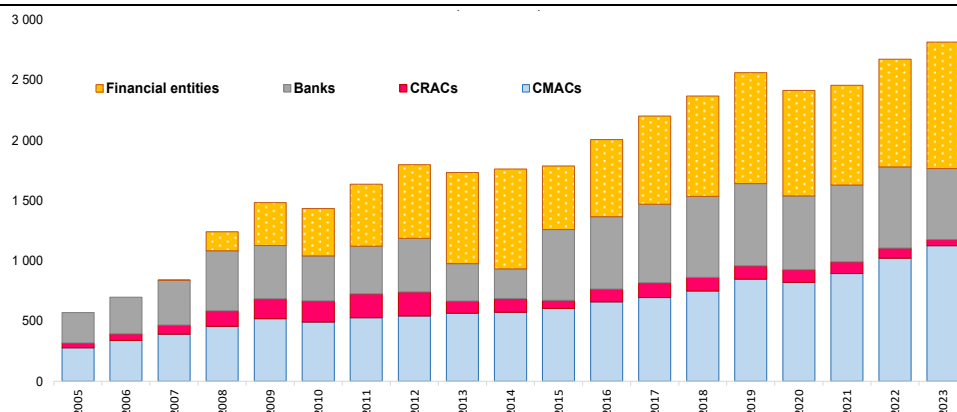
The number of micro business debtors has increased significantly over the last two decades. The number of debtors increased from 2.4 million in 2005 to 8.0 million in 2023. Nonetheless, a considerable segment of the population remains excluded from the formal financial system. Peru exhibits a high informal economy, estimated at around 70%, according to the International Labour Organization, offering potential for further growth and development in the microfinance sector. Technological advancements can play a crucial role in promoting microfinance by facilitating cost-

⁶ Financial institutions with more than 50% of their portfolio allocated to loans extended to micro and small enterprises.

effective transactions and improving access to financial services, particularly for individuals residing in remote areas.

Number of debtors – micro businesses (thousands)

Graph 11



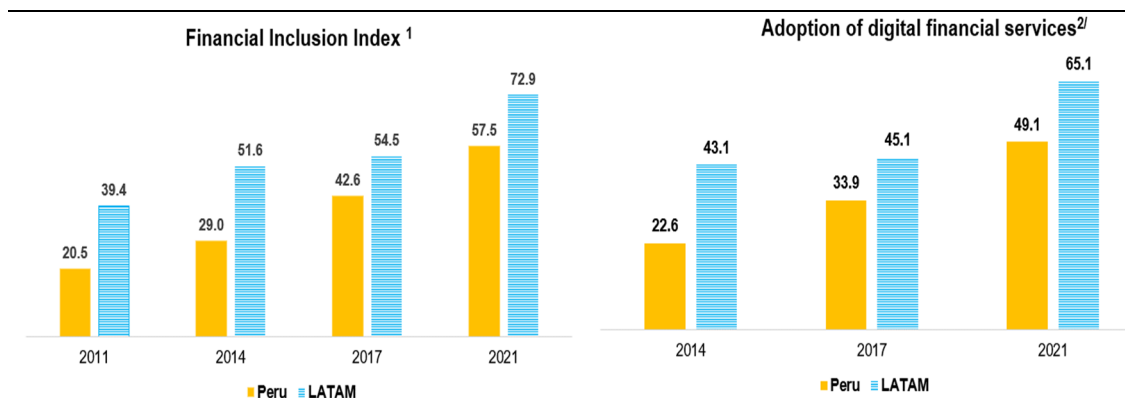
Source: Superintendency of Banking, Insurance and Private Pension Fund Administrators.

Financial inclusion has gradually improved in Peru over the last 20 years.

The number of debtors has grown from 1.4 million in 2001 to 8.0 million in 2023. These market participants previously lacked access to credit or encountered significantly higher interest rates in informal credit markets. Between 2009 and 2019, the number of individuals with direct access to financial system loans increased by approximately 3.2 million, with 665,000 belonging to the two poorest quintiles, showing the highest average annual growth rates. According to the SBS, the average interest rate for a new low-income credit applicant decreases by half after building a two-year track record.

At the regional level, the Peruvian financial system still lags behind the Latin American average in terms of various metrics (see Appendix). According to the World Bank, Peru's financial index increased from 42.6% in 2017 to 57.5% in 2021, while the adoption of digital services rose from 33.9% to 49.14% during the same period. However, both metrics remain below the Latin American average.

The adoption of digital payments is outpacing traditional banking penetration. In the aftermath of the pandemic, there was a notable uptick in the percentage of adults with bank accounts, rising from 42% to 58% between 2020 and 2023. Amid the health crisis and mobility restrictions, many individuals recognised the necessity of utilising the financial system for saving and conducting digital transactions. Consequently, the use of digital payments surged from 29 to 266 transactions per year per capita between 2015 and 2023.



¹ Percentage of individuals aged 15 and older who report having an account at a bank or other financial institution or personally using a mobile money service. ² Digital payments made or received: the percentage of adults, aged 15 and older, who report using mobile money, a debit or credit card, or a mobile phone to make a payment from an account, or who report having used the internet to pay bills or purchase something online or in-store in the past year. This includes adults who report paying bills, sending or receiving remittances, receiving payments for agricultural products, receiving government transfers, receiving wages or receiving a pension from the public sector directly to or from a financial institution account or who report paying bills or sending remittances directly from a financial institution account or through a mobile money account in the past year.

Source: World Bank.

In recent years several trends associated with the adoption of new technologies are reshaping the landscape of financial services provision. Among these trends are the expansion of the fintech sector, the rapid pace of digitalisation and the potential advent of digital banks, along with the prospect of implementing open banking. These trends are poised to amplify the array of services available, potentially driving deeper banking penetration across diverse demographics and intensifying competition within the financial ecosystem.

Internet access has improved over the years, a key factor for digital transformation in financial services for both fintech and traditional financial institutions. According to the National Institute of Statistics and Informatics (INEI), during the first quarter of 2023, the Lima Metropolitan Area displayed the highest rate of households with internet access, at 78%, while other urban areas recorded 59%. However, rural areas lagged at 19%. Concurrently, mobile internet usage has been consistently rising; statistics from the telecom supervisor (OSIPTEL) indicate a striking 92% of the population utilises their cell phones to connect to the internet (77% in rural areas as of 2022).

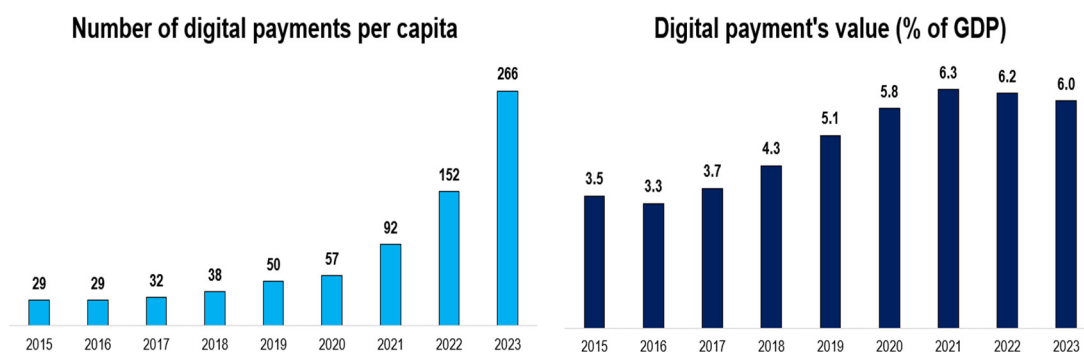
The growing trend of digital payments initiated during the pandemic continues. This evolution coincides with innovations in retail payment methods, modernisation of key payment infrastructures, and the efficiency and security promoted by BCRP regulations and oversight. However, challenges such as low financial inclusion, limited interoperability among payment systems and competition issues hinder further progress.

Payment digitalisation has grown exponentially. The number of payments per capita rose from 29 in 2015 to 266 in 2023 and the value of digital payments from 3.5% to 6.0% of GDP in the same period. More recently, the ratio of the value of digital payments as percentage of GDP seems to have remained stable in 2023, although the number of payments per capita increased, suggesting an extensive rather than an

intensive increase. This surge in digital payments has been primarily propelled by small-value transactions, particularly facilitated through digital wallets and instant transfers. With increasing interoperability, these methods are emerging as the preferred instruments for instantaneous payments⁷.

Digital payments

Graph 13

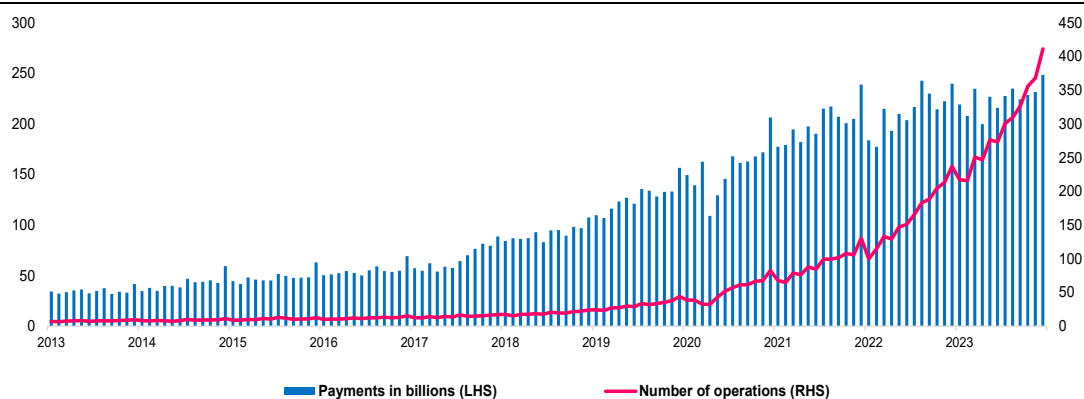


Source: Central Reserve Bank of Peru.

Virtual banking

(Payments in USD billions and number in millions)

Graph 14



Source: Central Reserve Bank of Peru.

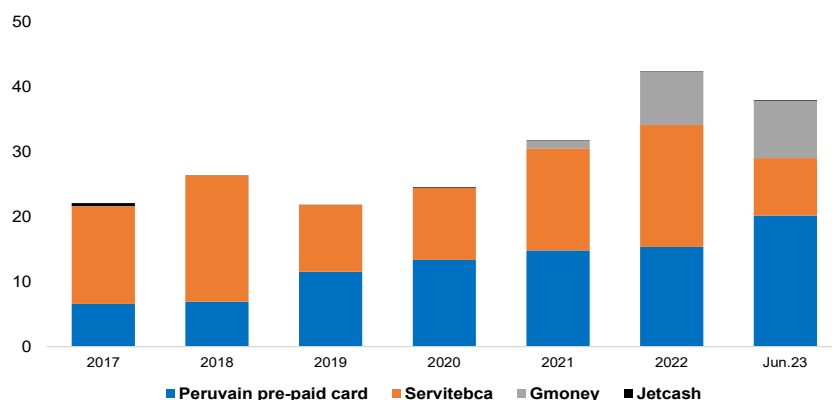
The role of electronic money in the payment system is also growing significantly. In 2023, the BCRP changed the regulation to allow electronic money issuing companies (EEDs) to access the real-time gross settlement system (RTGS) and use the services of the Automated Clearing House (ACH) specially for immediate transfers, and to implement the interoperability of their payment services with other financial entities. Thus, the volume of electronic money issued by EEDs has grown from around USD 20 million in 2017 to USD 49 million by December 2023. This initiative marks a significant step in enhancing interoperability between electronic

⁷ Central Reserve Bank of Peru (2023): *Financial Stability Report*, Nov.

money and traditional bank accounts. EDEs' involvement is expected to accelerate digital payment adoption, particularly among the unbanked population, and encourage competition among immediate payment service providers.

Electronic money (PEN millions)

Graph 15

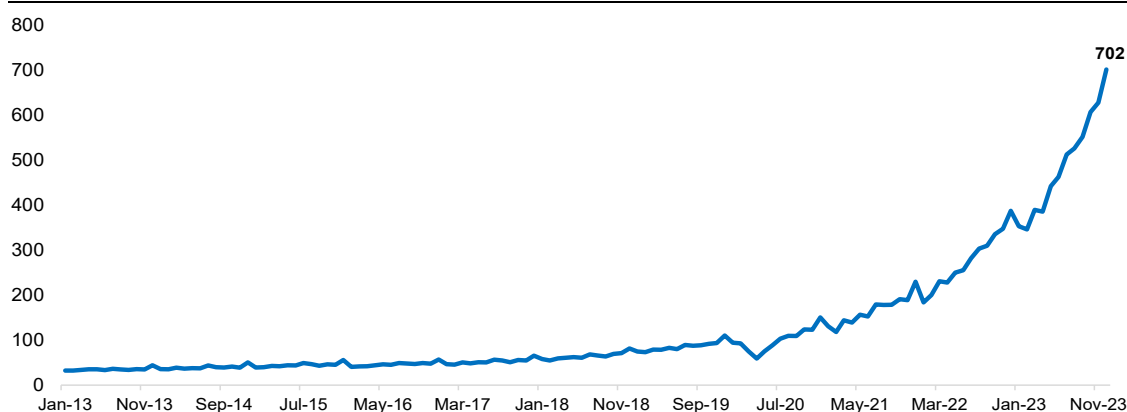


Source: Superintendency of Banking, Insurance and Private Pension Fund Administrators.

The number of daily digital transactions has experienced exponential growth since 2023 propelled by the widespread adoption of digital wallets and bolstered by enhanced interoperability. In September 2022, the BCRP started a strategy on the interoperability of retail payments, aimed at increasing digital payments. This interoperability empowers users to seamlessly transfer funds across various wallets and bank accounts, utilising either the recipient's cell phone number or the QR code from any issuer. Consequently, in 2023 the Digital Payments Index (DPI) experienced a remarkable 81% surge in the number of transactions, soaring to 702 million monthly operations, mainly due to greater use of digital wallets.

Peruvian Digital Payment Index – monthly number of operations (in millions)

Graph 16



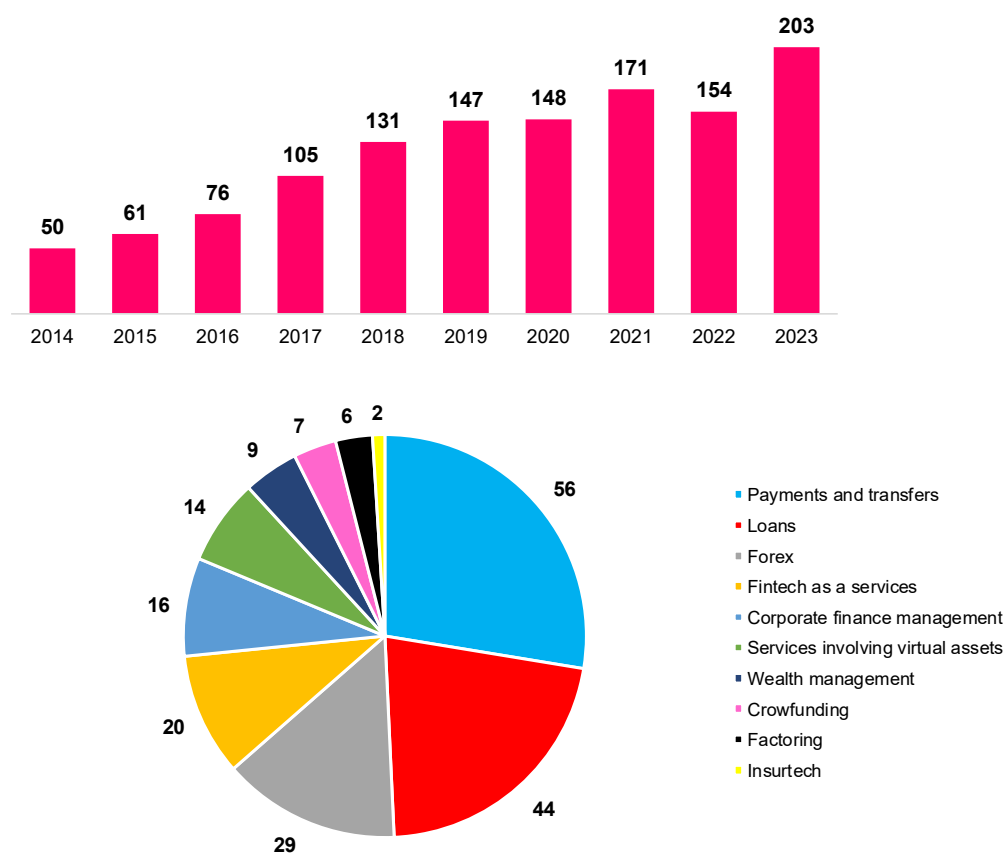
Source: Central Reserve Bank of Peru.

The fintech sector has also seen rapid growth in the last decade, although it is still small in comparison to other countries in the region. The number of fintech companies expanded from 50 in 2014 to 203 by October 2023, although it

remains small compared with other Latin American countries⁸ (Argentina 343, Brazil 771, Chile 300, Colombia 369 and Mexico 773). The number of fintech companies specialising in payments and transfers surged to 56, surpassing those focusing on loans (44). Currently, Peru's leading fintech companies specialise in payments and transfers, loans, and currency exchange (exchange houses). This expansion has propelled financial inclusion, extending accessible and affordable financial products to underserved populations. The pandemic further boosted this trend, leading to an increase in low-value payments and a shift towards more user-friendly payment instruments offering immediacy, 24/7 availability and low or zero cost. The market served by fintech firms predominantly targets the unbanked population (29% as of 2021) and banked SMEs (21% as of 2021), particularly in terms of revenue volume.

Fintechs in Peru

Graph 17



Source: EY Peru's Fintech Index 2023. October 2023.

⁸ <https://www.finnovista.com/que-hacemos/insights/radares/>

5. Challenges to long-term growth and financial intermediation

Several recent developments and policy measures are expected to have significant implications for long-term growth and financial intermediation in Peru.

Pension fund withdrawals: Previously, AFPs demanded about 30% of long-term bonds. Following recent withdrawals, their diminished presence has notably impacted long-term financing in domestic currency for both the private and public sectors, as well as mortgage rates.

AFPs play a crucial role in channelling resources into strategic sectors and investment projects. The reduction in their portfolios could constrain investment opportunities, potentially hampering economic recovery. This impact is evident in higher sovereign bond yields and increased mortgage rates.

Interest rate caps: In December 2020, Congress enacted Law 31143 (Law for the Protection of Financial Service Consumers Against Usury), which sets interest rate limits for consumer and SME loans. The BCRP, tasked with enforcing these limits, set the caps to minimise their impact on financial inclusion.⁹ These caps have reportedly excluded¹⁰ about 226,000 clients from the financial system during the first nine months of implementation, with 127,000 unable to access credit, thereby affecting financial inclusion efforts, as estimated by the BCRP. Additionally, according to the SBS, the number of debtors incorporated into the financial system has been decreasing, with around 33,000 fewer individuals included each year.

Technological advancements and fintech firms: Technological advancements and the emergence of fintech companies are transforming Peru's financial services sector. While enhancing efficiency and expanding financial inclusion, these developments also pose challenges to traditional banking models.

Foreign capital's role in economic development: Foreign capital significantly contributes to economic growth by stimulating job creation, transferring technology, enhancing production efficiency through foreign direct investment and opening international markets for local companies, thereby boosting exports. The presence of foreign companies also fosters local human capital development by providing training and education. Additionally, foreign capital injections, whether through direct or portfolio investment, help bolster financial stability by diversifying investment sources and providing additional financing avenues.

However, overreliance on foreign short-term capital and portfolio investments entails risks. Capital flows are volatile and can be affected by global economic conditions. Short-term foreign portfolio flows can lead to economic imbalances and heighten vulnerabilities during international crises. Thus, balancing and managing reliance on foreign capital is crucial for sustainable growth. Diversifying investment sources and attracting varied foreign investments can mitigate these risks. For

⁹ The maximum semiannual interest rate for consumer and SME loans is set at twice the system's average consumer loan rate.

¹⁰ Central Reserve Bank of Peru (2022): *Financial Stability Report*, May.

instance, the 1998¹¹ capital flow reversal¹² demonstrated that reliance on volatile capital flows leads to financial distress. Therefore, current macroprudential measures, such as reserve requirement management and limits on bank positions, are essential to prevent financial disturbances and promote stability.

Competition for deposits between local banks and offshore institutions: In stable times, residents usually repatriate deposits from offshore to local banks. In contrast, the 2021 political crisis triggered the largest outflow of residents' short-term capital, equivalent to 7.3% of GDP. Political stability is a key element for instilling confidence among the population and preventing capital reversals.

Factors influencing potential GDP growth: Potential GDP growth is determined by the accumulation of productive factors – labour and capital – and their productivity. The latter, which refers to the ability to produce more with these factors, depends on the efficiency of combining labour and capital. This efficiency is influenced by technological, regulatory and institutional factors. The 2016–22 slowdown is attributed to a lower contribution from capital and reduced total factor productivity (TFP). There is no clear evidence linking this slowdown to changes in the sectoral allocation of credit.

According to BCRP estimates, Peru's highest potential GDP growth rates were between 2002 and 2008, averaging 6.0% annually during the commodity price "supercycle." This trend declined to an average of 5.3% annually in 2009–15, then further to 2.3% in 2016–22.

Regulatory changes: Regulations aimed at strengthening the financial system could influence capital allocation essential for long-term growth. Such changes might affect the direction and flow of capital within the economy, impacting investment decisions and financing for long-term growth initiatives.

The following strategies could address these challenges to Peru's financial system.

Digital payments: Despite recent progress in payment digitalisation, 86% of transactions in Peru are still conducted in cash, reflecting limited financial inclusion. This is due to demand factors (high informality, low incomes, distrust in the payments system, limited financial inclusion) and supply factors (financial system concentration, lack of retail payment interoperability, limited competition, insufficient access points). Financial inclusion remains low, with about 52% of the population lacking access to digital payments, according to the 2021 National Household Survey (ENAHU).

The development of digital payments is hindered by closed payment schemes and the emergence of non-bank wallet schemes. Limited interoperability between deposit and electronic money accounts further restricts development. Some microfinance entities, despite having access to the RTGS system, do not participate in retail payment infrastructures.

To promote payment digitalisation, the BCRP has been focusing on financial inclusion, strengthening payment systems and enhancing competition.

¹¹ Velarde & Rodríguez (1999).

¹² Between September 1998 and December 1998, USD 885 million were lost in short-term credit lines from banks. Moreover, short-term loans to the non-financial sector decreased by USD 432 million in the fourth quarter of 1998.

Initiatives include assessing a central bank digital currency (CBDC), analysing open banking benefits and promoting interoperability. In October 2022, the BCRP issued the Payment Services Interoperability Regulation to expedite digital payment adoption. Additionally, a strategy launched in September 2022 focuses on interoperability of fiat accounts, QR code standardisation, electronic money interoperability, and including new participants like fintech and big tech companies.

In March 2023, the BCRP published a document entitled “CBDC: Promoting Digital Payments in Peru”.¹³ This publication focuses on furthering discussions about the advancement of digital payments and considering the potential introduction of a CBDC to stimulate development and promote financial inclusion. The BCRP has completed a research phase that will lay the groundwork for subsequent stages, including proof-of-concept, prototype development, pilot projects and eventual production, in collaboration with private sector partners and relevant authorities. The aim is to address a wide range of payment needs, encompassing consumer-to-business (C2B) transactions (eg payments for services, products or utilities across different regions or cities), as well as business-to-business (B2B) and business-to-small merchant (B2S) transactions.

In November 2023, the Regulation for Clearing and Settlement Service Companies was amended to grant access to the electronic clearing house (CCE) services for additional financial institutions, such as saving and credit cooperatives, including immediate transfers.

Capital markets enhancement: Despite witnessing positive evolution over time, the Peruvian capital market is characterised by low depth and liquidity compared to its counterparts in the region. Several factors might be impeding the development of the capital market, including lack of financial literacy, few stock market users, public distrust, and excessive market concentration marked by the presence of financial conglomerates, conflict-of-interest issues and a concentrated demand that restricts proper price formation. Consequently, larger corporate enterprises tend to seek access to more competitive international markets.

Labour informality and financial inclusion: According to Lahura (2016), by December 2014, there were 1.8 million informal workers who had at least obtained one credit line from a financial institution. This finding suggests that informality has not been a firm barrier to accessing credit in the financial system, although financial institutions apply a high credit risk to this segment. Additionally, the institutions with the highest rates of informality in terms of the number of clients and credit balances were CRACs, microfinance institutions and financial companies. Moreover, the distribution of informal clients and their credit balances shows that informality was concentrated in banks, financial institutions and CMACs, through credits for MSEs, consumer loans and credit cards.

In the same line, Aurazo and Gasmi’s (2022) study highlights the relationship between labour informality and financial inclusion in Peru. Formalising labour positively impacts bank instrument ownership and formal financial system participation. Reducing labour informality increases financial inclusion, aiding economic development, poverty alleviation, digital payment system transformations and, therefore, monetary policy transmission to interest rates. The study shows that

¹³ <https://www.bcrp.gob.pe/docs/Sistema-Pagos/cbdc/cbdc-presentacion.pdf>

labour informality reduces the likelihood of entering the formal financial system by 8 percentage points and increases the chance of exiting by 9.3 percentage points. Conversely, individuals with formal jobs are 9 percentage points more likely to access banking services.

6. Concluding Remarks

The Peruvian financial system has undergone significant transformations, including a transition towards increased private sector financing, shifts in dollarisation and considerable growth in financial sector assets, thereby enhancing its depth and resilience. Sound monetary policies have countered the effects of financial crises since the Russian crisis impacted the Peruvian economy in 1998. Additionally, the deceleration in potential GDP growth, attributed to diminished contributions from capital and TFP, underscores the need for strategies focused on enhancing productivity and fostering sustainable, long-term growth.

Although still relatively low, financial inclusion in Peru is on an upward trend, spurred by the adoption of new technologies and the penetration of digital payments. Technological advancements and the emergence of fintech companies have significantly contributed to financial inclusion and innovation, promising greater accessibility to financial services and products.

The BCRP's strategy to promote digital payments is forward-looking and comprehensive, aiming to achieve interoperability across all payment services and infrastructures. This initiative began with the enactment of interoperability regulation. The BCRP maintains ongoing communication with regulated entities to facilitate compliance with the norms in place. Future phases of the strategy involve expanding the regulatory framework and incorporating new participants into the payment ecosystem, including EEDs, fintech firms and big tech companies. The next phase will include introducing new regulatory changes and, depending on market developments, might involve the BCRP developing its own digital payment platform.

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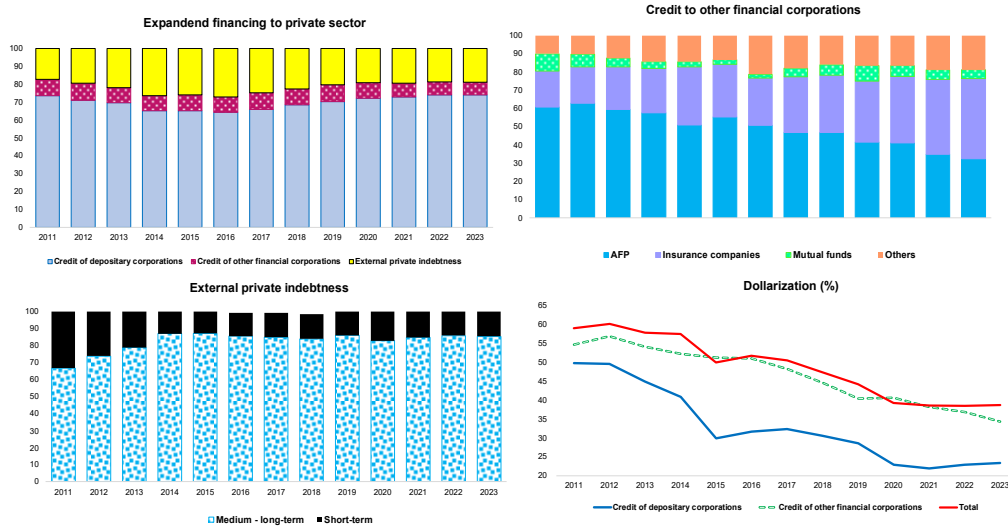
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Appendix

Non-financial private funding sources

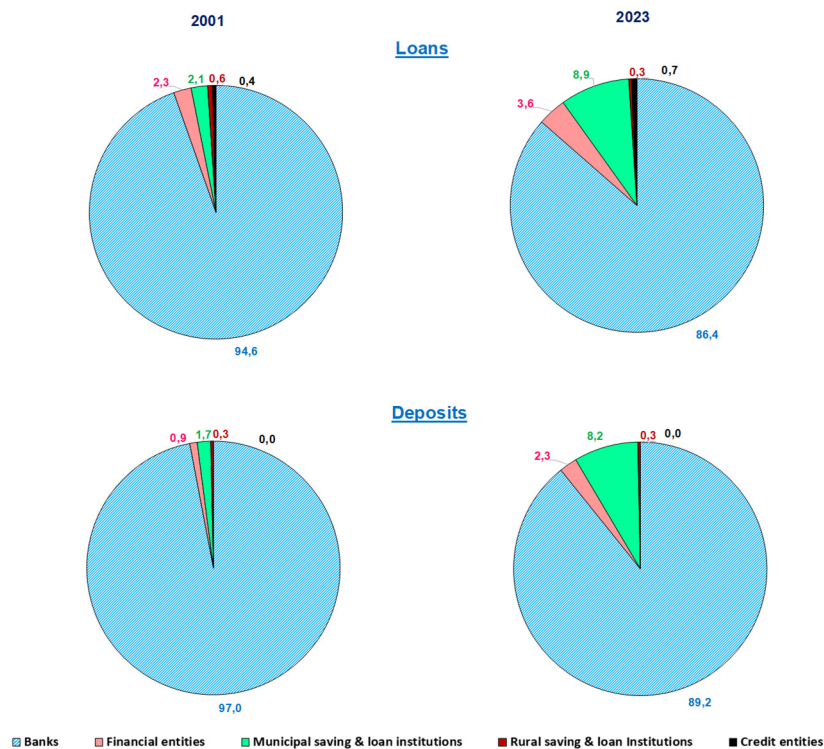
Graph A1



Source: Central Reserve Bank of Peru.

Financial system's market participation (in per cent)

Graph A2

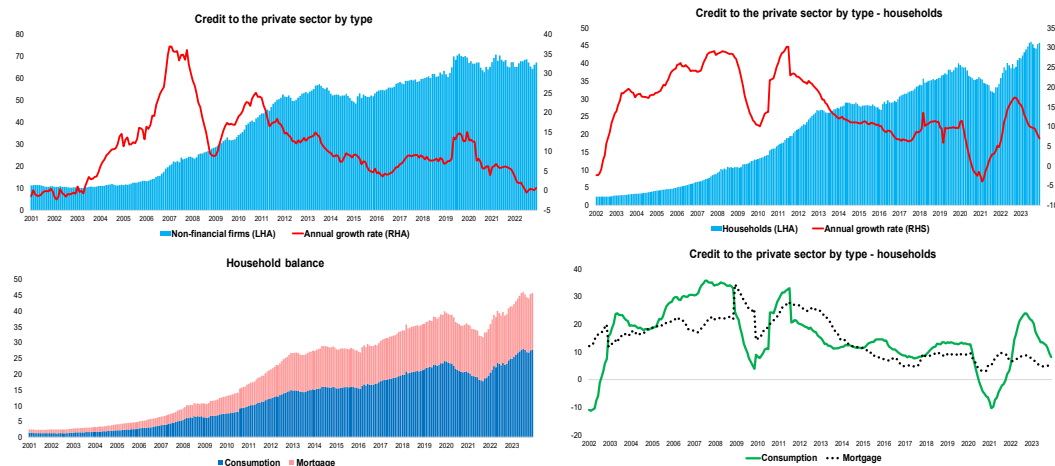


Source: Superintendency of Banking, Insurance and Private Pension Fund Administrators.

Credit to private sector

(USD billion)

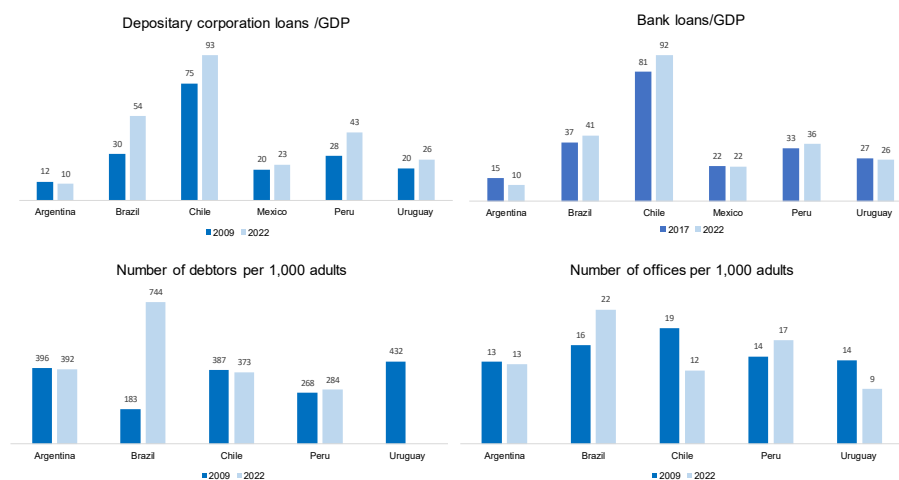
Graph A3



Source: Central Reserve Bank of Peru.

Financial inclusion

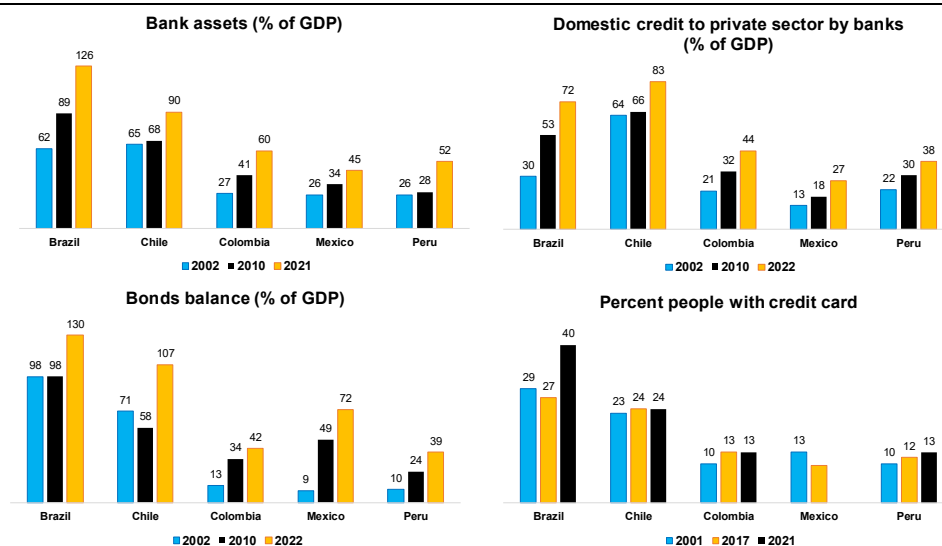
Graph A4



Source: Financial Access Survey (2009, 2022).

Latin American financial market size

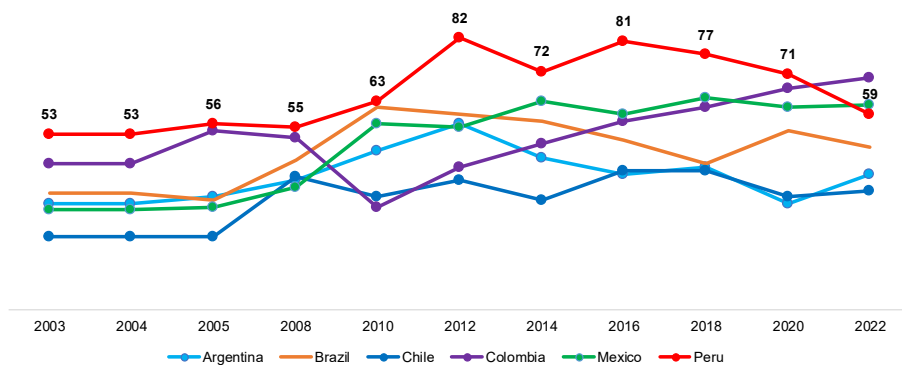
Graph A5



Source: Bank for International Settlements; World Bank.

E-Government Development Index (EGDI)

Graph A6



The EGDI is a composite measure of three important dimensions of e-government, namely provision of online services, telecommunication connectivity and human capacity. The index is based on a comprehensive survey of the online presence of all 193 United Nations member states. The survey assesses national websites and how e-government policies and strategies are applied in general and in specific sectors for delivery of essential services. The assessment rates the e-government performance of countries relative to one another as opposed to being an absolute measurement. The results are tabulated and combined with a set of indicators embodying a country's capacity to participate in the information society, without which e-government development efforts are of limited immediate use.

Source: United Nations

Credicorp Financial Inclusion Index

Graph A7

	Global		Access		Use		Perceived quality	
	2022	2023	2022	2023	2022	2023	2022	2023
Argentina	49.0	53.0	56.1	61.1	46.8	49.1	65.5	68.2
Chile	52.3	52.5	52.7	53.9	38.3	42.8	69.3	67.1
Panama	54.6	52.0	54.5	52.3	41.7	35.1	58.4	63.6
Ecuador	48.9	49.6	50.5	49.5	30.8	31.2	62.0	62.1
Colombia	44.7	45.6	47.0	48.6	26.5	26.5	55.9	57.6
Peru	39.8	43.3	41.5	46.5	25.2	26.3	55.5	56.2
Mexico	41.5	41.7	42.4	45.3	22.0	25.9	52.7	55.5
Bolivia	38.3	40.4	39.5	35.1	19.0	20.5	52.6	55.1

Source: Credicorp.

Topic: The changing nature of the financial system: implications for resilience and long-term growth in emerging market economies (EMEs)¹

Bangko Sentral ng Pilipinas

EME financial systems: what has changed?

1. How have EME financial systems changed in recent years? How is the relative importance of bank intermediation and capital markets shifting? How important are non-bank financial intermediaries (NBFIs) in EMEs and what is driving their expansion? What are the major changes in the domestic and foreign investor base? How did the Covid-19 pandemic shape these developments?

Significant changes in the Philippine financial system:

- **The Philippine financial system has been dominated by banks over the years.** As of end-September 2023, the banking system comprised 82.8% of the total resources of the Philippine financial system. The consolidation in the banking system has also paved the way for a leaner and stronger network amid digital transformation, supportive of the growing bank operations. Meanwhile, the liberalisation of the rules governing entry of foreign banks under Republic Act (RA) No 10641 in 2014 increased the number of foreign banks operating in the Philippines.
- **Banks remain the pillar of strength of the Philippine economy with their continued growth in assets and deposits, accompanied by a strong capital position, adequate liquidity buffers and ample loan loss reserves.** To promote institutional stability, banks have also maintained capital and liquidity buffers that were higher than Bangko Sentral ng Pilipinas (BSP) and international standards. The strong performance of the Philippine banking system has enabled it to remain supportive of the country's financing requirements.
- **The Philippine banking system is resilient and robust owing to the significant structural reforms implemented by the BSP over the years.** These reforms include passage of critical laws and implementation of a regulatory reform agenda that covers the adoption of Basel III standards, as well as enhanced corporate governance and risk management standards among BSP-supervised financial institutions (BSFIs).

¹ All the discussed data about the Philippine financial system are based on preliminary data as of September 2023, unless otherwise indicated.

The BSP also continues to pursue reforms aimed at promoting the safety and soundness of the financial system against the backdrop of rapid advancements in technological innovations, an evolving financial ecosystem and increasing attention to the attainment of environmental and social (E&S) goals as a means to ensure balanced, equitable and sustainable economic growth.

- **Innovation and evolution of financial services and products have led the BSP to welcome innovative market players into the financial system** with the entry of digital banks, electronic money issuers (EMIs), virtual asset service providers (VASPs) and other fintech players through the regulatory sandbox framework.

The Philippine financial landscape is rapidly evolving, especially with the digitalisation of financial services, which brings more opportunities to the unserved and underserved areas. It is in this light that the BSP has been committed to establishing a policy and regulatory environment that enables innovations to flourish while ensuring that controls and safeguards are in place. Recent policy issuances supporting this approach include the adoption of a digital banking framework (BSP Circular No 1105), issuance of guidelines for VASPs (BSP Circular No 1108), adoption of an Open Finance Framework (Circular No 1122) and issuance of a Regulatory Sandbox Framework (BSP Circular No 1153).

- The Sustainable Central Banking (SCB) programme was adopted as one of the BSP's strategic thrusts in 2020. The SCB programme features the BSP's role as enabler, mobiliser and doer in promoting the sustainability agenda in the financial system. Launched in December 2022, the 11-action-point programme was developed to reinforce these varying roles of the BSP.

As an enabler, the BSP has implemented a phased approach in issuing sustainability-related regulations to strengthen the banks' ability to manage environmental and social (E&S) risks and to promote integration of sustainability principles into their corporate governance and risk management frameworks as well as their business strategies and operations.

In April 2020 the BSP issued the Sustainable Finance Framework, which provides the overarching principles for embedding sustainability principles in banks. This was followed in October 2021 by the Environmental and Social Risk Management Framework, which requires banks to incorporate E&S risk factors into their credit and operational risk management systems. The BSP issued a third set of regulations on the Integration of Sustainability Principles in Investment Activities of Banks in August 2022.

- **Relatedly, the Securities and Exchange Commission (SEC) has adopted guidelines on the issuance of green, social, sustainability and sustainability-linked bonds.**² These regulatory issuances largely adopt the ASEAN Green, Social, Sustainability and Sustainability-Linked Bond Standards developed by the ASEAN Capital Markets Forum.

² www.sec.gov.ph/wp-content/uploads/2019/11/2018MCNo12.pdf
www.sec.gov.ph/wp-content/uploads/2019/10/2019MCNo09.pdf.%20
www.sec.gov.ph/wp-content/uploads/2019/10/2019MCNo08.pdf
www.sec.gov.ph/mc-2023/sec-mc-no-03-series-of-2023/#qsc.tab=0.

As of 30 September 2023, the total ASEAN-labelled green, social and sustainability bonds issued amounted to USD 41.3 billion, of which USD 10.0 billion, or 24%, were issued by Philippine companies.³ Since 2017, seven local banks have issued PHP 173.2 billion in peso-denominated and USD 1.5 billion in foreign currency-denominated green, social, sustainability and blue bonds.⁴ Of these seven banks, two issued approximately PHP 49.3 billion⁵ worth of social bonds to finance or refinance needs of eligible micro, small and medium-sized enterprises (MSMEs). A bank also issued USD 100 million worth of blue bonds in May 2022.⁶

- **The Philippines has also undertaken significant policy actions to solidify its track record of strengthening the Islamic banking ecosystem.** The enactment of Republic Act (RA) No 11439, or the Islamic Banking Act, in August 2019 has been a transformative step in opening up the Philippine financial system to greater depth and diversity. This law granted the BSP clear authority to issue a broader set of rules and regulations on Islamic banking, including the entry of other Islamic banking players into the country, consistent with the objective of providing an enabling regulatory environment that will allow Islamic banks to operate viably alongside the conventional banking system while considering the unique features of Islamic banking operations. The BSP's initiatives are complemented by reforms in takaful (Islamic insurance) and the Islamic capital market, which are part of the Islamic finance ecosystem that is progressively being developed under a whole-of-government approach.

The landmark maiden sukuk (Islamic bond) issuance by the Republic of the Philippines (ROP) on 6 December 2023 is part of the agenda to promote the development of Islamic banking and finance in the country. The sukuk issuance allows the ROP to diversify its global investor base and tap Islamic-focused investors and marks the establishment of an active, liquid reference curve for other Philippine issuers to access the sukuk market in the future. This milestone transaction illustrates the ROP's ability to leverage the stable market conditions and access the international capital markets.

Relative importance of bank intermediation and capital markets shifting:

- **The Philippine capital market has been gradually evolving, with consistent efforts to deepen and broaden the market.** Financial markets in the Philippines have developed considerably since the Asian financial crisis. Financial liberalisation, prudential supervision and regulatory reforms have significantly improved the stability, efficiency, depth and accessibility of the domestic financial

³ www.sec.gov.ph/cm-sustainable-2023/sustainable-finance-market-update-as-of-september-2023/#gsc.tab=0.

⁴ Proceeds are allocated to renewable energy and energy efficiency projects, green buildings, clean transportation, pollution prevention and control, sustainable water management, environmentally sustainable management of living natural resources and land use, affordable basic infrastructure, access to essential services, employment generation, affordable housing, and socioeconomic advancement and empowerment.

⁵ This includes the USD 150 million worth of social bonds issued by a bank on 23 July 2021. Converted using US dollar to Philippine peso rate as of issue date at PHP 50.235.

⁶ Proceeds of the said blue bonds will be allocated to financing for projects that help prevent marine pollution and preserve clean water resources, plastic recycling, wastewater treatment, sustainable tourism, fisheries and sustainable seafood processing.

markets and institutions. Although the financial system remains dominated by banks, there have been important changes in the structure of financial intermediation. Among the most striking changes are the expansion in the share of foreign funding and a rise in the external indebtedness of the non-financial sector, owing largely to the prolonged period of low global interest rates and ample global liquidity after the Global Financial Crisis (GFC). Strong capital inflows in the post-GFC period contributed to the weakening of the interest rate channel of monetary policy. This prompted a reassessment of monetary policy operations, which eventually led to the implementation of the interest rate corridor (IRC) system in 2016. The increasing reliance of the IRC on market-based instruments is expected to aid the development of the domestic money and capital markets in the country.

- **Capital market development can enhance domestic financial stability by providing new tools to not only raise funds, but also manage risks.** Financial market development increases market resilience and reduces risk concentration in the country's bank-centric financial system. Sources of funding will be diversified through the development of the capital market, including the local government bond market. Fostering capital market development involves encouraging the listing of qualified firms to enable them to raise funds in the equity market. Meanwhile, banks can encourage their medium-sized and large corporate clients to strengthen their capital structure by raising equity in the stock market, or corporates to leverage their balance sheets, raising long-term funding via bond issuances. Banks can also promote new equity and bond issues for investment through their retail and institutional clients, including small investors, who should be able to access these investment products through the banks' digital services.
- **The development of the capital markets, through progressive and innovative products and policies, will provide more investment opportunities to retail investors, broadening and deepening financial inclusion and at the same time improving the resiliency of the financial sector with a deeper capital market.** An efficient and secure national payment system (NPS) will enable and support the growth of financial transactions. Finally, the use of technology for reporting, supervision and compliance will facilitate financial inclusion and innovation and, more importantly, ensure a well functioning financial sector.

The banking sector has remained a key provider of credit to the economy. Bank loans are broad-based and supportive of key productive sectors (eg real estate, wholesale and retail trade, electricity, gas, steam and air-conditioning supply, manufacturing), as well as households. Nonetheless, there is increasing attention on the development of the capital markets as an alternative source of funding for corporations. Capital market development is seen to strengthen the resilience of the financial system, with a broad set of potential investors with differing risk appetites that can support a more diverse range of borrowers. In recent years, there have been various regulatory reforms and enhancements to infrastructure with the aim of facilitating activity and enhancing the price transparency and liquidity of the market.

- **The higher post-pandemic interest rate environment has also brought new investors into the bond market.** Prior to the higher-for-longer environment, these investors might not have found the yields from bonds sufficiently

appealing for them to be willing to have their funds locked in over the medium to long term. However, the yields offered by recent issuances have provided an incentive to breach the barrier. The hope is for these investors to consider reinvestment in the future and to remain in the market through changes in macroeconomic conditions, continuing to support market depth.

- **The digital transformation and greater use of technology is also evident in the area of capital markets.** Most recently, the Philippine national government has issued tokenised treasury bonds for the first time, with the objective of promoting greater financial inclusion and broader participation in the domestic bond market.

Importance of non-bank financial intermediaries and drivers of expansion:

- BSP-supervised non-bank financial intermediaries (NBFIs), such as non-stock savings and loan associations (NSSLAs), pawnshops (PS) and money service businesses (MSBs), play a crucial role in supporting the Philippine economy by:

1. **Enhancing financial inclusion:** NBFIs serve as vital channels for providing financial services to segments of the population that are underserved by traditional banks. They help to increase financial access and inclusion by offering services such as small loans, remittances and basic banking facilities.

Specifically, PS and MSBs are instrumental in promoting financial inclusion by serving as accessible financial touchpoints for sources of funds and provision of financial services, even in areas where banking services may be limited, given their wide presence across the country. As of 31 December 2023, there were 1,160 PS and 722 MSBs, with a combined total of 23,428 offices in the Philippines, surpassing the nationwide presence of banks by 80%.

Their transactions/operating platforms are connected or deeply linked to the operations/transactions of other BSFIs and are widely used as alternative means to move funds in the financial system. For instance, they are used as cash agents by banks and EMLs have been tapped for the payout of government cash amelioration programmes. Large PS belong to group structures with other related corporate entities engaged in banking, MSB and EMI operations, among others.

Meanwhile, the NSSLA industry has emerged as a crucial NBFI segment, playing an important role in fostering financial inclusion in the Philippines. Unlike banks, which serve and offer various financial instruments to the general public, NSSLAs cater to the needs of a welldefined group of members of a private company/conglomerate or department/branch/office of the government.

2. **Increasing access to credit:** NBFIs often specialise in providing credit to individuals and small businesses that may have difficulty obtaining loans from traditional banks. This promotes entrepreneurship, supports innovation and stimulates economic growth in EMEs.

For instance, NSSLAs provide access to a variety of loans and savings products. They have extended their services to millions of Filipinos across

the archipelago (1.3 million as of 31 December 2023) and remain one of the more accessible and dependable sources of funding for Filipinos.

3. **Fostering capital market development:** NBFIs play a significant role in developing capital markets in EMEs. They provide alternative investment options beyond traditional bank deposits. This helps in mobilising savings, facilitating capital formation and attracting domestic and foreign investments.
 4. **Diversifying sources of funding:** NBFIs offer an alternative source of funding for businesses and governments. By tapping into different funding channels, these intermediaries help diversify the overall funding structure of the economy and reduce reliance on traditional banking institutions.
 5. **Fostering financial innovation:** NBFIs are often at the forefront of financial innovation. They develop new products, services and technologies that can improve the efficiency and effectiveness of financial markets. This innovation can lead to increased competition, better risk management and overall improvements in the financial system.
 6. **Promoting financial stability:** NBFIs diversify the sources of funding and reduce reliance on the banking sector. This can enhance financial stability by reducing systemic risks and potential contagion effects. Additionally, these intermediaries can provide additional risk-sharing mechanisms against financial shocks, as they often have expertise and specialised knowledge in managing specific risks.
 7. **Supporting economic growth:** By providing funding to diverse sectors of the economy, NBFIs contribute to economic growth and development. They can finance small and medium-sized enterprises (SMEs) that face challenges in accessing traditional bank loans. This supports entrepreneurship, job creation and overall economic expansion.
- Meanwhile, several factors are driving the expansion of NBFIs in EMEs like the Philippines, such as:
 1. **Unserved market segments:** NBFIs often target underserved or unserved market segments, including individuals and small businesses that have limited access to traditional banking services. By addressing the financial needs of these segments, NBFIs can fill market gaps and tap into new business opportunities;
 2. **Economic growth and investment opportunities:** EMEs offer substantial economic growth potential and investment opportunities. NBFIs are drawn to these markets because they can participate in the financing of infrastructure projects, provide capital for SMEs and contribute to the overall development of the economy;
 3. **Regulatory changes:** Regulatory reforms and changes in EMEs have created more favourable conditions for NBFIs. Governments have recognised the importance of fostering financial innovation and inclusion, leading to the implementation of regulatory frameworks that support the growth of these intermediaries while maintaining financial stability;

4. **Technological advancements:** The rapid advancement of technology has facilitated the growth of NBFIs. Digital platforms, mobile banking and financial technology (fintech) innovations have made it easier for these intermediaries to reach a wider customer base and offer a range of financial services efficiently and at lower costs;
 5. **Search for higher yields:** NBFIs often seek higher investment returns compared to traditional banks. They may offer alternative investment products or engage in riskier activities, such as investing in emerging market assets. The search for higher yields drives their expansion as they cater to investors who are willing to take on more risk in pursuit of higher returns; and
 6. **Changing consumer preferences:** Consumer preferences have shifted over time, with individuals and businesses becoming more open to utilising non-traditional financial services. NBFIs have capitalised on this trend by offering innovative and customer-centric financial products and services that align with evolving consumer needs and preferences.
- In the case of the Philippines, growth/expansion in the PS and MSB industries are driven by the ever-changing needs of consumers, fostering an inclusive financial system, along with technological/innovational changes and advancements, among others. In recent years, PS have expanded their range of products and services from simple pledge of jewellery to include high-value luxury goods and other personal items and have also utilised digital means in delivering their services to their clients. Furthermore, the scope of business is no longer limited to pawning but also includes corollary activities such as remittance, money changing and bills payment that provide Filipinos with accessible financial services. These evolutions have resulted in the need to expand the scope and reach of products and services by establishing additional branches/offices, among others. The number of PS and MSB offices has increased by 10% and 12%, respectively, based on end-December 2020 and end-December 2023 data.
 - Meanwhile, the NSSLA industry has grown extensively in terms of asset size, with a pre-pandemic three-year⁷ average growth rate of 13.21%. Meanwhile, similar to other sectors, the growth of the NSSLA industry was hampered by the challenges brought about by the Covid-19 pandemic. From 2020 to 2022, the average rate of increase in total assets was only 4.84%. This was a result of the low demand for credit as community quarantine restrictions were imposed on business operations.

Expansion in terms of the number of NSSLAs, however, has been non-existent in the past few years. No new authority to operate an NSSLA has been granted by the BSP for the last 10 years. While some letters of intention from government departments/branches/offices and private corporations to set up an NSSLA were received in the last five years, these applications were rejected due to lack of and/or deficiencies in the submitted documentary requirements.

⁷ 2019 – 14.91%; 2018 – 16.97%; 2017 – 7.74%.

Major changes in the domestic and foreign investor base:

- While the liberalisation of the rules on entry of foreign banks under RA No 10641 increased the number of foreign banks operating in the Philippines, the banking system remains dominated by domestic banks. Out of the 483 banks operating in the Philippines as of end-October 2023,⁸ 455 are domestic banks while 28 are foreign banks. Since the issuance of BSP Circular No 858 dated 21 November 2014 which implemented RA No 10641, the BSP Monetary Board has approved 12 foreign bank applications, from China [1], Japan [1], Malaysia [1], Singapore [1], South Korea [3] and Chinese Taipei [5]. The 28 foreign banks operating in the Philippines are comprised of 24 foreign bank branches and four foreign bank subsidiaries.⁹
- **PS and MSBs are consistently dominated by domestic investors, while NSSLAs have been purely comprised of domestic/Filipino capital contributors over the years.** Data for the years 2018 to 2023 show less than 1% average growth for both PS' domestic and foreign investor base, while for MSBs, the domestic and foreign investor bases have increased by an average of 6% and less than 1%, respectively. Growth is mostly driven by new entrants to the industry.

Developments in the Philippine financial system during and after the Covid-19 pandemic

- Please see discussions on the significant changes to the financial system above.
- At the onset of the pandemic, the BSP was swift in implementing operational and regulatory relief measures aimed at extending financial relief, boosting bank lending and promoting continued access to financial delivery and services. Philippine banks have shown resilience to the Covid-19 crisis, benefiting from risk management and other regulatory reforms of the past two decades. As economic conditions improved and Covid-19 restrictions eased, most of the relief measures expired but some were extended and adopted as permanent policy to sustain credit growth momentum and ensure continued access to financial services.
- In the case of NBFIs, the Covid-19 pandemic had a significant impact on their strategic initiatives, financial condition and overall operations.

NBFIs overhauled their strategic direction and key initiatives to cope with the challenges brought by the pandemic, mitigate the impact on operations and profit, and adapt to the new normal. They also revised their financial projections to come up with achievable and conservative short-term targets and adopted operational strategies to cut costs and mitigate the impact of the health crisis on profits.

Importantly, the pandemic highlighted the critical role of technology in NBFI operations. The adoption of digital means has dramatically increased, which has put immense pressure on technology infrastructure and information security,

⁸ Source: Department of Supervisory Analytics (DSA) Financial Supervision Sector (FSS), BSP (latest preliminary).

⁹ Twenty-six universal/commercial banks, or U/KBs (24 foreign bank branches, two subsidiaries) and two subsidiary thrift banks.

encompassing true tests of capacity planning and resilience. While varying in sophistication and extent of use of IT resources, NBFIs with digital channels have not encountered any system/resource disruption during the extended quarantine period. The pandemic also brought a new light to digital transformation. Digital platforms allowed customers to perform financial transactions with NBFIs during the community quarantine.

However, while most NSSLAs are digitally ready, PS and MSBs have appeared to lag behind as respondents spoke of roadblocks to digital reforms. To cushion the impact of the pandemic and prepare the institutions for the new operating environment, NBFIs boards and management have adopted proactive measures and various initiatives. Revenue-generating and expense reduction measures were initiated to mitigate the pandemic's adverse impact on profitability. Other initiatives hinged on innovation, diversification and introduction of new products and services; intensified customer information campaigns; improved access point experience; and expanded networking to feasible and accessible locations. PS are also pursuing initiatives to increase client patronage by way of high appraisals, while NSSLAs have intensified loan collection activities.

2. How is lending by state-owned banks and development banks evolving? Which sectors are being financed? Did the pandemic affect the lending by these institutions and what is the outlook?

The evolution of lending by state-owned banks is influenced by various factors, such as general economic conditions, shifts in government policies/priorities, changing legal and regulatory requirements and global/domestic financial trends, among others. State-owned banks in the Philippines are at the forefront of implementing the various government lending programmes and initiatives. Changes in government priorities can impact the lending strategies of these banks, as the government may direct them to support and prioritise specific sectors such as agriculture, fisheries and rural development, and SMEs.

Based on data as of end-September 2023, government banks in the Philippines are mainly financing private corporations, loans to government, SME loans and salary-based general purpose consumption loans which are mostly part of the following industries: (i) electricity, gas, steam and air-conditioning supply; (ii) real estate activities; and (iii) public administration and defence, compulsory social security.

These banks provided financing and support during the Covid-19 pandemic, particularly to borrowers that were heavily affected. Though there was lower loan demand following business disruptions during the pandemic, their loans to assets started to increase with the resumption of business activities.

The boards and management of state-owned banks actively oversee their credit risk-taking activities and management of credit risk exposures.

Based on a survey conducted with Philippine banks in 2022, a majority of these banks, including government banks, shared a stable outlook on the banking system in the next few years. This optimism was coupled with expectations of growth in assets, loans, deposits and net income. Banks intend to actively participate in the money and capital markets in the next two years as more than half of respondents

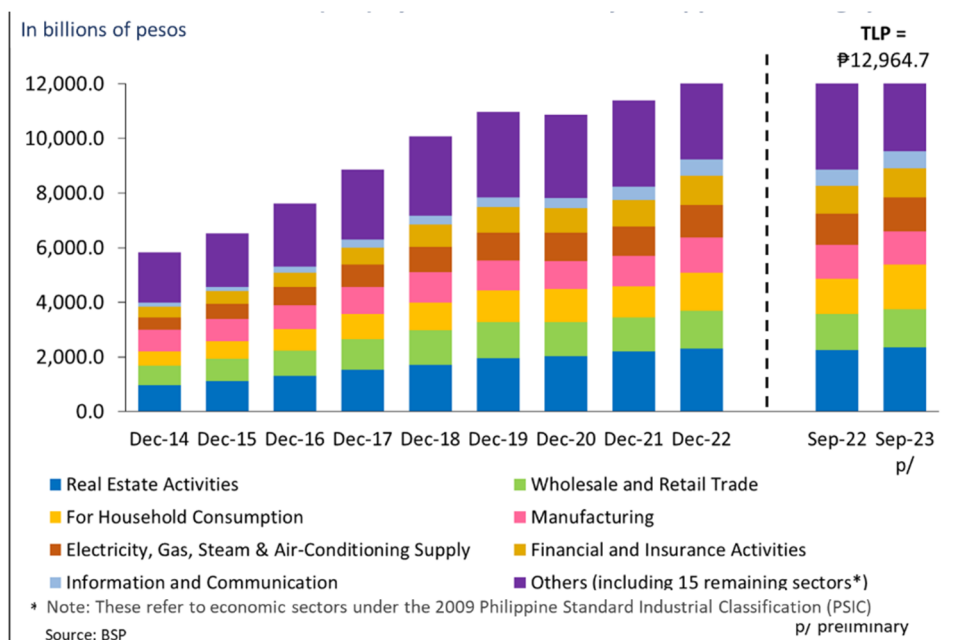
expect growth in securities investments. Banks also plan to maintain risk-based capital, leverage and liquidity ratios at levels higher than domestic and global standards to promote institutional stability.

3. How has the sectoral allocation of credit changed over time? Have there been major shifts in credit allocation between households and non-financial firms or within the non-financial corporate sector?

Philippine banks continue to extend credit mainly to the real estate sector. From 2014 to 2022, this sector was the biggest borrower in the banking system with an average loan share of 17.7%, followed by wholesale and retail trade (11.9%) and manufacturing (11.0%). During this period, the share of economic sectors such as manufacturing and wholesale and retail trade gradually declined from 13.8% to 10.2% and from 12.4% to 10.9%, respectively. Meanwhile, sectors like households saw a considerable increase from 8.9% to 11.0%, as did electricity, gas and steam (from 7.5% to 9.6%), construction (from 2.1% to 3.7%) and information and communication (from 2.2% to 4.7%).

Gross total loan portfolio (TLP) by economic activity: Philippine banking system

Figure 1



- Loans to the non-financial corporate sector and households in the Philippines have remained relatively stable over the years, as shown in Figure 1. Likewise, banks' lending has remained broad-based across various sectors. As of September 2023, the real estate sector remained the banking system's biggest borrower, with a loan share of 18.1% (PHP 2,357.5 billion) followed by

households¹⁰ (12.6%, PHP 1,641.1 billion), which registered 25.4% growth in the same period.¹¹ Except for manufacturing,¹² loans to all sectors expanded, albeit at a decelerated pace.¹³ The slowdown in lending activity can be attributed to interest rate hikes and high inflation which dampened loan demand, particularly from business.

- Specifically for loans for household consumption, its share rose to 12.6% (from 10.8% in September 2022) due to faster growth recorded at 25.4%.¹⁴ This is expected to continue amid growing demand from households and easing bank credit standards driven by improving economic conditions.¹⁵

The allocation of finance and long-term growth

4. What are the implications of recent shifts in the importance of bank intermediation and capital markets for financing long-run growth?

The BSP recognises the importance of bank intermediation and capital markets for financing long-run growth. The effectiveness of the intermediation function of the Philippine banking system is evident in its robust performance, with growing assets, loans, deposits and profits accompanied by sufficient capital and liquidity buffers and ample loan loss reserves. Funded mainly by domestic deposits, asset growth has enabled banks to remain supportive of the Philippine economy through lending activities whereby gross total loans went up by 7.8% to reach PHP 13.1 trillion in September 2023, marking 26 consecutive months of year-on-year growth since August 2021.

¹⁰ These borrowings were comprised of credit card receivables (CCRs) (40.3% share, PHP 662.0 billion), motor vehicle loans (30.3% share, PHP 496.5 billion), salary-based general purpose consumption loans (SBGPCLs) (26.6% share, PHP 436.0 billion) and other consumer loans (2.8% share, PHP 46.7 billion). Excluded are loans to individuals for housing purposes or residential real estate loans.

¹¹ Other major sectors' shares are as follows: wholesale and retail trade (10.7%, PHP 1,390.8 billion), electricity, gas, steam and air-conditioning supply (9.5%, PHP 1,245.2 billion) and manufacturing (9.2%, PHP 1,198.2 billion).

¹² Loans to manufacturing started to weaken from May 2023 (increasing by just 0.9% vis-à-vis the 9.5% growth in Q1 2023), followed by a contraction in July, August and September 2023 (down by 0.2%, 3.0% and 3.4% respectively). According to the Philippine Statistics Authority, manufacturing output recorded slower growth from Q1 2023 due to lower activity. Further, the Value and Volume of Production Index (VaPI) for the manufacture of food products registered an annual decline of 6.4%. This was primarily driven by the annual decline in the manufacture of dairy products industry group, which stood at 26.5% in September 2023 compared to the 3.8% annual decrement in the previous month.

¹³ Loans to non-financial corporate sectors continued to expand at a decelerated pace. As of September 2023, loans to businesses engaged in real estate, electricity, gas, steam and air-conditioning supply, and wholesale and retail trade sectors recorded growth rates of 5.0% (up by PHP 112.2 billion), 9.0% (up by PHP 103.3 billion) and 6.1% (up by PHP 79.4 billion), respectively.

¹⁴ Loans to households grew by 16.9% before the pandemic. The pre-pandemic period covers the years from 2015 to 2019. Loans to households as of September 2023 and September 2022 rose by 25.4% and 16.1%, respectively.

¹⁵ Based on Q2 2023 Senior Loan Officers' Survey (SLOS).

The capital markets are seen to address critical funding gaps that cannot be fully met by bank credit or government spending. They serve to complement the banking industry, providing additional funding at longer maturities than banks may be willing to offer. Bond markets also allow for funding to be channelled to a wider variety of economic activities, including those that may be outside the risk tolerances of banks. The diversification afforded by the capital markets increases financial system resilience and ensures that stresses on a single creditor (eg the banking sector) are not propagated throughout the economy. Active domestic capital markets also allow borrowers to obtain funding onshore, in local currency. This prevents domestic agents from relying excessively on foreign funding sources, which may expose them to foreign exchange (FX) risk.

Capital markets make a broad range of financial products available to both borrowers and creditors, helping increase financial inclusion. Startups and SMEs may gain access to credit from investors with higher risk appetites, who in turn receive opportunities for enhanced returns.

While there has not been a marked shift in the importance of bank intermediation vis-à-vis the capital markets for financing long-run growth in the Philippines in recent years, there has been greater focus among both banks and capital market investors on financing long-run growth. Companies are increasingly expected to consider long-term risks such as climate risk in their strategic decision-making, and those that do can expect to benefit from being able to tap more potential sources of funding.

The BSP has supported this paradigm shift by collaborating on the promotion of sustainable finance. The sustainability/sustainable finance-related regulations for banks are being issued in phases. This began with the Sustainable Finance Framework, which provides high-level principles and broad expectations on the integration of sustainability principles into corporate and risk governance frameworks, as well as into banks' business strategies and operations. This was followed by the Environmental and Social Risk Management (ESRM) Framework, which requires banks to incorporate environmental and social (E&S) risk factors into their credit and operational risk management systems. The ESRM Framework also includes expectations of a bank's board in setting strategic E&S objectives, considering material E&S risks in the bank's capital planning process, institutionalising a capacity-building programme to equip all personnel to manage such risks, and adopting an effective communication strategy.

Moreover, the BSP has issued Guidelines on the integration of sustainability principles into the investment activities of banks. Under this regulation, banks are expected to assess if the investment and the issuing company are exposed to material E&S risks, and to analyse potential exit strategies if the said investment is found to have high E&S risks, among others. Proposed guidelines for integrating sustainability principles into unit investment trust funds are also under development.

Meanwhile, banks issuing green,¹⁶ social¹⁷ or sustainability¹⁸ bonds are expected to refer to the pertinent guidelines issued by the SEC.

The BSP, the SEC and the Insurance Commission (IC), under the auspices of the Financial Sector Forum (FSF), have also jointly developed Sustainable Finance Taxonomy Guidelines. The local taxonomy will initially focus on climate change mitigation and adaptation and will later cover biodiversity, circular economy and other social aspects. The taxonomy is seen to establish a common understanding among various key players to identify which economic activities can be considered as environmentally and socially sustainable.

The consultation draft¹⁹ was released for comments from supervised entities and other stakeholders or interested parties until 6 October 2023. The FSF member agencies also conducted a series of in-person consultations with relevant government agencies and supervised entities of the BSP, SEC and IC in October–November 2023 to further refine the proposed guidelines. The BSP and SEC issued their respective regulations adopting the Philippine Sustainable Finance Taxonomy Guidelines in February 2024.²⁰

Sources:

(1) F Dakila, “The development of financial markets in the Philippines and its interaction with monetary policy and financial stability”, in “Financial market development, monetary policy and financial stability in emerging market economies”, BIS Papers, no 113, December 2020.

(2) National Economic Development Authority, Philippine Development Plan 2023-2028, Chapter 11.

¹⁶ www.sec.gov.ph/mc-2018/mc-no-12-s-2018-guidelines-on-the-issuance-of-green-bonds-under-the-asean-green-bonds-standards-in-the-philippines/#gsc.tab=0.

¹⁷ www.sec.gov.ph/mc-2019/mc-no-09-s-2019-guidelines-on-the-issuance-of-social-bonds-under-the-asean-social-bonds-standards-in-the-philippines/#gsc.tab=0.

¹⁸ appointment.sec.gov.ph/mc-2019/mc-no-08-s-2019-guidelines-on-the-issuance-of-sustainability-bonds-under-the-asean-sustainability-bonds-standards-in-the-philippines/.

¹⁹ www.bsp.gov.ph/Regulations/Issuances%20of%20Policy%20Exposure%20Drafts/PH_Sustainable_Finance_Taxonomy_Guidelines_Consultation_Paper.pdf

²⁰ www.sec.gov.ph/wp-content/uploads/2024/02/2024MC_SEC-MC-No.-5.-S.-of-2024-Guidelines-on-the-Philippine-Sustainable-Finance-Taxonomy.pdf;
www.bsp.gov.ph/Regulations/Issuances/2024/1187.pdf.

5. How has the various markets' (equity/bond/bank loans) ability to promote growth evolved over time? How efficient are they in financing high growth firms? Are there concerns about financing zombie firms?

On equity/bond/bank loans markets and growth:

Bank loans can play a crucial role in fostering economic growth by providing businesses and individuals with the financial resources they need to invest, expand and engage in economic activities. This is particularly true for bank-dominated economies such as the Philippines, where gross total loans of the banking system reached PHP 13.1 trillion as of September 2023.

While banks still dominate, the bond and equity markets have become an increasingly important component of capital market development in the country. Outstanding local debt securities rose by 9.6% year on year to PHP 11.7 trillion as of June 2023. Treasury and other government bonds remained dominant in the local currency bond market, accounting for 82.4% of the total debt stock at the end of June 2023 after posting 2.3% quarter-on-quarter growth. Corporate bonds had a 13.6% share, while the securities issued by the BSP represented another 4.0%.

On the other hand, the Philippine corporate bond market grew by 4.4% year on year due to large-volume issuances from select firms. Banking, property and holding companies are the dominant issuers, accounting for an aggregate 81.0% of all corporate bonds outstanding as of end-June 2023.

However, local currency bond issuance contracted by 19.2% quarter on quarter in the second quarter of 2023. This was mainly driven by a reduced issuance of treasury bonds. Government securities saw a 39.0% quarter-on-quarter contraction in terms of new issuances, largely attributed to the high base resulting from the sale of retail treasury bonds amounting to PHP 283.7 billion in February.

Since 2017, seven local banks have issued PHP 173.2 billion peso-denominated and USD 1.5 billion foreign currency-denominated green, social, sustainability and blue bonds.²¹ Meanwhile, two banks have issued approximately PHP49.3 billion in social bonds to finance or refinance the needs of eligible MSMEs.

Moreover, the landmark maiden issuance of the Philippines' sovereign sukuk marks the country's debut in the global Islamic financial markets, which is a leap towards further promoting the development of the Islamic banking and finance ecosystem. On 29 November 2023²² the Philippines successfully priced its sukuk issuance ("sukuk"), utilising real estate assets under Ijara and Wakala structures, together with a Commodity Murabaha aspect. The sukuk, with an issuance size of USD 1 billion and a tenor of 5.5 years, marks the first time the country has tapped the

²¹ Proceeds are allocated for renewable energy and energy efficiency projects, green buildings, clean transportation, pollution prevention and control, sustainable water management, environmentally sustainable management of living natural resources and land use, affordable basic infrastructure, access to essential services, employment generation, affordable housing, and socioeconomic advancement and empowerment.

²² Please see press release www.treasury.gov.ph/wp-content/uploads/2023/11/ROP-Sukuk-2023-Press-Release-30-November-2023.pdf.

global Islamic financial markets in this structure. The sukuk issuance allows the Philippines to diversify its global investor base and tap Islamic-focused investors across the Middle East, and marks the establishment of an active, liquid reference curve for other Philippine issuers to access the sukuk market in the future.

Meanwhile, the opening of the Credit Information Corporation (CIC) database in 2019 enhanced the ability of banks to properly identify the capability of potential borrowers to repay loans. This is likely to further facilitate banks' lending to borrowers, including high-growth/high-growth-potential firms.

Technology is also increasingly being utilised to extend funding to clients in the different markets. For instance, the establishment of digital banks now enables banks to extend loans to borrowers via purely digital means. Bonds may also now be bought online through various digital channels.

On financing zombie firms

In the Philippine market, the key challenge lies in increasing activity in the capital market. Banks must continue to uphold and strengthen their credit risk management standards and practices to better screen and avoid financing "zombie firms" – companies that do not generate enough cash to pay the interest on their debts – so that they cease acting as a drag on the economy by using up scarce resources that could be better allocated to a more prolific undertaking. While the concern regarding zombie firms may not be as significant as before owing to the current economic environment with high interest rates which may shorten their lifespan, emerging risks may come from them slowly dying off in numbers as debts become due. This could mean layoffs and major losses for investors, which could usher in recession. Nevertheless, as zombie firms start selling off their assets, this could create new opportunities for healthier firms.

Sources:

- (1) F Dakila, "The development of financial markets in the Philippines and its interaction with monetary policy and financial stability", in "Financial market development, monetary policy and financial stability in emerging market economies", BIS Papers, no 113, December 2020.
- (2) J Armas and N De Guzman, "Introducing a multi-dimensional financial development index for the Philippines", BSP Working Paper Series, no 2022-05, July 2022.
- (3) T Didier, R Levine, R Montanes and S Schmukler, "Capital market financing and firm growth", World Bank Policy Research Working Papers, no 9337, July 2020.
- (4) W Frick, "Can zombie firms survive rising interest rates?", Harvard Business Review, September 2022.

6. How important is foreign capital for long-term growth? Does the composition of investment by type of investor and currency matter?

Foreign direct investment (FDI) is an important source of external financing for developing countries. Given its long-term nature, it provides a stable source of funding for host or receiving economies; thus, it is generally preferred over other types of external funding. The expected benefits of FDI to host economies include, among others, increased employment, technology spillovers, transfer of managerial practices and increased integration with international markets. These, in turn, are expected to ultimately contribute to a host country's economic growth and development. Due to the expected benefits of FDI, countries, especially developing and emerging market economies, implement various measures or offer incentives in an effort to make themselves more attractive to foreign investors.

A study on "Foreign direct investment and economic growth: some empirical evidence from the Philippines"²³ shows that foreign capital is important for long-term growth. It was cited that the possible reason for this is that those firms with significant foreign investors enjoy lower cost of production and higher productive efficiency. This is primarily driven by the incentives being given to encourage foreign investments and the expertise these foreign investors bring into the Philippines.

According to the same study, there are institutional and scale factors that contribute to foreign investment influencing growth.²⁴ These factors include the recipient economy's trade regime, legislation, political stability, balance of payment constraints and the size of the domestic market for goods and services produced through the investment. On the other hand, the study was not able to identify the composition of investment by type and currency as factors that could have an impact on foreign investment influencing growth.

One downside of reliance on foreign capital is that the flow of such capital may become volatile due to foreseen and unforeseen circumstances. Liberalised rules on foreign investment may result in increased inflow of capital. At the same time, however, the country's exposure to the threat of capital flight may increase. The concentration of foreign investments from a specific type of investor can also contribute to the volatility of capital flows. This can potentially pose a significant threat to long-term growth if capital is withdrawn in unison by foreign investors.

In recent years, the Philippines has been attracting more FDI amid domestic and global developments. Even with healthy FDI recorded to date, policymakers are on the lookout for a better macroeconomic enabling environment to sustain and maximise the benefits from FDI; offer reasonable incentives, clarity and continuity of reforms; and enhance promotion of the Philippines as a prime FDI destination.

The Philippines is undergoing economic structural shifts and implementing policies that are responsive to global challenges, and could unlock the potential

²³ esacentral.org.au/images/Agbola.pdf.

²⁴ However, according to the study, the effect on long-term growth of these factors still depends on the absorptive capacity of the Philippines, as created through increased domestic private investment and infrastructure development.

benefits of even more FDI, with foreign investors able to differentiate the Philippine economy from others.

Furthermore, engagement of stakeholders for better investor perception and improvement in competitiveness, ease of doing business and institutional and governance reforms cannot be underestimated and may very well complement the sufficient external buffers and domestic liquidity provisions in place.

Sources:

(1) H Parcon-Santos, M Amador and M Romarate, "Understanding country disparities in foreign direct investments", BSP Research Blog, 26 September 2023.

(2) M Bartolazo, "Sustaining foreign direct investments (FDIs) in the Philippines", BSP Economic Newsletter, no 18-01, August 2018.

7. How have changes in the sectoral allocation of credit affected the economy's growth potential?

The BSP is of the view that allocation of credit as discussed above has been broadly in line with the growth of economic sectors, with banks cognisant of each sector's opportunities and risks. It is worth noting that economic activities contributing to capital formation activities and fostering technology adaptation have seen their share increase during the period 2014 to 2022. For instance, electricity, gas and steam saw a sizeable increase from 7.5% to 9.6%, as did construction (from 2.1% to 3.7%) and information and communication (from 2.2% to 4.7%). Increased lending to these sectors can help bring down the cost of doing business, increase productivity and, in turn, attract FDI that can lead to job creation and sustained growth.

The BSP deems that the current sectoral allocation of credit is conducive to the economy's growth potential as a huge portion of lending is invested in the productive sectors of the economy.

Given the Philippines' market-led economy, financing needs of various industries are demand-driven. Banks mainly provide financing support by granting loans and levying interest to borrowers according to their corresponding risk profiles and the prevailing cost of capital, albeit influenced by the policy rate set by the BSP. Aligned with its role as regulator and financial supervisor, the BSP focuses on ensuring that banks take on risks while remaining in compliance with prudential and regulatory standards.

Aside from monetary policy and prudential regulations, the BSP's recent initiatives to influence the allocation of credit have mainly involved shepherding the banking sector to mainstream green projects and to align its operations on sustainability principles and practices towards a more inclusive and resilient economy. Incentives for banks funding green or sustainable projects are also in place in the form of a separate single borrower's limit (SBL) for project finance, exclusion from some prudential limits and treatment of sustainable finance as an eligible mode of compliance with mandatory credit to agriculture, fisheries and rural development, among others. Recently, the BSP released guidelines providing temporary incentive measures to accelerate financing of green or sustainable projects, including transition

activities. These are in the form of an increased SBL (by 15%) and a gradual reduction in the reserve requirement rate against sustainable bonds issued by banks.²⁵

Since 2014, the Philippine economy has been driven by the services sector, accounting for close to 60% of GDP.²⁶ Multilateral institutions and economic policymakers advise that in order for the Philippines to escape the “middle-income trap”²⁷ and to increase the economy’s growth potential, more investments in physical capital, particularly infrastructure that will improve economic productivity, as well as investments in technology, innovation and human capital (ie health and skills upgrading) are paramount.²⁸

8. How important is lending by state-owned and/or development banks from the perspective of long-term growth and employment?

State-owned or government banks or government financial institutions (GFIs) are considered partners of the national government in carrying out its initiatives by providing finance and support to projects/programmes that cater to their respective mandated sectors for the benefit of the rest of the economy. They also provide countercyclical lending, which is lending more when the economy is weak. This became evident during the Covid-19 pandemic, when GFIs increased their lending to sectors or industries that were deeply hit by the pandemic.

In particular, the lending programmes of government banks are crafted to finance development to stimulate economic activities across the nation. Further, their pivotal role as development financing institutions is to drive resiliency and empowerment for various industries and sectors of society through transformative banking that fosters inclusive growth and sustainability.

Meanwhile, government banks have created and implemented new and responsive lending programmes that have significantly aided the whole-of-government approach by assisting the country’s various economic sectors. Various credit assistance programmes which offer low interest rates and flexible terms and conditions have been offered to mitigate the pandemic’s negative effects and aid in the revival of businesses, particularly small-scale enterprises and other vulnerable sectors. At the core of their operations is their role as a catalyst for sustainable development, responding to the financing requirements not only of small farmers and fishers, but also of local government units, MSMEs, private corporations in strategically important industries, government-owned and controlled corporations, financial institutions and other sectors that create employment and propel robust economic growth. These banks are also aggressive in accelerating financial inclusion,

²⁵ www.bsp.gov.ph/Regulations/Issuances/2023/1185.pdf

²⁶ Annual average from 2014 to 2022 is 59.8 percent.

²⁷ A situation in which countries have failed to grow further into a high-income level despite attaining middle income status for certain periods. There are three known approaches on the cause and resolution of middle-income trap, namely: (i) getting education and institutions right; (ii) changing export composition through comparative advantage; and (iii) industrial upgrading through state intervention. Source: unctad.org/system/files/official-document/gdsmdp20151kanchoochat_en.pdf

²⁸ www.pids.gov.ph/details/news/in-the-news/health-energy-key-to-exiting-lower-middle-income-trap

bringing the previously unbanked into the formal banking system, thereby promoting a more equitable participation of Filipinos in the growth of the nation.

Are there concerns about lending to the public sector and to state-owned enterprises crowding out lending to the private sector over the long term? How has the pandemic affected these trends?

The BSP has no current concerns that lending of Philippine banks to the public sector and to state-owned enterprises is crowding out lending to the private sector. Notwithstanding the banks' social mission as mandated by their respective charters, more than half of the loan portfolio of government banks is composed of loans to the private sector, while loans to the public sector/state-owned enterprises account for less than a fifth to a third of the total loan portfolio. These figures have remained steady pre- and post-pandemic.

It may be worth noting that mechanisms are in place to ensure that government borrowings are not excessive and are consistent with the state's overall financial goals. Pursuant to Section 123 of Republic Act (RA) No 7653, or the New Central Bank Act, as amended by RA 11211, whenever the government, or any of its political subdivisions or instrumentalities, contemplates borrowing within the Philippines, the prior opinion of the Monetary Board (MB) shall be requested in order that the MB may render an opinion on the probable effects of the proposed operation on monetary aggregates, the price level and the balance of payments.

9. How important is digital innovation (eg fintech or big tech platforms, machine learning) for reducing credit constraints, including for SMEs?

Digitalising financial services is an excellent opportunity to improve financial inclusion as it could expand financial access for traditionally unserved and underserved consumers. Fintech firms have introduced game-changing innovations that have widened the accessibility of financial services tailored to many people. They promote the use of technological developments such as biometrics, digital identity, artificial intelligence (AI) and machine learning (ML). In particular, ML can be used to enhance credit scoring, client interface and insurance risk management activities. ML algorithms help provide a data-driven assessment of a client's credit risk and subsequent loan pricing.

The BSP continues to nurture the growth of digital innovations in the financial sector as it is seen to enable financial products and services to be accessible to all. This is embedded in the adoption of the country's National Strategy for Financial Inclusion (NSFI) 2022–2028.²⁹

More specifically, the BSP gives priority attention to innovative and sustainable financing approaches that are instrumental in reducing credit constraints and improving access to finance. These include:

- The Credit Risk Database (CRD) Project, a joint initiative of the BSP and Japan International Cooperation Agency (JICA) which involves creating a large-scale

²⁹ www.bsp.gov.ph/Pages/InclusiveFinance/NSFI-2022-2028.pdf

database of MSMEs and developing a robust credit scoring model as a credit evaluation tool for risk-based lending. This is envisioned to enable financial institutions to lend to collateral-strapped SMEs with greater confidence. The CRD scoring model was launched on 25 April 2023.

- The Paleng-QR Ph Plus programme, a collaboration framework to promote cashless payments in public markets and local transport across the country. This is a joint initiative of the BSP and the Department of the Interior and Local Government (DILG)³⁰ in support of the NSFI's priority initiative to promote digital payments. The programme capitalises on the BSP's QR Ph initiative and seeks to promote financial inclusion and cashless transactions in public markets, community shops and local transport hubs in all cities and municipalities in the country. It aims to build a digital ecosystem following the basic payment patterns of Filipinos, bolster the value of transaction accounts and aid in the promotion and adoption of these accounts.
- Agriculture value chain financing (AVCF). The adoption of AVCF encourages the linking of various actors/players in an agricultural value chain to help reduce the credit risk of participating smallholder farmers/fisherfolk. Participation in strong value chains allows farmers and agri-based microentrepreneurs to leverage on better technologies and sustainable high-value markets, which can increase their productivity and income potential, thereby improving their risk profile from the perspective of the banks.

Relatedly, the SEC promotes crowdfunding as another option for MSMEs and startups to gain access to the capital market for their financial needs. Crowdfunding is a viable alternative to traditional loans that uses the fundraising approach where an individual or group solicits money from the public through an online platform. Such a platform allows users to access, evaluate and process a wide range of data sources to create accurate risk models, improving the quality of risk assessments and decision-making for financing applicants. In 2023, the SEC gave crowdfunding portals the authority to act as registrars of qualified institutional and individual buyers, as it ramps up efforts to boost the capital market.³¹

How important is digital innovation for reducing informality? What promising projects and/or developments are ongoing in your jurisdiction?

Digitalisation expands the policy options in addressing informality and related issues. Digital solutions have been particularly helpful in facilitating the formalisation and delivery of public services, improving access to financial services and expanding market reach to the unbanked and underbanked segments.

Digital innovations can improve financial inclusion in the informal sector by offering access to mobile banking and payment solutions, enabling informal businesses to conduct financial transactions more efficiently and with less cost, and to access formal financing. The informal business sector will be able to access new

³⁰ [www.bsp.gov.ph/Media And Research/Public Advisories/Joint Memorandum Circular No.1 Series of 2022 Paleng-QR Ph.pdf](https://www.bsp.gov.ph/Media%20And%20Research/Public%20Advisories/Joint%20Memorandum%20Circular%20No.1%20Series%20of%202022%20Paleng-QR%20Ph.pdf)

³¹ www.sec.gov.ph/wp-content/uploads/2023/09/2023PR-SEC-empowers-crowdfunding-portals-to-boost-capital-market-09122023.pdf

markets and customers beyond their borders through e-commerce platforms, social media and digital marketplaces.

The BSP is cognisant of its crucial role in facilitating an enabling regulatory environment that promotes inclusive digital finance and risk resilient financial systems and infrastructures. Strengthening financial systems and infrastructures is central to increasing cost efficiencies and managing risks to enable new means of innovative financial services delivery capable of reaching the vulnerable sectors of the economy.

In 2020, the BSP launched its Digital Payments Transformation Roadmap 2020–2023, one of its key strategic initiatives towards digitalisation. The establishment of the roadmap aims to promote digitisation of payments that is strategically geared towards the development of a secure, profitable and interoperable payment system that caters to the welfare of consumers. Targeted outcomes of this roadmap included shifting at least 50% of the total volume of retail payments into digital form and having at least 70% of Filipino adults onboarded to the financial system through the ownership and use of a transaction account by 2023.³²

- **Guidelines on the establishment of digital banks (Circular no 1105)**

Digital banks are well positioned to serve as key enablers towards greater digital transformation and financial inclusion in the country. These banks are at the forefront of digitalisation as they leverage on emerging and innovative technologies to operate efficiently and conduct their business more effectively.

Digital banks can help advance financial inclusion by helping address long-standing demand and supply constraints to delivering financial services that are appropriate to the needs and capacity especially of the marginalised. Some of the challenges/barriers that were noted and used as a basis in formulating the digital banking framework are informality and lack of documentation, low and unpredictable income, geographical barriers, and literacy and trust. Digital banks offer innovative products and services that attract a wide range of financial consumers. The banks' offerings have primarily focused on the retail segment, spanning from high interest earning deposit accounts to more accessible consumer loans (including quick/salary loans) facilitated via alternative credit scoring models.

- **Guidelines for the adoption of an Open Finance Framework (Circular no 1122)**

As a landmark initiative, the BSP recognises the benefits of moving towards an open finance ecosystem as it enables the development of bespoke financial products and services responsive to the needs of customers through responsible sharing of information. The Open Finance Framework under Circular no 1122 aims to empower customers by giving them better control over their personal and financial data, catalysing the development of products and services that are responsive to their needs.

³² With the share of digital transactions in total retail payments having increased from 1% in 2013 to 42.1% in 2022, the BSP is optimistic that the 50% by end-2023 target has been reached. The BSP is already charting the next phase of the country's digital journey under the Digital Payments Transformation Roadmap 2024–2026.

Open finance is expected to help reduce credit constraints in the economy and further expand access to credit. Customers who have limited or no access to traditional bank credit can use open banking/finance to share their alternative data sources, such as digital footprints, with other financial market players who can use them to assess their creditworthiness and offer them loans. Meanwhile, customers who have access to traditional bank credit can also use open banking/finance to compare and switch between different loan offers from various providers, such as banks, fintech lenders or peer-to-peer platforms.

Other ongoing digitalisation initiatives include: (i) open finance pilot activities; and (ii) development of digital financial marketplace model regulation.

Excessive finance, resilience and long-run growth

10. At what point or under what circumstances does finance become “excessive”, eg by generating higher volatility of output growth and/or becoming a drag on long-term growth? What channels are relevant?

- A number of studies have focused on determining whether a threshold or an inflection point exists in the relationship between debt and growth. This relationship can be analysed using an extended growth regression model from Cecchetti et al (2011).³³ In this model, real per capita GDP growth is considered as a function of a set of regressors, which include national gross saving to GDP, change in population, schooling, log of real per capita GDP, trade openness, inflation rate, age dependency ratio, liquid domestic liabilities to GDP, total non-financial debt, government debt, private debt, corporate debt and household debt.
- At moderate levels, debt improves welfare and enhances growth. But high levels can be damaging. Results of the study support the view that, beyond a certain level, debt is a drag on growth. For government debt, the threshold is around 85% of GDP. Examination of other types of debt yields similar conclusions. When corporate debt goes beyond 90% of GDP, it becomes a drag on growth. And for household debt, we report a threshold around 85% of GDP, although the impact is very imprecisely estimated.
- The credit channel and how this affects inflation and output or economic growth should be monitored in times when there is excessive finance.

³³ See S Cecchetti, M Mohanty and F Zampolli, “The real effects of debt”, BIS Working Papers, no 352, September 2011.

11. When does exposure to international finance increase macroeconomic volatility and reduce long-run growth? What economic channels and institutional factors are relevant? (See eg recent evidence by Abhijit Banerjee and Atif Mian here.)

- **Traditional literature on the link between financial globalisation and economic growth suggests that financial openness contributes to economic growth in the long run.**³⁴
- **International finance integration is believed to improve the global allocation of capital and reduce consumption volatility.** In theory, better access to global capital boosts economic activities, especially the more productive types of flows. However, the impact of financial integration on macroeconomic volatility and economic growth varies over time across different groups of countries (Kose et al (2003)).³⁵
- **Along with greater financial openness, however, come the appurtenant risks of capital flow surges and sudden stops which could impact the exchange rate, lead to financial crisis contagion and technological disruptions arising from rapid and unregulated financial innovations.**
 - Newer literature such as the paper by Banerjee and Mian (2023) posits that unbridled access to global finance may endanger the growth of EMEs.³⁶
 - The risk of sudden stops or reversals of global capital flows to developing countries has increased in importance, since many developing countries now rely heavily on borrowing from foreign banks or portfolio investment by foreign investors. These capital flows are sensitive not just to domestic conditions in the recipient countries but also to macroeconomic conditions in industrial countries. For instance, Mody and Taylor (2002), using an explicit disequilibrium econometric framework, detect instances of “international capital crunch” – where capital flows to developing countries are curtailed by supply side rationing that reflects industrial country conditions.³⁷ These financial linkages, in addition to the real linkages described in earlier sections, represent an additional channel through which business cycles and other shocks that hit industrial countries can affect developing countries.
 - Kapingura et al (2022) investigate the relationship between financial sector development and macroeconomic volatility in the Southern African Development Community (SADC) region. Findings show that financial openness, as measured by the Chinn-Ito Financial Openness Index, has

³⁴ See M Obstfeld and A Taylor, “Globalization and capital markets”, NBER Working Papers, no 8846, March 2002.

³⁵ See M Kose, E Prasad and M Terrones, “Financial integration and macroeconomic volatility”, IMF Working Papers, no WP/03/50, March 2003.

³⁶ See A Banerjee and A Mian, “Global finance and growth”, slide presentation, 30 August 2003, <https://www.resbank.co.za/content/dam/sarb/what-we-do/research/biennial-conference/updated/presentations/2a.%20Session%20%20-%20Atif%20Mian.pdf>.

³⁷ See A Mody and M Taylor, “International capital crunches: the time-varying role of informational asymmetries”, IMF Working Papers, no 2002/043, February 2002.

contributed significantly to greater macroeconomic volatility through increased exposure to external shocks. The paper further notes that structural characteristics, ie the depth of the financial system, the size, and the trade openness of the economy affected, may exacerbate the impact of these shocks on the economic cycle.³⁸

- Eslamloueyan and Fatemifar (2021) provide evidence on the financial integration-growth volatility nexus. Using panel data consisting of 30 Asian countries, it was found that financial integration without coordinated monetary and fiscal policy among participating countries may lead to greater macroeconomic volatility.³⁹ The paper also underscores the importance of balancing the trade-offs of achieving monetary and fiscal policy objectives among countries aiming to strengthen integration. Results of the models simulated suggest that financial integration in the presence of monetary policy results in financial stability through the credit and exchange rate markets, but may contribute to inflation volatility. Similarly, in the presence of fiscal policy in the model, financial integration promotes interest rate stability but contributes to output growth volatility and inflation uncertainty.
- As much as financial openness can support financial stability, it can also amplify the impact of its attendant risks to other institutional sectors of the economy, including the fiscal and external sectors. Hence, there is a need to:
 - Sequence financial liberalisation properly depending on financial and regulatory systems' level of development;
 - Put in place rapid monitoring systems that track capital flows, especially the more volatile ones, and introduce capital flow management and liberalisation efforts to blunt the adverse impacts; and⁴⁰
 - Adequately regulate the debt- and leverage-creating institutional sectors;

Some financial innovations may indeed be initially disruptive, hence regulation, including "sandboxing" approaches and oversight, are key, without unduly stifling the growth of these sectors.
- **With the ongoing high interest environment due to elevated inflation, financial institutions (eg banks) are most immediately and directly affected.** While this can improve banks' margins, an extended period of high rates can also be associated with more loan losses at banks as their corporate and household

³⁸ See F Kapingura, N Mkosana and S Kusairi, "Financial sector development and macroeconomic volatility: case of the Southern African Development Community region", *Cogent Economics & Finance*, vol 10, no 1, February 2022, 2038861, DOI: 10.1080/23322039.2022.2038861.

³⁹ See K Eslamloueyan and N Fatemifar, "Does deeper financial integration lead to macroeconomic and financial instability in Asia?", *Economic Analysis and Policy*, vol 70, June 2021, 10.1016/j.eap.2021.03.012.

⁴⁰ For example, Bartolazo (2015) proposes a timely and simpler composite capital flow index that may be updated readily and tracks inward capital flows especially of the types that may impact the stock of foreign liabilities. See M Bartolazo, "Developing a Philippine composite capital flow indicator (CCF)", *Bangko Sentral Review 2015*, [BS2015_04.pdf \(bsp.gov.ph\)](#).

borrowers face heavier debt servicing burdens which may adversely affect economic growth.⁴¹

- Based on the IMF's Global Financial Stability Report from October 2023, the ongoing high global interest rates are affecting the cost of financing in emerging market and developing economies. Nonetheless, financial markets of major emerging markets had been resilient up to that point in 2023. Meanwhile, a significant number of frontier and low-income countries continue to face financing challenges due to high debt vulnerabilities.

12. Is there an optimal financial structure that minimises output volatility and maximises long-run growth? How have recent changes in the structure of financial intermediation affected your economy's ability to withstand domestic and external shocks as well as support growth?

- **The financial system is still the most efficient sector to intermediate resources among savers, borrowers and investors.** However, there are information asymmetries between these actors, putting constraints on their budgets, objectives and motives and efficiencies. Therefore, an effective oversight of the financial sector and the other sectors of the economy, as well as macroeconomic discipline and policy coordination (ie with fiscal authorities) are essential. Ensuring well supervised and capitalised banks is key to minimising the volatilities within this sector and preventing spillovers to the broader economy, while allowing and maximising profitability.
- **The BSP is of the view that a well functioning financial system supports productive expansionary business activities and consumption spending, and hence is crucial to promoting economic growth.** The BSP's pursuit of banking and financial reforms in the areas of supervisory policy, banking supervision, financial surveillance and systemic risk stabilises and strengthens the domestic financial system and helps grow financial institutions into regionally competitive and economically viable players.
- **Furthermore, the BSP ensures that the financial system is able to perform its financial intermediation role despite economic shocks.** Financial stability is essential for monetary policy to be effective since fragility of the financial sector can affect the transmission of monetary policy to the real economy.
- **The BSP continues to monitor newer concerns like sustainable financing. The rise of alternative payment systems is still within the ambit of the financial regulators.** While a well functioning financial architecture is deemed a global public good by some, policy coordination and international cooperation on a cross-border level is also essential to minimise disruptive policies of other

⁴¹ See IMF, Global Financial Stability Report, October 2023.

economies and hence financial shocks, as NBFIs have also significantly increased.⁴²

- Some studies show that developed financial markets act as a catalyst in promoting economic growth (Setiawan et al (2021)).⁴³ In the Philippines, **the resilience of the country's banking system is mirrored by promising developments in the domestic capital market, which has continuously supported the financing needs of our country's growing economy.**

The BSP has actively supported the development of the capital markets.

Some of the policies it has implemented include:

- **Incentivising bond issuers** by providing banks and quasi-banks with greater flexibility to finance their liquidity requirements through the capital market and by lowering the reserve requirement rate for bonds.
- **Supporting price discovery and use of reliable benchmarks**, such as the exclusion of market-making positions from the SBL to encourage the fulfilment of market-makers' commitment to provide prices of debt securities in the secondary market; the relaxation of requirements for banks to invest in readily marketable bonds and securities; and the supervisory expectations set on the selection of benchmarks for the performance measurement and reporting of unit investment trust funds (UITFs).
- **Measures promoting investor access and protection**, such as reducing the minimum size for an investment management activities (IMA) account and expanding the securities eligible as investment outlets for co-mingled funds; streamlining the requirements for securities custodians and securities registry; and allowing the pre-termination of non-deliverable FX forwards.
- **Promoting environmental sustainability**, for example by developing and adopting a sustainable finance framework and sustainable finance taxonomy, as well as issuing and financing green, social and sustainability-linked bonds and loans.
- **Crafting policies that improve the operational efficiency** of the Personal Equity and Retirement Account, institutionalising a regulatory sandbox framework and fostering partnerships between financial institutions that have digital platforms.

⁴² See F Allen and A Walther, "Financial architecture and financial stability", Annual Review of Financial Economics, vol 13, August 2021, pp 129–51, Financial Architecture and Financial Stability (annualreviews.org).

⁴³ See B Setiawan, A Saleem, R Nathan, Z Zeman, R Magda and J Barczi, "Financial market development and economic growth: evidence from ASEAN and CEE region", Polish Journal of Management Studies, vol 23, no 2, 2021, pp 481–94, 10.17512/pjms.2021.23.2.29.

Policy measures

13. What structural policy measures are needed in your jurisdiction to support the allocation of finance for long-term growth, including by further developing capital markets? In which markets is there most scope for development? What is the role of the central bank?

Over the years, the BSP has rolled out various regulatory measures to bolster the strength of the financial system and implemented a systematic agenda of policy reforms focused on promoting good corporate governance and effective risk management. This has helped ensure banking stability. **Beyond this, the BSP has worked to support the expansion of the range of products and services made available to the public and the growth of the domestic capital market.**

To this end, reforms pursued by the BSP in coordination with related government entities have been focused towards: (i) incentivising capital market issuers; (ii) supporting price discovery and the use of reliable benchmarks; (iii) promoting investor access to the capital markets and investor protection; (iv) promoting the issuance of Islamic and sustainable bonds; and (v) digital innovation initiatives.

The further development of the Philippine capital markets may be facilitated by reforms to improve: (i) the supply side of capital; (ii) the demand side of capital; and (iii) market infrastructure.

For example, to support the allocation of finance for long-term growth, the government can offer incentives for companies to go public and encourage more company listings on the Philippine Stock Exchange (PSE). In line with this, it may enhance the regulatory environment to encourage more potential investors to participate in the capital market, for instance by improving disclosure requirements and further strengthening corporate governance standards.

Promoting financial literacy is also necessary to increase the public's awareness and understanding of the capital market, which in turn has the potential to increase participation in the market.

In addition, to deepen the capital markets the government may develop new financial instruments that will cater to a wide range of investors.

The government can also implement policies that will encourage foreign investors to participate in the Philippine capital market. Policy reforms such as reducing restrictions on foreign ownership, providing tax incentives and streamlining investment processes are seen to encourage foreign investment. Linking the PSE with other stock exchanges may also increase the foreign investor base in the Philippines.

One of the responsibilities of the BSP as a central bank is to create an enabling environment for the further development of the capital markets. Over the years, the BSP has rolled out various regulatory policies and measures to support the expansion and growth of the domestic markets.

In addition to policies promoting sustainable finance, the BSP has issued regulations to incentivise bond issuers, support price discovery and the use of reliable benchmarks, and promote investor access and protection.

To encourage banks and quasi-banks to issue instruments in the capital markets, in 2018 the BSP amended the regulations to allow a bank or quasi-bank to issue bonds or commercial papers without prior BSP approval, provided that the entity meets the prudential criteria, enrolls and/or trades the bond in an organised market in accordance with the SEC rules and regulations, and submits certain documentary requirements within a prescribed timeline. In 2019, the BSP also reduced the reserve requirement rate for bonds issued by banks and quasi-banks from 6.0% to 3.0%. More recently, the BSP has issued guidelines that gradually reduce the reserve requirement rate to 0% (from 3.0%) against sustainable bonds issued by banks.⁴⁴

Meanwhile, to increase the liquidity in the capital markets, the BSP has excluded certain debt securities holdings resulting from market-making activity for the purpose of determining a bank's compliance with the SBL. The BSP has also loosened the requirements for rural and cooperative banks to invest in readily marketable bonds and other securities without prior BSP approval.

Recently, the BSP adopted a variable rate auction format to facilitate price discovery. This format consists of a predetermined volume for the overnight repurchase facility and a market-determined interest rate. The resulting rate conveys the prevailing cost of and demand for overnight funds in the financial system.

To promote investor access and protection, the BSP also issued amendments to regulations on the investment management activities of BSFIs. The amendment reduced the minimum opening amount for an investment management account (IMA) from PHP 1 million to PHP 100,000 to increase the participation of retail investors. Commingled IMAs are also allowed to invest in a wider range of financial assets, including exchange-traded equities, fixed income securities and commercial papers registered with the SEC.

Moving forward, regulations on non-deliverable FX forward (NDF) contracts involving the Philippine peso shall be amended to allow the pre-termination of these contracts in line with global best practices and risk management. At the same time, the BSP's ability to monitor the extent and nature of cancellations shall be strengthened, as banks will be required to report transactional information on cancelled or rolled-over NDFs to the regulator. The increased flexibility is expected to improve liquidity in the FX market, enhancing price discovery. This in turn will help reduce friction costs for investors.

The derivatives regulations have been amended⁴⁵ to include, as generally authorised derivatives activities for universal and commercial banks, derivatives traded in an organised market where the banks are recognised as participants. This will support the bond forward transactions of BSFIs. The guidelines likewise further rationalise the notification process for derivatives activities and allow for an expanded use of derivatives for unit investment trust funds, subject to guidance and limits that are broadly aligned with international standards. The recent and forthcoming amendment of the derivatives and FX regulations, respectively, support not only trading but hedging activity, which are seen to boost both domestic and foreign investor participation.

⁴⁴ www.bsp.gov.ph/Regulations/Issuances/2023/1185.pdf.

⁴⁵ www.bsp.gov.ph/Regulations/Issuances/2024/1194.pdf

Finally, to widen the reach of financial service providers, the BSP has issued a formal regulatory sandbox framework. A digital financial marketplace framework is also under development. Moving forward, the BSP will likewise study the potential of decentralised finance to support transactions in the domestic capital market.

In addition to the aforementioned policy reforms, as provided for under its mandates, the central bank may also consider supporting bond market liquidity by providing the system with government securities as part of its market operations.

14. How can central banks and other authorities best encourage digital innovations to finance long-term growth while mitigating emerging risks?

With the growing demand for digital financial services, central banks should take a proactive stance in guiding the market towards fulfilling the promises of digital innovations, while ensuring that the financial system remains secure and resilient. Fraudulent activities and cyber security issues should be on the radar given the increased interconnectivity and interoperability of systems. Lastly, through their current and upcoming regulations central banks will further ensure that appropriate measures are in place to provide safety and security among consumers and providers, thereby translating to a safe and secure financial system.

In line with this, the BSP adheres to the following principles, which we refer to as the three Cs, to foster responsible digital innovation:

Commensurate regulations: we strive to enforce commensurate regulations to maintain a forward-looking approach to ensure that regulatory and supervisory frameworks are in tune with emerging trends and developments;

Collaborative engagement: we maintain active collaboration across multiple stakeholders from the public and private sectors; and

Consumer-centric culture: we ensure that innovations work for the benefit of consumers. To do so, we work hard to develop a culture among market players that focuses on customers and gives them the best protection as financial consumers.

With these principles in mind, central banks and other financial authorities can take the following strategic measures to encourage responsible digital innovation:

First, uphold security of data at all stages. It is imperative that central banks adopt an organisational policy on a data governance framework and ethical use of data. They need to make sure that data are protected from unauthorised access, breaches, fraud and misuse, both when they are stored and when they are shared with others. Ways of pursuing this include the use of strong encryption, authentication and monitoring tools to safeguard our data. How market players use and share data to develop and deliver their financial products must be underpinned by sound digital governance standards that safeguard the security and privacy of consumer data. It goes without saying that the framework that institutions adopt should extend to their partners for outsourced and in-house data processes.

Second, espouse technical interoperability. Future-proofing synergies between technology and financial services will require central banks to embrace an ecosystem mindset. This means that data and services can be easily and securely

integrated with other providers, both locally and globally. To do so, central banks need to use common standards, protocols and frameworks to enable seamless connectivity and compatibility.

Lastly, promote digital literacy. It is critical that regulators, in partnership with the private sector, place strategic importance on helping consumers understand the power and value of their personal information, especially in the digital world, so as to achieve and maintain a secure, sustainable and inclusive financial system.

15. What policy actions could further enhance the depth and diversity of the financial system and thus improve the efficient allocation of capital?

Cognisant of the need to improve the depth and diversity of the Philippine financial system, the BSP pursues reforms and landmark regulations that will promote the safety and soundness of the financial system on the back of rapid advancements in technological innovations, an evolving financial ecosystem including advancing Islamic capital markets, and increasing attention towards the attainment of environmental and social (E&S) goals to achieve balanced, equitable and sustainable economic growth.

On sustainable finance, the BSP actively collaborates with development partners to conduct climate stress testing exercises and develop a sustainable finance taxonomy⁴⁶ that is initially focusing on climate change mitigation and adaptation but will later cover biodiversity, circular economy and other social aspects. Furthermore, the BSP will update its disclosure requirements on sustainable finance in line with the IFRS Sustainability Disclosure Standards and amendments to the Basel Pillar 3 disclosure framework.

The initiatives related to green finance ensure that environmentally sustainable initiatives are accessible to all, including the underserved populations.

Meanwhile, a well developed capital market facilitates access to capital for businesses and individuals. This can enhance financial inclusion by offering alternative avenues for funding and investment. Consumer protection measures, such as transparent disclosures and fair trading practices, contribute to the overall integrity and stability of the capital market.

Information asymmetry, especially adverse selection, can likewise hamper the efficient allocation of capital. Creating institutions that reduce information asymmetries, such as a credit information agency, or implementing credit risk databases, as well as increasing the availability of collateral can help deepen the financial system. Reducing information asymmetry can lead to better pricing of loans and access to finance.

The BSP also remains committed to championing Islamic banking and finance through ongoing policy initiatives, including the study of the policy framework on profit-sharing investment accounts, the licensing framework on sukuk issuance, and

⁴⁶ The Philippine Sustainable Finance Taxonomy Guidelines were adopted by the BSP and the SEC in their respective regulatory issuances in February 2024.

the capital adequacy ratio for Islamic banks and Islamic banking units of conventional banks. The BSP is also looking to formulate tailored rules for extending financial facilities to Islamic banks. The BSP will continue to forge synergies with domestic and international stakeholders in fostering regulatory reforms and infrastructures that encourage the entry of more Islamic finance players into the country. The inter-agency collaboration is expected to advance other prudential reforms in the field of takaful and the Islamic capital market.

The BSP has also taken a proactive stance in guiding the market towards the fulfilment of the digital transformation, while ensuring that the financial system remains secure and resilient. In this regard, the BSP will be issuing regulations on a digital financial marketplace model⁴⁷ where banks and other qualified BSP-regulated/-supervised entities may forge strategic and meaningful partnerships with other financial service providers to enable them to access a range of select financial products and services through a one-stop-shop digital platform. The BSP will also assess the effectiveness of the digital banking framework as part of its supervisory policy review.

As financial services increasingly rely on technology, ensuring cyber security is essential for maintaining trust in digital financial systems. Cyber security measures contribute to the reliability and security of digital financial services, promoting financial inclusion by encouraging trust in online transactions. Therefore, it is important that robust cyber security measures are in place to maintain consumer trust in digital financial services.

Beyond the policy actions on the part of the central bank, other government agencies can also undertake initiatives to promote the depth and diversity of the financial system.

- For example, programmes on increasing financial literacy, which can be undertaken by a wide variety of entities, can promote increased investor participation in the financial markets. Broader consumer protection initiatives can also further build investor confidence.
- Meanwhile, the Bureau of the Treasury (BTr) has continued to introduce new products such as sovereign sukuk and tokenised treasury bonds and has promoted the increasing digitalisation of the issuance of government debt.
- Finally, the Department of Finance is pushing for the passage of the Passive Income and Financial Intermediaries Taxation Act (PIFITA), which aims to boost capital market development efforts. The bill contains measures to simplify and rationalise the tax regime for passive income, financial services and financial transactions.

⁴⁷ The BSP is exploring the potential adoption of a digital marketplace banking model by U/KBs, digital banks and EMIs. Anchoring on the implementation of the Open Finance Framework, the BSP anticipates the emergence of new business models and arrangements which will further drive innovation and bring more value to customers. The adoption of a digital marketplace banking model will be underpinned by a sound governance and risk management system, including an effective information-sharing arrangement to ensure that attendant risks are adequately managed and consumer interests are protected.

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Key changes in the Polish financial system in recent years¹

Narodowy Bank Polski

The size and key characteristics of the Polish financial system at the end of 2022

At the end of 2022, the value of assets of the Polish financial system amounted to PLN 3.6 trillion (around EUR 767 billion; Chart 1). The banking sector remained the largest segment – the value of banks' assets was PLN 2,715.3 billion, i.e. 73% of financial system assets.² As for non-bank financial intermediaries, the largest segments were, respectively: (i) investment funds, with assets amounting to PLN 283.0 billion; (ii) insurance corporations – PLN 183.6 billion; and (iii) open pension funds – PLN 156.3 billion.

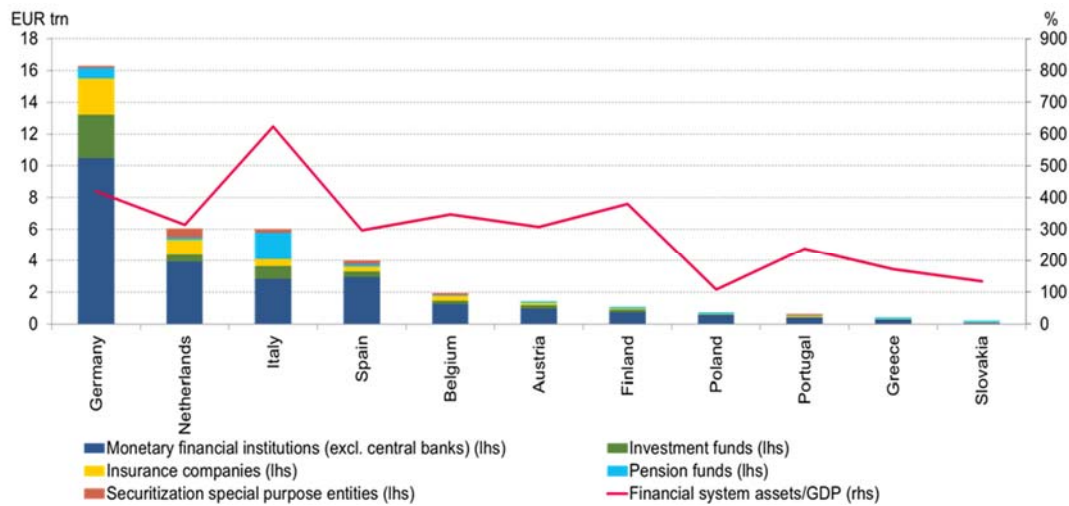
Amid relatively robust economic performance, the ratio of domestic financial system assets to GDP in Poland in 2022 reached merely 117.0%, less than in Hungary (141.1%), Slovakia (138.6%) or Czechia (162.7%). The same measure of financial system development for euro area countries was, on average, 515.6% at the end of 2022, indicating a low to medium level of financial intermediation in Poland, but also in other countries of central and eastern Europe (CEE).

¹ This note is to a large extent based on the Narodowy Bank Polski (NBP) report, *Rozwój systemu finansowego w Polsce w 2022 r.* (*Financial system in Poland 2022*), November 2023.

² Share of 73% when counting only financial institutions supervised by state agencies. When institutions which are not supervised (eg leasing, factoring) are included, banks' share is 69%.

Financial system assets in selected EU countries, 2022

Chart 1

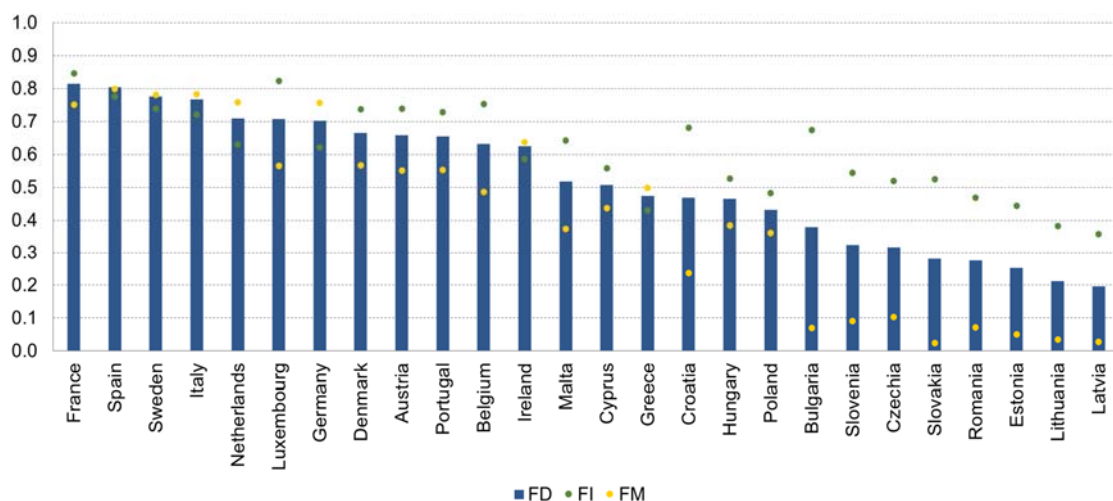


Source: NBP, Financial system in Poland 2022, November 2023.

Similar conclusions can be drawn from the IMF-developed Financial Development Index for Poland, which equals 0.431 in 2021 (the latest available data), situating it in the group of countries with a medium level of financial development³ (Chart 2).

Indicator of financial system development, development of financial institutions and financial markets in EU countries, 2021

Chart 2



Source: NBP, Financial system in Poland 2022, November 2023.

³ The level of development of individual segments of Poland's financial system is reflected by the development of financial institutions (FI) and financial markets (FM) sub-indices, which comprise the overall financial development index (FDI). In recent years, the development of the Polish financial system has been based on financial institutions (banking sector), with financial markets being less important.

The banking sector was the largest provider of non-financial sector (NFS) funding in Poland and lending to this sector constituted the largest part of banks' assets (41.9%). The second largest item in the banks' portfolio was securities (29.9%), mainly Treasury bonds.

The value of bank loans to the NFS in relation to GDP was 37.1% at the end of 2022. The ratio of loans to GDP placed Poland well below the average in the European Union (EU) and CEE (Chart 3). In 2022, this ratio fell faster than in most European countries as a result of the slowdown in lending and the high growth of nominal GDP. The lending activity of banks in Poland, contrary to most EU countries, focused on households (Chart 4). The share of loans to enterprises in the portfolio of loans to the NFS remains one of the lowest in the EU.

Chart 3. Bank credit to non-financial sector/GDP in selected countries/regions of Europe, 2018–22

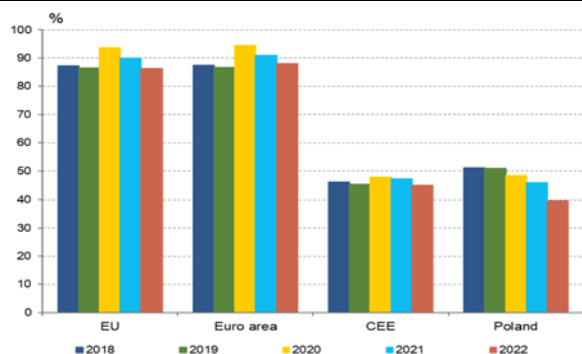
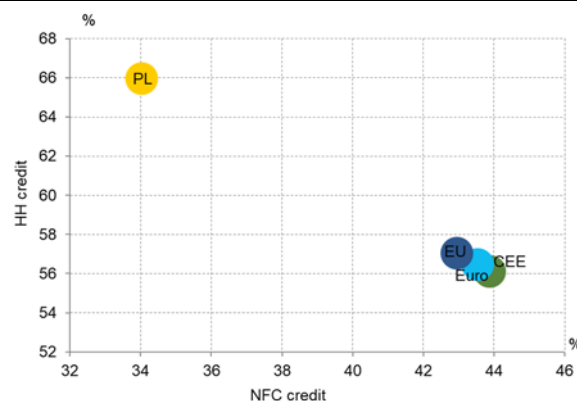


Chart 4. Structure of credit to non-financial sector in selected countries/regions of Europe, 2022



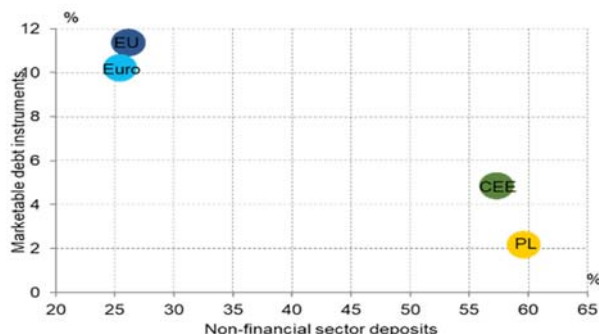
Source: NBP, Financial system in Poland 2022, November 2023.

The structure of liabilities of banks operating in Poland was similar to the banking sectors of other CEE countries and many emerging market economies, but differed significantly from the banking sector of the euro area (Chart 5). NFS deposits predominated, and the share of liabilities arising from the issuance of debt securities was among the lowest.

The capitalisation of the domestic equity market at the end of 2022 amounted to PLN 1,114.2 billion, and the ratio of the capitalisation of domestic companies to Poland's GDP was 18.7%. Treasury bonds remained the largest segment of the domestic market for long-term debt securities in 2022, followed by bonds guaranteed by the State Treasury, corporate bonds and municipal bonds. Domestic banks continued to predominate in the investor structure.

Share of deposits and marketable debt instruments in liabilities of banking sectors of selected countries/regions of Europe, 2022

Chart 5



Source: NBP, Financial system in Poland 2022, November 2023.

Key changes in the Polish financial system in 2018–22

In the period 2018–22, the value of Polish financial system assets increased by 37%. However, in relation to GDP the financial system has shrunk by 11.7 pp since 2018, continuing the trend that emerged in 2016–17. The increase in financial sector assets has resulted primarily from the growth in banking sector assets (by 44%) and leasing companies (by 24%). Assets of investment and pension funds, as well as insurance companies, have even decreased nominally (Chart 6; Annex Table 1).

As a consequence, the share of the banking sector in the financial system⁴ has risen from 69% to 75% of GDP, while the share of all non-bank financial institutions has decreased by 6 pp (to 25% of GDP).

The key source of growth in banking sector assets was the portfolio of securities, primarily T-bonds and NBP bills, which grew by 84% over the four years. At the same time, bank lending increased by merely 13.5%.

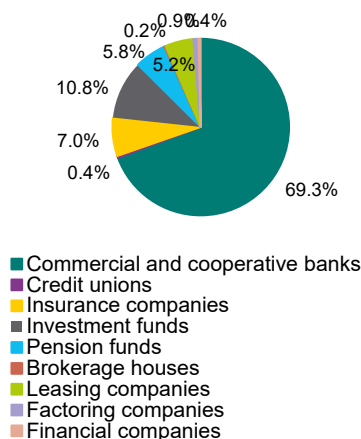
On the liability side, the prime source of funding was deposits by the non-financial sector (households and firms), which grew by 47% over the same period. An important change was a reduction in foreign funding of banks. Much faster growth of deposits than credit related to the domestic non-financial sector resulted in closure of the bank funding gap and, later, a high surplus of deposits over credit (the credit/deposit ratio decreased to 0.7).

⁴ Together with non-supervised financial institutions.

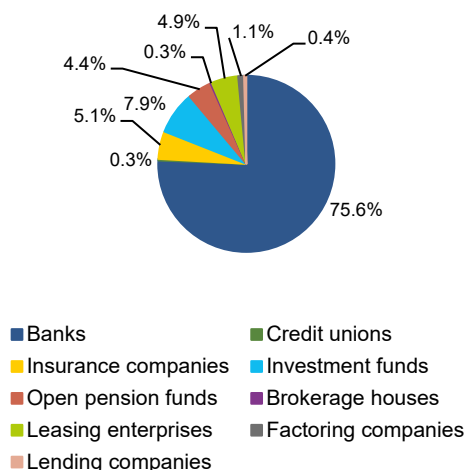
Share of types of financial institutions in Polish financial system assets in 2018 and 2022

Chart 6

A. 2018



B. 2022



Source: NBP, Financial system in Poland 2022, November 2023.

The Warsaw Stock Exchange (WSE) has been the largest stock market in the region. However, the role of capital markets in financing the economy has also decreased in recent years (see Table 2). Between 2018 and 2022, the overall value of equities (domestic and foreign firms) listed on organised markets (primarily the WSE) decreased from EUR 136.3 billion to EUR 122.5 billion, while the ratio of equity market capitalisation to GDP fell even more – from 27.7% to 19.1%. The market value of listed domestic companies decreased from PLN 701.2 billion to PLN 574.7 billion, and its ratio to GDP (18.7%) was the lowest in 20 years.

Similar tendencies occurred in the markets for debt instruments (bonds) issued by banks and non-financial corporations. Conversely, the market for Treasury bonds, as well as bonds guaranteed by the State Treasury, has grown substantially – the former from PLN 627.2 billion to PLN 862.9 billion; the latter from PLN 18.5 billion to PLN 223.8 billion. The only segment of the Polish private capital market which experienced an increase in the value of outstanding instruments was local government bonds, but the value of the issues was quite insignificant.

Have the tendencies been specific to Poland or region-wide?

Poland lags behind other CEE countries and the euro area as far as the size of the financial system and banking system in relation to GDP are concerned (Table 1 below and Annex Table 2). In the analysed period, this divergence widened. Czechia was the only country where those ratios fell similarly to Poland.

Ratio of financial system assets to GDP in selected CEE countries and the euro area, 2018–22

Table 1

In per cent	2018	2019	2020	2021	2022
Poland	128.7	124.6	136.6	133.0	117.0
Czechia	171.8	162.7	173.1	173.0	162.7
Slovakia	125.8	128.0	138.7	145.8	138.6
Hungary	132.3	121.5	142.6	146.0	141.1
Euro area	466.0	508.6	564.3	562.0	515.6

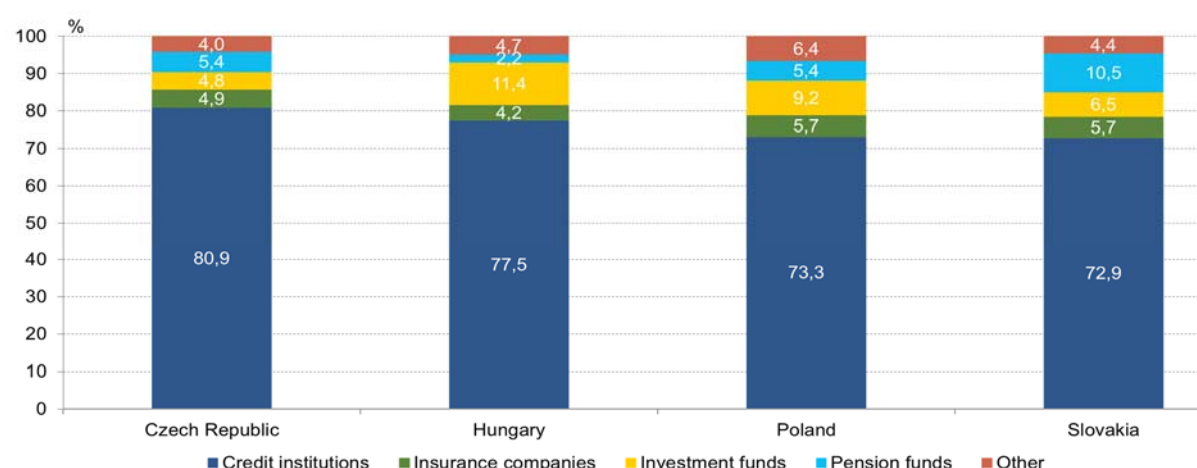
Comprises assets of the following sectors: monetary institutions (excluding central banks), insurance, investment and pension funds, securitisation vehicles, leasing and factoring firms, finance companies, investment companies.

Source: NBP, Financial system in Poland 2022, November 2023.

Credit institutions play a major role in the financial system in CEE countries and Poland alike, accounting for 75–81% of the assets of their financial systems (Chart 7).

Structure of the financial systems of selected EU CEE countries in 2022, by assets

Chart 7



The category "Other" includes assets of leasing, factoring and finance companies, as well as brokerage houses.

Source: NBP, Financial system in Poland 2022, November 2023.

The Polish financial market was the largest in the CEE region both in terms of the value of the instruments and in relation to GDP. Table 2 below compares equity markets in some CEE countries and the euro area.

Characteristics of organised stock markets in selected CEE countries and the euro area¹

Table 2

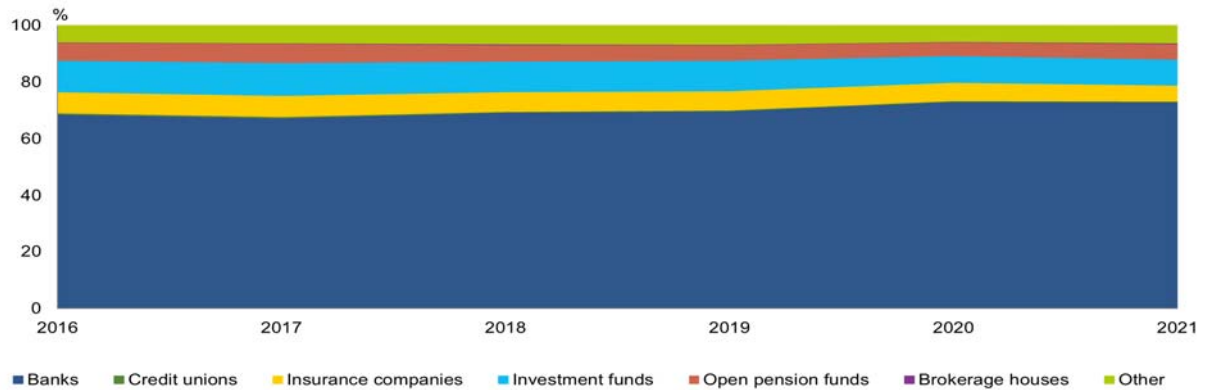
	Capitalisation of listed domestic companies (EUR bn)			Capitalisation of listed domestic companies in relation to GDP (%)		
	2020	2021	2022	2020	2021	2022
Poland ²	120.8	156.6	122.5	23.8	27.4	19.1
Czechia	21.8	33.0	26.9	10.1	14.2	9.8
Hungary	22.8	27.8	22.3	16.8	18.3	13.1
Euro area ³	8,886.6	11,897.8	10,020.3	78.0	97.0	75.0
	Liquidity index ⁴ (%)			Number of listed companies (of which foreign)		
	2020	2021	2022	2020	2021	2022
Poland ²	50.9	39.2	44.6	806 (54)	810 (51)	794 (48)
Czechia	15.7	13.0	19.6	55 (35)	55 (34)	59 (35)
Hungary	48.7	39.9	44.9	45 (0)	50 (0)	63 (1)
Euro area ³	58.2	45.0	52.1	7,077 (1,202)	7,635 (1,302)	6,511 (1,289)

¹ Also contains data from alternative trading platforms, if applicable. ² The values for Poland are based on data from the WSE and Statistics Poland using average exchange rates at the end of specific years. ³ The values for the euro area are based on data from: Athens Exchange, Cyprus Stock Exchange, Deutsche Börse, Euronext, Ljubljana Stock Exchange, Luxembourg Stock Exchange, Malta Stock Exchange, NASDAQ OMX Nordics & Baltics, Spanish Exchanges (BME) and Wiener Börse. ⁴ The ratio of net turnover to capitalisation of listed domestic companies at the end of the given year.

Source: NBP, Financial system in Poland 2022, November 2023.

The development of non-bank financial intermediaries (NBFIs)

The non-bank financial sector did not expand in 2018–22 and its role in the financial system and the economy did not change much (Chart 8). The low interest rate environment encouraged neither Polish households nor firms to diversify their investment and savings. The three largest segments were insurance, investment and pension funds.



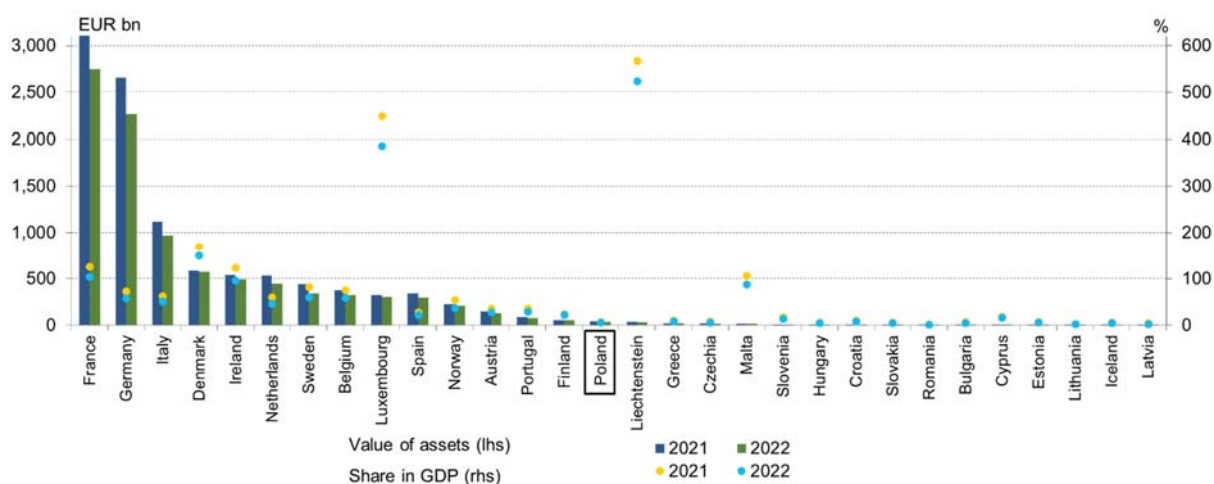
Source: NBP, Financial system in Poland 2022, November 2023.

Insurance sector

In Poland, the insurance sector did not expand in the analysed period. On the contrary, the value of its assets has fallen by 3.5% since 2018, in spite of the fact that the assets of the domestic insurance sector were already significantly smaller than in Europe (Chart 9). At the end of 2022, the value of assets of domestic insurance companies accounted for only 0.4% of the entire European sector, which placed Poland in 15th place among the EEA countries. Despite this, Poland has been the largest market in CEE. The ratio of assets of insurance companies to GDP at the end of 2022 was 6%, while the EEA average was 57%. Premiums collected by insurance companies active in Poland accounted for approximately 1.1% of the European contribution. Domestic non-life reinsurance activity was also below the European average. Only 6% of the premium came from active reinsurance, while in the EEA countries it was 27%.

Value of insurance sector assets and its relation to GDP in EEA countries, 2021–22

Chart 9

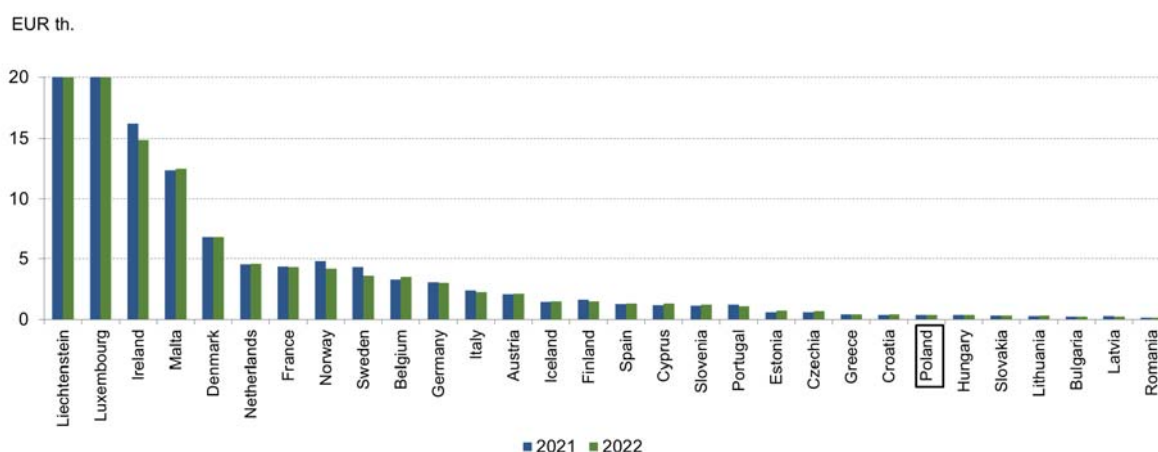


Source: NBP, Financial system in Poland 2022, November 2023.

The small size of the insurance sector was associated with the fact that Poland had one of the lowest insurance penetration rates; only seven EEA countries had a lower contribution to GDP ratio. In 2022, the contribution per capita in Poland was approximately EUR 390, while in the EEA it was EUR 2,600 (Chart 10).

Gross written premiums per capita in EEA countries, 2021–22

Chart 10



Premiums presented relate only to direct insurances. Outside the chart, data are for Liechtenstein (EUR 90.5 thousand and EUR 101.3 thousand), as well as Luxembourg (EUR 67.8 thousand and EUR 63.1 thousand).

Source: NBP, Financial system in Poland 2022, November 2023.

In recent years, premiums have increased in Poland, mainly due to property insurance, while life insurance premiums have decreased. Non-life insurance is generating more than twice as much revenue as life insurance. In other CEE countries, there has also been a predominance of non-life insurance premiums over life

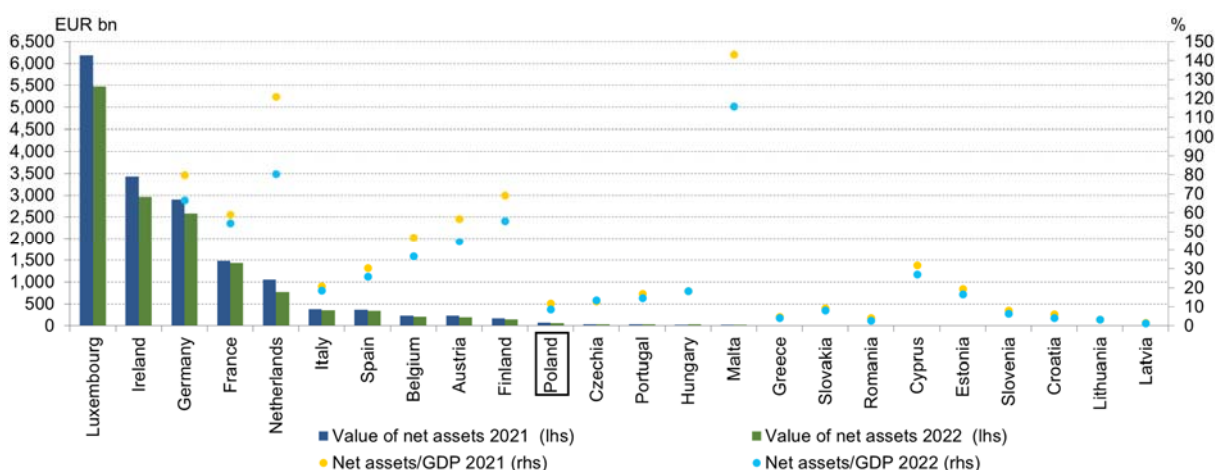
insurance premiums. The key source of growth of property insurance in Poland has been a compulsory third-party liability insurance for motor vehicle owners. Insurance of houses has been much less popular.

Investment fund sector

Poland has the largest share in the European market of investment funds among the countries that joined the EU in 2004, but the dynamics of growth in domestic sector net assets in the last 10 years was lower than in the other countries from this group. The growth rate of domestic investment funds' assets has slowed down visibly since 2015. A significant fall occurred in 2022, when the value of investment fund assets in relation to GDP slid to 9%, from 12% in 2021. At the end of 2022, the share of Polish investment funds in the European sector amounted to only 0.4% (Chart 11). Specifically, the value of assets of equity and mixed investment funds in relation to the capitalisation of the WSE has been several times lower than in the EU.

Net assets of investment funds of selected EU countries and relation to GDP, 2021–22

Chart 11



The data do not include money market funds, as they are part of the monetary financial institutions sector. The relation of net fund assets to GDP for Luxembourg and Ireland was 7,005% and 585%, respectively at the end of 2022 and 8,551% and 790% at the end of 2021.

Source: NBP, Financial system in Poland 2022, November 2023.

In the analysed period, the rate of decline in the value of net assets of Polish investment funds was higher than the EU average. The main reason for the reduction in EU countries was valuation effects, while in Poland the outflow of investors was more important.

Pension funds sector

In Poland, dedicated savings for retirement take three forms (pillars):

- Individual retirement accounts in the public social insurance fund (ZUS – Pillar I);

- Obligatory retirement savings in open pension funds (OFE – Pillar II); and
- Voluntary retirement schemes which are offered by various financial institutions to employees (PPE, PPK – Pillar III) and individual savers (IKE, IKZE – Pillar III).

Pillar III schemes differ primarily with regard to tax reliefs and the maximum value of contributions paid.

At the end of 2022, the net assets (NAV) of open pension funds were 15.2% lower than a year earlier and amounted to PLN 156.3 billion. Their value had decreased due to the fall in the valuation of their assets.

In 2022, voluntary retirement savings increased to PLN 51.9 billion (by 12.2%), and thus accounted for 2.9% of household financial assets. Among all institutions, the most pension funds were accumulated in investment funds (PLN 31.5 billion). In addition, insurance companies managed voluntary pension savings worth PLN 7.1 billion, followed by entities conducting brokerage activities and banks.

The role of non-bank financial intermediaries in placing household savings/investments as well as financing the economy

Household savings

In 2022, the ratio of financial assets held voluntarily⁵ by Polish households to GDP reached 58.6%, having fallen by 2.3 percentage points in the period 2018–22. The structure of household sector financial assets is presented in Chart 12 and Annex Table 3.

Polish households have been generally risk-averse and preferred safe ways of managing financial surpluses by keeping their savings primarily in the form of bank deposits and cash. This approach has not changed despite the fact that low interest rates on bank deposits should have encouraged households to look for more profitable forms of capital investment than deposits. The share of cash and bank deposits has even increased slightly, compared to the pre-Covid period, to reach 80%. In 2022, the increase in bank deposits was lower than in the previous year, but the share of deposits in assets increased to 60.7%.

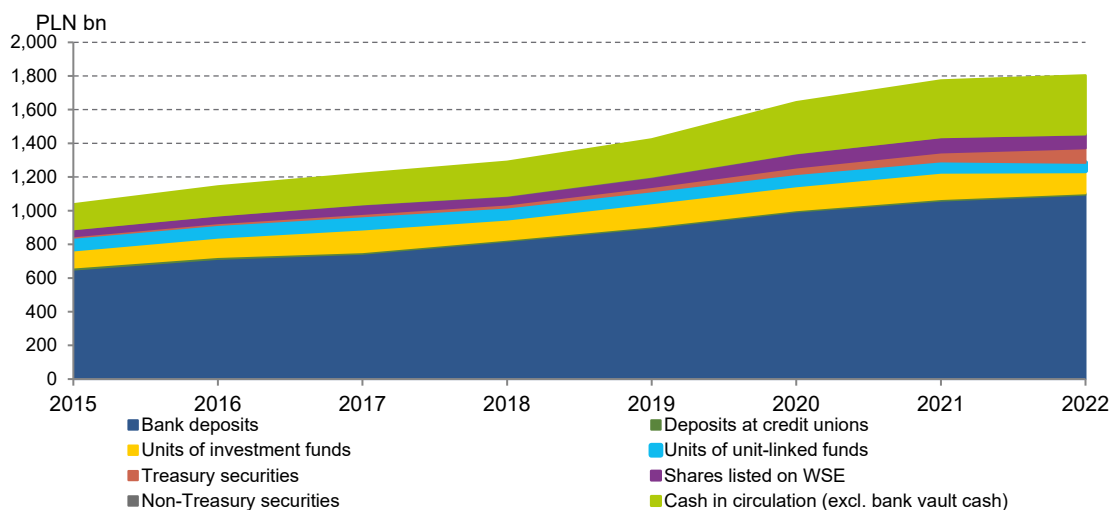
There was a significant decline in household interest in investment fund participation units and life insurance products, whose share in household savings fell by over 30% in 2018–22, to only 10% at the end of 2022. This resulted from the redemption of funds, as well as a decline in the valuation of assets. Such behaviour was primarily the result of high uncertainty related to the pandemic (2020–21) and political risk in the region connected with the Russian-Ukrainian war (February 2022–present). Major outflows from investment funds occurred in March 2020 as a consequence of disruptions in global financial markets, as well as in February–March 2022, when the war in Ukraine erupted. As a result, the ratio of funds accumulated by

⁵ Excluding obligatory retirement savings in open pension funds.

households in investment funds to the value of bank deposits decreased from approximately 16% to 12.4%.

The structure of households' financial assets¹ in 2015–22, end of year

Chart 12



¹ Only financial assets held on a voluntary basis.

Source: NBP, Financial system in Poland 2022, November 2023.

The value of life insurance products in the household portfolio fell – unit-linked insurance premiums (UFK) specifically. Withdrawal of funds from UFK products has been the result of, inter alia, abuses in the distribution of these products, like offering long-term investment insurance to elderly people, and excessive fees, in particular liquidation fees for customers withdrawing from UFKs. The Office of Competition and Consumer Protection has imposed fines on insurance companies several times for applying these liquidation fees. Recently, in addition to valuation effects, the dominant factor limiting the development of the UFK sector has been the product intervention by the Polish Financial Supervision Authority (PFSA) in force since 1 January 2022. This has primarily had an impact through a lower inflow of new premiums.

Direct holdings of financial instruments by households in the form of Treasury bonds and equities have increased in recent years. As regards the former, its share in the household portfolio has risen from 1.9% to 4.9%. This was the result of a search for yield (2020–21) and inflation protection (2022). The rise of interest in direct holdings of equities by households could probably be attributed to the high cost of participation in equity investment funds.

Non-financial enterprises' savings

The role of the non-banking financial sector as a vehicle for managing financial assets of non-financial corporations shrank in the period 2018–22, while the importance of banks increased.

Firms invested their surpluses in banks, investment funds and bonds. The largest share of funds was placed in banks – the value of firms' (current and term) deposits has grown by 61% since 2018, reaching PLN 464.6 billion in 2022.

Firms also bought share units and investment certificates issued by investment funds. However, the role of these vehicles for firms has significantly decreased in the last few years. This particularly concerns their investments in closed-end investment funds – the share of firms as buyers of investment certificates fell from 40.2% in 2018 to 22.3% in 2022. An important factor was the change of regulations affecting the possibility of tax optimisation. A statistical factor also played some role – the change to the statistical qualification of some enterprises. As regards the use of open-ended investment funds, Polish enterprises were less important investors, with a quite stable 3–4% share in the sector's assets. Enterprises were also buyers of corporate bonds. These were primarily issues conducted by another entity of the same capital group.

Household financing

Again, banks have been playing a dominant role. They have been practically the sole provider of mortgage loans. Among non-banking financial institutions, only finance companies and credit unions have provided financing to the household sector, but they were financing other household needs. In the analysed period, the share of these vehicles in the financing of consumer needs was rather small and relatively stable.

Non-financial enterprises' financing

The level of domestic debt of non-financial enterprises in Poland has been moderate. Bank credit has been a prime domestic source of financing of Poland's non-financial sector. The role of non-banking financial institutions and capital markets has been very limited, with the exception of leasing (especially in the case of small and medium-sized enterprises (SMEs)). An important role of foreign financing and, recently, public sector financing is presented in the following subsections.

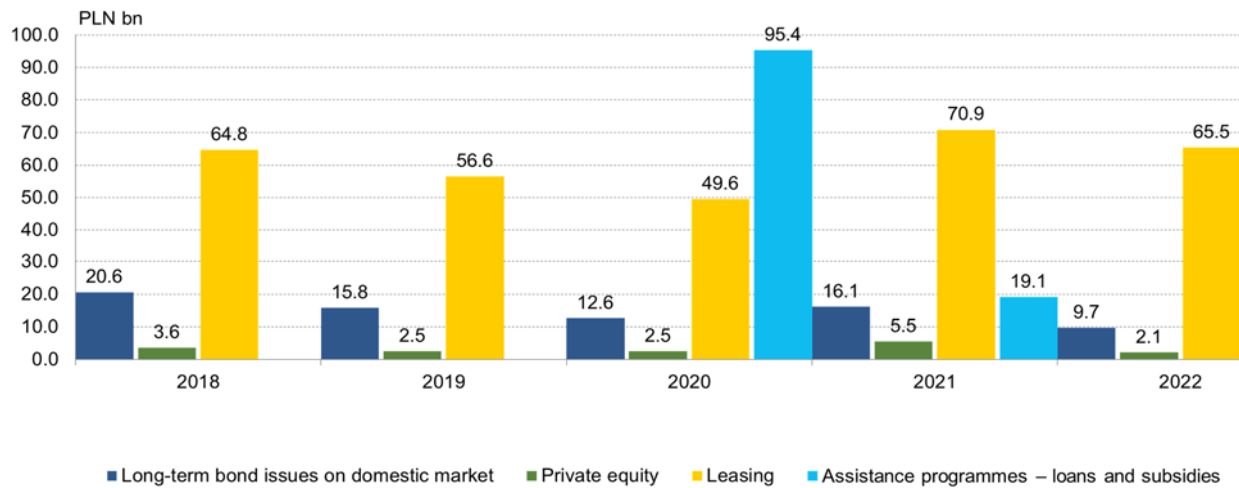
In 2018–22, the value of bank financing of enterprises increased very moderately. Bank credit increased by 11.7%, reaching the level of PLN 375.7 billion. This slow increase was mainly due to demand factors resulting from high uncertainty in the economic environment. Due to the slow growth of credit and high growth of deposits, non-financial corporations became net lenders to banks.

Leasing, trade credit and current credit⁶ were the most important external sources of financing for SMEs in Poland in 2022 (for non-banking sources see Chart 13). According to research conducted by the European Commission (SAFE), 40.2% of SMEs used leasing, which placed Poland in first place in the EU (the EU average was 21.5%), 34.1% used trade credit (third place in the EU; the EU average was 15.1%) and 33.1% used current loans (10th position in the EU; the EU average was 27.5%; Chart 14).

⁶ In the form of credit lines, bank overdrafts and credit card overdrafts.

Selected non-bank sources of financing of Polish enterprises, 2018–22

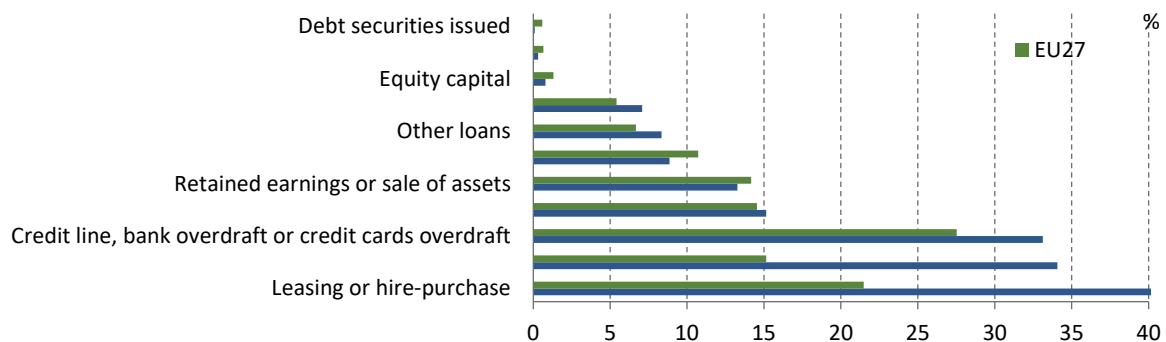
Chart 13



Source: NBP, Financial system in Poland 2022, November 2023.

Share of SMEs utilising specific sources of funding (Poland and EU 27 countries, 2022)

Chart 14

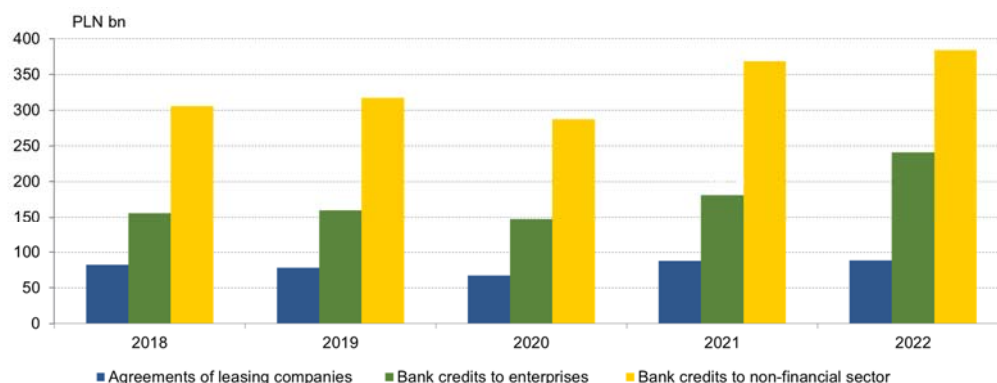


Source: NBP, Financial system in Poland 2022, November 2023; data based on European Commission, Survey on the access to finance of enterprises (SAFE) 2022, December.

The financing provided by leasing companies in 2022 accounted for approximately 37% (close to 50% in 2021) of the value of new loans to enterprises (Chart 15). This ratio was rather stable during the recent period.

Value of new bank credits to enterprises and whole of the non-financial sector vs new leasing agreements, 2018–22

Chart 15



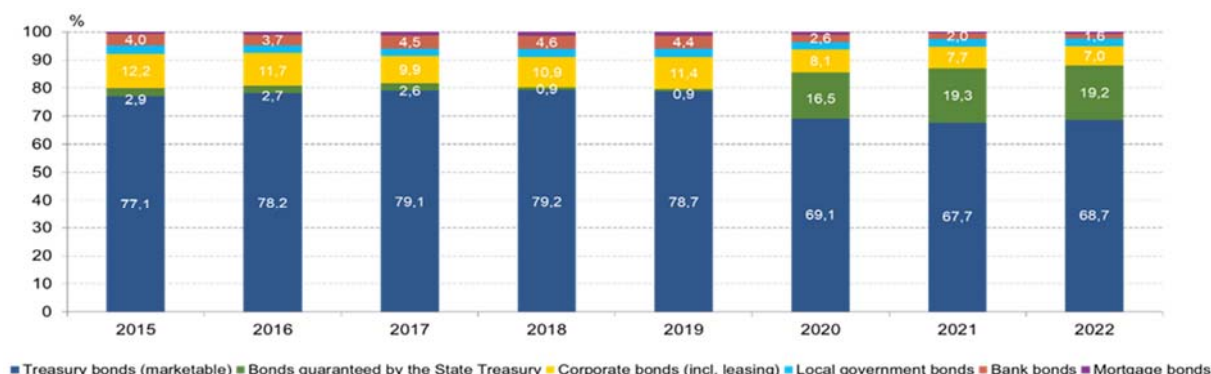
Credit in all currencies, but without renegotiated credit.

Source: NBP, Financial system in Poland 2022, November 2023.

The ratio of corporate bond debt to GDP in 2022 decreased to 2.6%, while in the euro area it was approximately 40%. The outstanding value of corporate bonds issued by non-financial enterprises in 2022 was PLN 66.5 billion, while the value of new issues of long-term corporate debt securities decreased from PLN 20.6 billion in 2018 to PLN 9.7 billion in 2022. The key reasons for this were a deterioration of macroeconomic prospects and a significant increase in uncertainty following Russia's aggression against Ukraine, as well as a substantial rise in market funding costs in 2022. The bond market was dominated by Treasury bond issues (Chart 16).

Structure of issuers of marketable bonds in the Polish domestic market, 2015–22 (outstanding, end of period)

Chart 16



The "Treasury bonds" category does not include savings bonds.

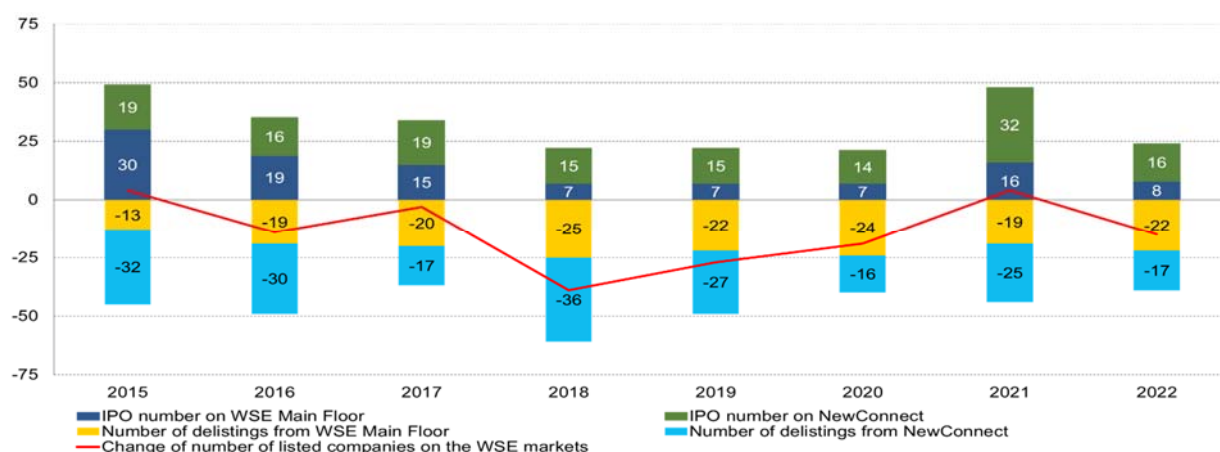
Source: NBP, Financial system in Poland 2022, November 2023.

The Polish capital market, despite being the largest among CEE countries, has contributed only modestly to financing long-run growth in recent years. The

capitalisation of the WSE Main Market declined to PLN 1,114.2 billion at the end of 2022 and was lower by 2% compared to the end of 2018. The ratio of the capitalisation of domestic companies to GDP fell from 27% to 19.1%, the lowest level in 20 years. Global equity markets, including the WSE, experienced a significant decline in the prices of equity instruments, chiefly due to the war in Ukraine, a rise of financing costs and the deteriorating economic outlook. The WIG20 market index declined by 10% in 2020 and 17.1% in 2022, rising in the meantime by 15% in 2021. In 2022, shares of only eight companies were admitted to trading on the WSE Main Market (Chart 17) – all graduated from the parallel market (NewConnect) – and the total value of IPOs amounted to merely PLN 39.7 million (Chart 18). By contrast, shares of 22 entities were withdrawn from trading, most often as a result of a decision of the main shareholder. In 2022, both issuers and investors were less interested in the NewConnect market than in previous years. All these figures indicate that the importance of the stock exchange as a source of funding for Polish enterprises has decreased in recent years.

Change in the number of listed companies on WSE markets, 2015–22

Chart 17

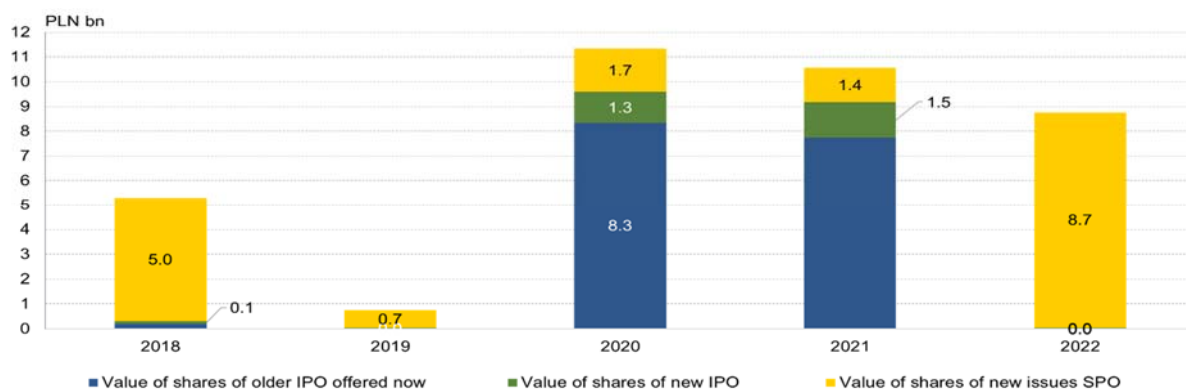


The number of IPOs on the WSE Main Market and the number of de-listings from NewConnect take into account those companies which were graduated from NewConnect to the WSE Main Market.

Source: NBP, Financial system in Poland 2022, November 2023.

Value of shares admitted to trading on the WSE Main Market, 2018–22

Chart 18

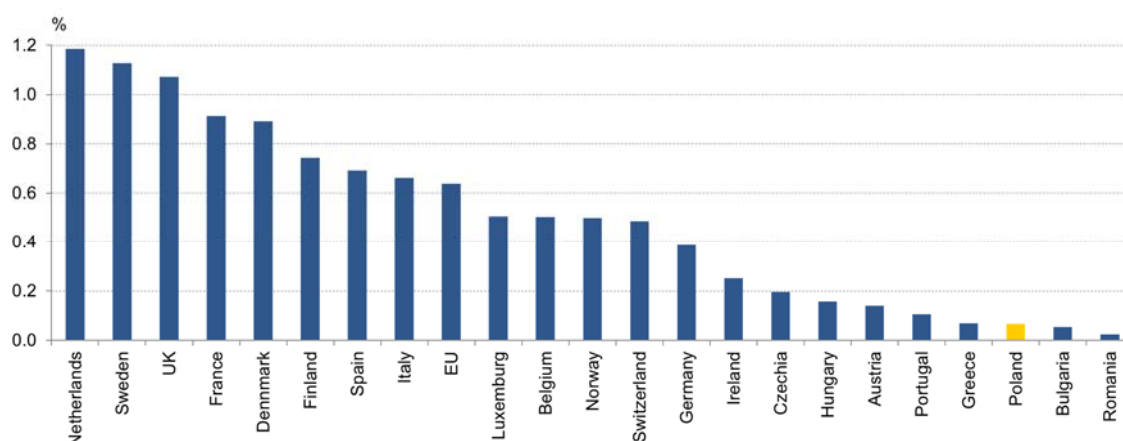


Source: NBP, Financial system in Poland 2022, November 2023.

Private equity⁷ firms were the smallest, but a not unimportant source of funding for the corporate sector in the analysed period. The size of financing has remained small (just 0.1% of GDP in 2022; Chart 19), but more than 75% of these enterprises have been in the initial stages of development (the so-called seed and startup stages), so their investments should be classified as venture capital. In the analysed period, financing was provided to nearly 100 domestic enterprises from the information and telecommunications technology industry, i.e. those primarily specialising in the production of goods and services enabling electronic recording and processing of information. The public sector was an important source of funds for private equity investments. In 2022, more than 40% of the funds obtained for private equity investments came from this source.

Value of private equity investments in selected European countries to GDP, 2022

Chart 19



Source: NBP, Financial system in Poland 2022, November 2023.

⁷ In Poland, this sector is characterised by a variety of structures and business models used to conduct business.

Insurance companies have not financed the real economy on a large scale. At the end of 2022, debt instruments issued by non-financial sector entities and loans granted to these entities accounted for only 3% of insurance companies' investments. Compared to the end of 2021, the value of financing granted decreased from PLN 6.3 billion to PLN 5.5 billion. More than half of this value was the debt of foreign entities. Investments in real estate were not very popular either – most of these consisted of properties for insurance companies' own use.

The value of bonds of non-financial enterprises held by investment funds shrank by over 17%. At the end of the year, it amounted to PLN 30.9 billion (compared to PLN 37.3 billion a year earlier), of which PLN 10.5 billion was in open-end funds and PLN 20.4 billion in closed-end funds. More than 60% of this portfolio consisted of securities of domestic enterprises.

Key factors inhibiting development of the non-bank financial sector in Poland

Two types of factors have affected the development of the non-bank financial sector since 2018 – long-term structural and short-term cyclical factors.

The key longer-term factor negatively affecting the development of the whole non-bank financial sector has been the low savings rate in Poland and relatively low level of financial wealth. According to Eurostat data, in the years 2010–19 the savings rate in Poland ranged between 2 and 5%, while at the same time in the EU it was 11–13%. At the same time, Poles have up to four times less in financial assets in relation to GDP than people living in western European countries. This shortage of financial buffers contributed to household risk aversion and caused more than half of their assets to remain invested in bank deposits. Another structural factor has been the still low level of financial awareness, especially when it comes to long-term saving, despite efforts on the side of governments to promote more active savings for future retirement.

The factor which contributes to slow growth of investment funds and asset managers is dominance of conservative-type investors in Poland. Except for bank deposits, the largest part of household savings is invested in debt funds (equity funds in the EU). Polish investors have rather short investment horizons and keep fund participation titles, on average, a much shorter time than investors from other EU countries. The behaviour of households is an important barrier as this type of investor dominates the structure of buyers of participation units in Poland (as opposed to institutional investors in the euro area).

Another important factor is the level of fees paid by investment fund participants, which are still much higher compared to other European funds. High costs borne by retail investors can be a result of the fragmentation of the domestic investment fund sector (a large number of funds with relatively small assets), while in the euro area there is a growing importance of very large funds. The cost aspect has been relevant especially in the low interest rate and low growth environment. In other countries, this has caused a strong increase in the offer of low-cost funds. Unfortunately, the rapid development of exchange-traded funds observed globally has been absent in Poland due to existing domestic legal barriers.

Another barrier is the existing model of fund distribution (mainly by banks and within the same capital groups). The model in which the adviser will look for the cheapest solution for the client has not developed due to lack of investor trust. Investor confidence has been severely damaged by some events in the investment fund sector, especially related to closed-end funds. Poland was second among European countries in terms of the total amount of penalties imposed by the supervisor on managers of alternative investment funds in the period 2013–22.

As far as insurance companies are concerned, an important factor slowing the growth of the sector has been a lack of some types of insurance products, like annuities, which are very important in other countries. Insurance companies operating in Poland have generally not managed longevity risk. There are also no domestic reinsurance companies. On the other hand, some products – like group life insurance – that do not actually exist in other countries affect the growth of premiums negatively as they are insurances for low amounts.

Another issue is the high cost of insurance as well as a low overall efficiency of investments made in unit-linked products. EIOPA⁸ research has shown that management fees in unit-linked products in Poland have been among the highest in Europe. According to this EU agency, for IKE and IKZE retirement schemes in the form of life insurance contracts with UFK providers, the weighted average net return on investment in 2017–21 was actually lower than the costs incurred; domestic research has also indicated that the rates of return (after taking into account fees) in unit-linked products were lower than those on risk-free investments. All this has heavily impacted the growth of unit-linked products, which has been an important element of life insurance business.

Investor confidence in the life insurance sector has already been shaken by cases of product abuses – numerous penalties have been imposed by the Office of Competition and Consumer Protection, while some products have been withdrawn only after product intervention by the PFSA (supervisory authority).

Slowing demand for products offered by investment funds and insurance companies has been a result of economic uncertainty and increased investment risk, as well as falling real household income. The first factor has been present for the whole period since the start of the pandemic. The second materialised in March 2020 and February–April 2022, when investors' and markets' response was highly negative. The last was related to the inflationary environment. All of these factors made Poles prefer liquid, low-risk assets – bank deposits, as well as inflation-indexed Treasury bonds.

Lending by state-owned banks and development banks/institutions

The definition of state-owned banks differs across jurisdictions and in the academic literature. In this note, state-owned banks are defined as banks effectively controlled by the state or its agencies regardless of the size of their participation in the capital.

⁸ European Insurance and Occupational Pensions Authority.

In this note, this category comprises only commercial banks and does not include an existing development bank. The development bank in Poland, Bank Gospodarstwa Krajowego SA (BGK), was established in 1924 as a state development bank from the very beginning.

In Poland, state-owned banks are typical commercial banks which realise the same objectives as other universal banks. They have neither special roles/privileges, nor a different regulatory framework – they are subject to all EU banking regulations. Their balance sheet structure or profit and loss account are similar to those of other private domestic or foreign commercial banks. As they are not special, this part of the note will focus on BGK activities only.

BGK differs clearly from commercial banks. It is one of the largest banks in the country, with assets close to PLN 207 billion (Table 3). It is formally exempted from EU banking directives. However, the PFSA requires it to comply with supervisory requirements. It finances mainly the corporate sector and its activity is carried out to a large extent through so-called “flow funds”. Flow funds were established at BGK under separate laws. These funds are unincorporated. Their resources are expended based on financial plans agreed with the Minister of Finance and approved by ministers competent for the scope of a given fund. In accordance with BGK’s Articles of Association as well as separate legislation and other legal acts, BGK keeps separate records and assumes responsibility for the preparation of the financial position statement and profit or loss statement of the funds, but their assets and liabilities are not disclosed in BGK’s financial position statement and profit or loss statement. Under the relevant laws, the BGK acts as the operator of the flow funds and may incur liabilities on behalf of some of them in the form of bond issues, credit facilities or loans, but it does not control them and does not bear credit risk related to their assets.⁹

BGK balance sheet, 2022

In billions of zlotys

Table 3

Assets		Liabilities	
Interbank deposits	9.9	Interbank deposits	4.5
Loans and advances	36.9	Deposits of customers	153.8
Securities held	137.2	Securities issued	3.9
Other investments	3.8	Other liabilities	14.1
Other assets	19.0	Equity	30.5
Balance sheet	206.8	Balance sheet	206.8

Source: BGK financial statements the financial year from 1 January to 31 December 2022.

⁹ See BGK, Report of the Management Board on the activities of the Bank Gospodarstwa Krajowego Group in 2022: integrated report.

In recent years, the Polish government has also used other development institutions in the form of a special development vehicle – the Polish Development Fund (Polski Fundusz Rozwoju SA – PFR). PFR SA is a joint stock company owned by the state, not a financial institution. However, it has provided funds to non-financial firms, for example during the Covid-19 pandemic, thus implementing the policy of the state. Besides common objectives, there have been strong organisational links between PFR and BGK, but also other public development institutions (forming the so-called PFR Group) defined by a dedicated legal act.¹⁰ In accordance with the common strategy, the PFR Group focuses on the six most important areas of development activities, assigning each a leading institution: in investments this role has been played by PFR, in banking, BGK, in export insurance, KUKE,¹¹ in foreign trade, PAIH,¹² in industry, ARP¹³ and in entrepreneurship development, PARP.¹⁴

The role of public and state-owned development institutions in crisis financing during Covid-19

BGK and PFR were key vehicles used as part of the crisis management measures during the Covid-19 pandemic. Prior to the pandemic, financing of the economy by BGK and other development institutions was rather limited. Since the outbreak of Covid-19, own lending activities of BGK (i.e. not related to flow funds) have been more or less in line with those of commercial banks – they have increased by 11% to PLN 33.9 billion. Much more important were the financing activities of BGK and PFR channelled through dedicated flow funds, which have been mainly financed by issuing bonds. The funds have been set up to provide financial support for the implementation of tasks related to combating Covid-19 (BGK) and counteracting the consequences of the socioeconomic crisis caused by the pandemic (PFR). Financing by PFR has been part of the package of measures under the government's so-called Anti-Crisis Shield. The aim of this programme has been to protect the labour market and provide companies with financial liquidity during the period of serious economic disruptions. As a result of the Financial Shield 1.0 programme, SMEs have received a total of almost PLN 61 billion in partially non-refundable financial support. During the second wave of the pandemic, Financial Shield 2.0, worth PLN 13 billion, was launched in the form of subsidies of up to 100% for companies from over 50 industries.

At the end of 2022, the value of BGK and PFR bonds guaranteed by the State Treasury, which were issued mainly during the Covid-19 pandemic, amounted to PLN 223.8 billion (including the value of PFR bonds amounting to PLN 73.9 billion).

The available data show that at the end of 2022 other domestic banks held around PLN 90 billion of these bonds, approximately 55% of PFR bonds and approximately 35% of BGK bonds, in terms of value. The bonds were also purchased

¹⁰ The Act of 4 July 2019 on the system of development institutions (*Ustawa z dnia 4 lipca 2019 r. o systemie instytucji rozwoju*).

¹¹ Korporacja Ubezpieczeń Kredytów Eksportowych (Export Credit Insurance Corporation).

¹² Polska Agencja Inwestycji i Handlu (Polish Investment and Trade Agency).

¹³ Agencja Rozwoju Przemysłu (Industrial Development Agency).

¹⁴ Polska Agencja Rozwoju Przedsiębiorczości (Polish Agency for Enterprise Development).

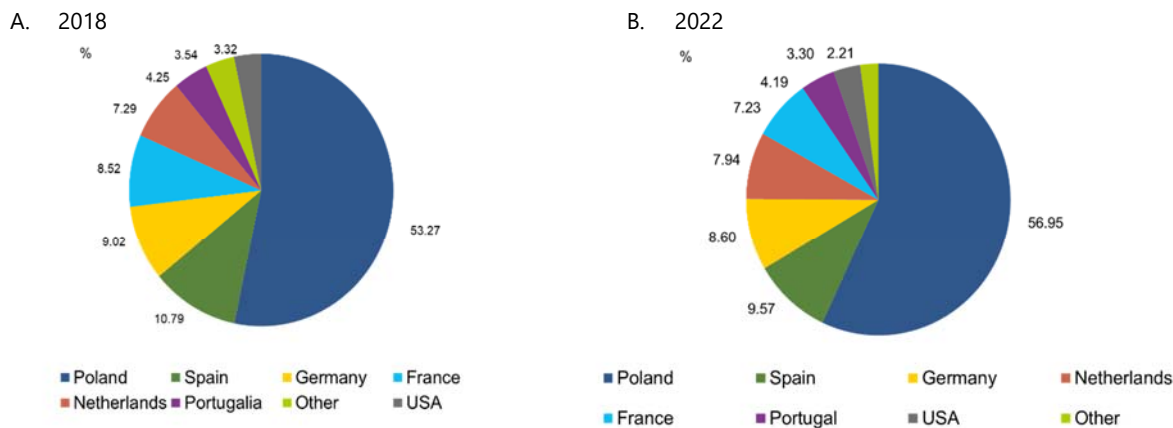
from those banks by NBP on the secondary market as part of its structural open market operations (QE) carried out in 2020–21. At the end of 2022, NBP held BGK and PFR bonds with a total value of almost PLN 61.9 billion, approximately 30% of the total issue. BGK and PFR bonds were also present in the portfolios of investment funds (PLN 23.2 billion at the end of 2022) and insurance companies (PLN 26.7 billion).

Foreign capital in financing of the Polish economy

Foreign capital is an important source of financing of the Polish economy. Altogether, this source is responsible for around 20% of the financing. Foreign financing also increased during the analysed period (Annex Table 4). Rising uncertainty and risk aversion have resulted in an outflow of portfolio capital which, however, has been fully compensated by other inflows, primarily direct investments.

The share of foreign-owned entities in the banking sector in Poland (in terms of assets) decreased from 46.8% to 43.1% in the period 2018–22, as a result of the faster growth of assets of domestic banks and the withdrawal of some banking entities. Thus, more than half of the banking sector’s assets were controlled by domestic investors, including approximately 48% with the participation of the State Treasury (Chart 20). At the end of 2022, 17 banks with foreign ownership operated in Poland as joint stock companies and 34 as branches of foreign banks.

The origin of investors controlling the banking system in Poland (by assets) Chart 20



Source: NBP, Financial system in Poland 2022, November 2023.

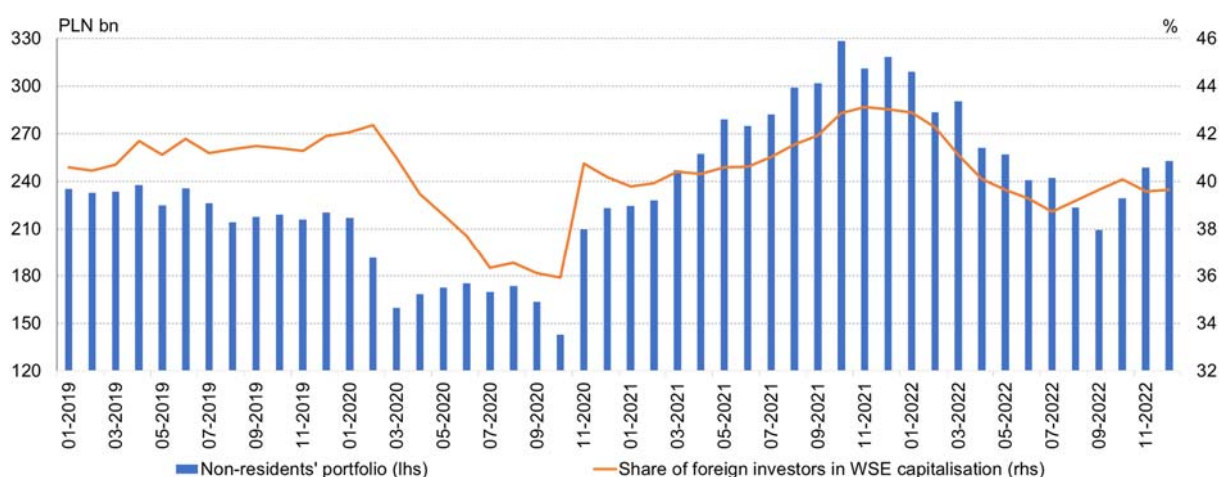
The insurance sector was dominated by entities with a high share of foreign capital, mainly insurance holding companies. The share of companies with foreign capital in the gross written premium in 2022 did not change significantly and amounted to 57.4%. At the end of 2022, insurance activities in Poland under the principle of freedom to provide services were carried out by 595 entities from the EU and other EEA countries, while four life insurance companies, 21 property insurance companies and one reinsurance company operated in the form of a branch.

Asset management companies are part of capital groups comprising banks and insurance companies as well as other financial institutions. The assessment of the share of foreign ownership depends on the definition and structure of the group. However, after excluding the entities that are controlled by purely domestic capital, the foreign share is close to 50%.

In the period 2018–22, the share of foreign investors in the capitalisation of domestic companies listed on the WSE Main Market was approximately 40%. This share decreased after the outbreak of Covid-19 (from 42% to 36%) and, on a smaller scale, after Russia's aggression against Ukraine (from 43% to 39%; Chart 21). The value of the portfolio of equity instruments held by non-residents decreased to PLN 252.9 billion at the end of 2022. The decline in the involvement of foreign investors resulted mainly from the decline in share prices.

Share of foreign investors in WSE Main Market capitalisation, 2019–22

Chart 21



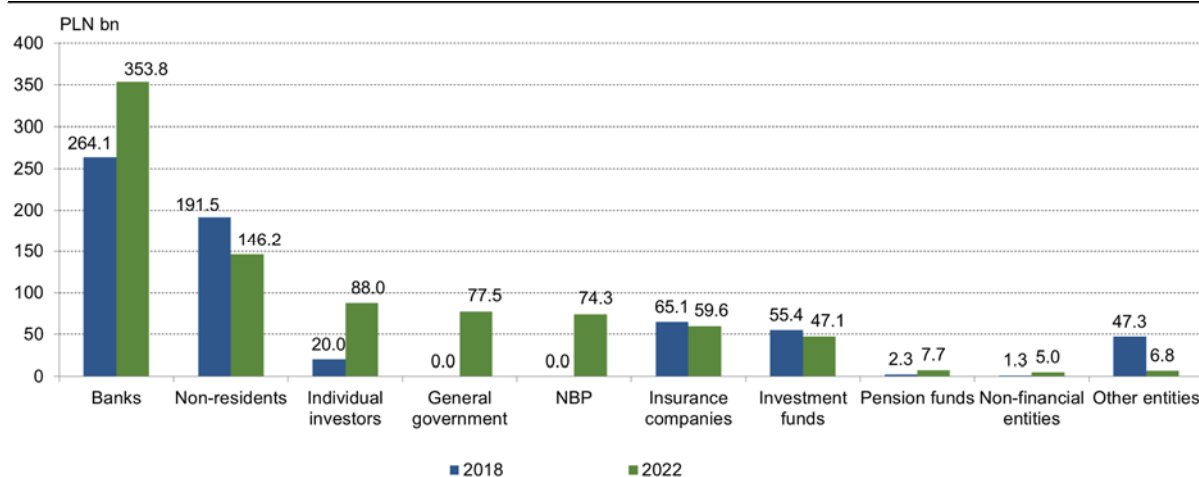
Source: NBP, Financial system in Poland 2022, November 2023.

In the analysed period, foreign investors had the largest share in trading in equities on the WSE Main Market (56–64%). The moderate importance of domestic institutional investors might result from their relatively long investment horizon. In turn, the importance of individual investors increased significantly in 2020, but since then the share of this group of market participants has decreased.

The Treasury bond market has been dominated by domestic banks. In the years 2018–22, the value of domestic banks' portfolios increased by almost 36% to PLN 353.8 billion, while the value of these instruments held by non-residents decreased by around 23% to PLN 146.2 billion (Chart 22).

Structure of investors on the domestic bond market at the end of 2018 and 2022

Chart 22



Source: Polish Ministry of Finance.

At the end of 2022, approximately 45% of Treasury bonds in foreign investors' portfolios were held by central banks, public institutions, insurance companies and pension funds; the rest was in the portfolios of foreign financial institutions and so-called collective accounts.

At the end of 2022, the value of BGK and PFR bonds guaranteed by the State Treasury, which were issued mainly during the Covid-19 pandemic, amounted to PLN 223.8 billion (including the value of PFR bonds amounting to PLN 73.9 billion). At the end of 2022, 3.7% of BGK bonds were held by foreigners, while in the case of PFR bonds this share was only 0.1%.

The nominal value of corporate bonds issued domestically (excluding bank bonds and PFR) at the end of 2022 can be estimated at PLN 79.8 billion, compared to PLN 85.9 billion at the end of 2018. Its ratio to GDP decreased from 3.8% in 2018 to 2.6% in 2022. The biggest buyers of these instruments were domestic banks and domestic investment funds (approximately one third each). The importance of foreign investors in this segment of the capital market is small – it grew from approximately 3% to around 6% in the years 2018–22. The low share of foreign investors has been a result of low secondary market liquidity.

The impact of the pandemic on the Polish financial system and financing of the economy

The Covid-19 pandemic, followed by the increase of geopolitical risks resulting from the war in Ukraine (near Polish borders) and the related inflationary pressures have affected the financial system primarily through a fall in demand for financial services and a change in household preferences towards particular financial products. This has impacted the structure of the Polish financial system. The higher risk perception,

together with lower disposable income, has resulted in an alteration of the structure of demand for financial products among households. It has increased the demand for very liquid assets (cash, bank deposits – mostly current accounts) but also for assets protecting against inflation risk (real estate and inflation-indexed Treasury bonds). The tendency towards increasing use of internet-based brokers to speculate on the stock exchange (observed, for example, in the United States) has not been observed in Poland.

These shocks, by strongly increasing uncertainty, have contributed to a slowdown of bank credit growth, a limited supply of corporate securities and an absence of IPOs on equity markets. These tendencies have been amplified by a strong increase in public financing of the economy, to a large extent via public development institutions – banking (BGK) and non-banking (PFR). The scale and nature of public support – with an important share of non-repayable funds – not only helped to lessen the impact of the pandemic on the Polish economy and maintain borrowers' ability to withstand the shock, but also replaced private financing of firms. Banks became net borrowers from non-financial firms. Thus, the pandemic strengthened some, not always welcome, tendencies observed earlier – the fall of the credit/GDP ratio and the fall of capitalisation of the WSE. The pandemic has not halted the growth of the banking sector balance sheet, but this was primarily due to a substantial increase in the value of its T-bond portfolio. Despite the outflow of portfolio capital, Covid-19 has not made a strong and lasting impact on the foreign financing of the Polish corporate sector's FDIs, and intragroup lending was not impacted.

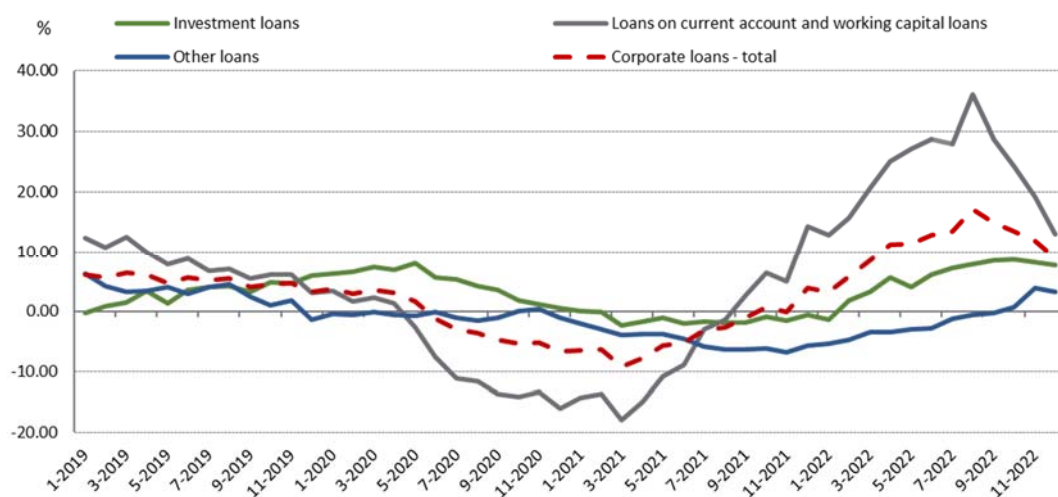
For many years, the ratio of credit to non-financial enterprises to GDP in Poland was low, but remained at a relatively stable level of approximately 15–16%. Since the outbreak of Covid-19, the ratio has decreased and at the end of September 2023 it amounted to around 12%. The year-on-year growth rate of loans to Polish enterprises began to decline significantly as the pandemic evolved. After reaching its lowest value in March 2021 (–9.24% year on year), it began to gradually recover and in August 2022 reached a record high level not seen since 2009 before becoming negative again (Chart 23).

The ratio of credit to non-financial enterprises to GDP in Poland has reached one of the lowest levels in the EU for years and at the end of June 2023 it amounted to approximately 12% compared to 36%, on average, in the EU.

The pandemic has not changed much in terms of credit allocation between households and non-financial firms and its allocation within the non-financial corporate sector portfolio.

Bank credit to non-financial enterprises – growth (year on year)

Chart 23

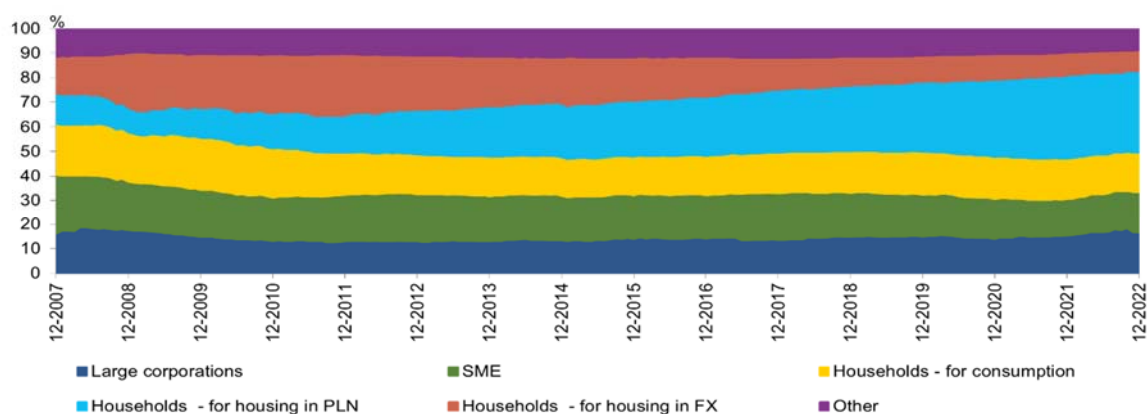


Source: NBP.

The structure of loans to the non-financial sector has displayed low variability over time. Among other factors, this has been the result of the long-term nature of a significant part of these assets (Chart 24). At the end of 2022, the value of loans to households (private individuals, farmers and individual entrepreneurs) was twice as high as the value of loans to enterprises. In recent years, the most visible change in the loan structure has been an increase in the share of housing loans in domestic currency (from approximately 27% to 33% in 2018–22) and a decrease in the share of foreign currency housing loans (from approximately 12% to 8.5%).

Structure of the bank credit portfolio by type of non-financial borrower, 2007–22

Chart 24



Monetary data (for residents).

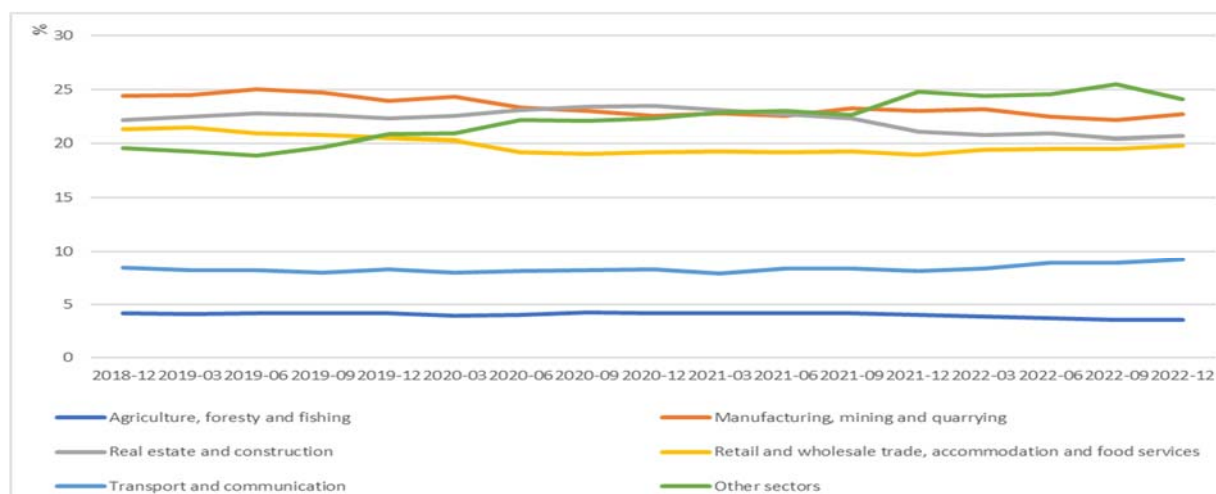
Source: NBP, Financial system in Poland 2022, November 2023.

In the analysed period, there were not many changes regarding the share of lending to specific groups of industries in Polish banks' corporate credit portfolios

either. The only visible tendency was an increase in the allocation of credit to industries whose share in the past had been smaller (Chart 25).

Allocation of bank credit to specific industries, 2018–22

Chart 25



Bank exposures to the corporate sector, based on large exposures statistics, in PLN (unit value of loan $\geq$ PLN 500,000).

Source: NBP.

By negatively affecting the real disposable income of households, the pandemic and other phenomena of 2020–22 have contributed to slowing the demand for insurance and investment products. The inflow of retail deposits has diminished banks' demand for wholesale funding, primarily from abroad. The pandemic has not had any negative impact on the foreign financing of Polish enterprises, despite the fall of the share of foreigners in the Polish capital markets.

Going forward

Could lending to the public sector and to state-owned enterprises crowd out lending to the private sector over the long term?

The substantial increase in lending by public development institutions during the Covid-19 pandemic was rather a unique crisis management action which has not been experienced before. The rise of the share of Treasury bonds and bonds guaranteed by the State Treasury in universal banks' assets up to 25% was also not a sign of crowding-out of credit to the private sector, but rather a result of the coincidence of low demand for credit and strong growth of non-financial sector deposits. This was associated with increased public sector lending and transfers, as well as strong demand for more liquid assets by households. Nonetheless, some of the increase in T-bond holdings was a result of the special tax treatment of these instruments (exclusion from the base of the so-called tax on assets; credit has not been excluded). The growth of state-owned commercial banks' lending to publicly owned or controlled firms has not increased more than that of their private sector peers.

To what extent such trends might continue going forward will be to a large extent a government decision. There is no doubt that Poland will face important financing challenges in the future. They will be related to an increase in, for example, public investment related to climate change and defence, as well as the rapidly growing share of the population moving to retirement. Whether these expenditures will be met by mobilised private funds, EU funds, or public funds will depend on future government decisions and the market environment. The future role of development institutions has to be decided too, although the growth of new financing arranged by these institutions has slowed down since 2021.

The international experience has shown that the phenomenon of crowding-out of lending to the private sector has usually been connected to capital shortages in the banking sector. The NBP *Financial Stability Report* issued in December 2023 confirms that banks have sufficient capital and ample liquidity to finance the economy. It concludes that even under stressful conditions the banking sector in Poland maintains comfortable capital surpluses over regulatory and supervisory requirements.

The long-run consequences of recent changes in terms of the economy and financial system's ability to withstand shocks

One of the preconditions for the economy's resilience to shocks is its diversification. This concerns both the real and financial sectors. The real sector in Poland is well diversified, adaptive and very resilient – this has been proved many times when it faced different types of shocks since the beginning of the economic transformation in 1990. The level of leverage in the Polish economy is relatively low and dependence on foreign financing is falling. All this creates a supportive environment towards development of financial institutions.

However, the recent changes in the structure of the financial system in Poland have reversed some trends towards a more diversified structure. The share of the banking sector in the financial system has increased, while the share of all non-bank financial institutions and capital markets has fallen. This might negatively affect the resilience of the economy if a shock hits Poland's banking sector in the future. However, the results of stress tests carried out regularly by central banks reveal that the resilience of the banking sector in Poland to materialisation of stressful scenarios is sufficient, and experience has confirmed that assessment.

Overall, changes in the structure of financial intermediation seem to be rather temporary and should not affect the capacity of the Polish economy to withstand domestic and external shocks, as well as support financial system growth. The very low level of the banking corporate credit to GDP ratio seems to be more a coincidence of various temporary factors than evidence of constraints on the supply side. There are no capital or liquidity barriers to stronger banking credit growth. Given the fact that the scale of investment (eg related to climate change, energy transformation and technological progress) to be financed or co-financed (like projects funded by the EU Reconstruction Fund) by the banking sector is high, lending activity should increase above the level observed prior to the Covid-19 pandemic.

The fact that the role of capital markets in the economy has been reduced is more problematic. There were cyclical and on-off factors present, but there are some

more structural obstacles to the development of market financing in Poland which are described in the next paragraph.

Policy measures to support the allocation of finance for long-term growth, including by further developing capital markets

One of the future policy objectives should be a more diversified financial system with the non-banking sector playing a more important role in financing the economy. This would help reduce output volatility and maximise long-run growth.

In order to identify which policy measures are needed to support the allocation of finance for long-term growth in Poland, one needs to answer two questions: which markets need to be developed and what are the key obstacles to achieving this objective?

The initial sections of this note have clearly shown that the Polish private capital markets, like the stock market or corporate debt market, are underdeveloped and still do not play a major role in financing the Polish economy. Despite this, Poland's economic growth in the past has been adequate and not different from other countries in the region. However, future challenges will require more rapid development of these markets. As the capital market infrastructure and legal framework as well as supervision are well developed in Poland, the authorities must focus on such areas as:

First, increasing the domestic supply of and demand for financing. Unfortunately, both the savings rate of Polish households and the investment rate of Polish firms is very low (–0.8% and 16.7% of GDP, respectively, in 2022). This means that there is not much finance to be intermediated. The government policies aiming to increase both savings and investment rates need to be implemented effectively. To this end, mobilisation of savings for retirement needs to be a priority to increase overall savings and provide long-term funding.

Second, households prefer to keep their savings in bank deposits. Thus, the postulate of increasing the, still limited, economic literacy of potential individual investors remains valid.

Third, cost of intermediation. Low inflation and a low interest rate would support more risk-taking behaviour, but this has to be combined with a low cost of entering the market for both lenders and borrowers. This is not the case for Polish capital markets. The legal barriers to the development of low-cost investment funds need to be eliminated.

Fourth, special attention should be paid to SME market financing. There is a relatively large number of companies with small capitalisation in the economy and on the WSE. For small companies, costs associated with organising the issue of shares, admitting them to trading on the regulated market and then fulfilling the disclosure obligations are too high.

Fifth, investors need to be assured that the rules of the game are stable and respected by all market participants. However, in the past minority investors have complained about corporate governance in companies controlled by state agencies as well as private owners.

Sixth, Polish entrepreneurs are generally reluctant to reveal information on their companies to competitors. Thus, they are afraid of entering the organised market and being subject to regular reporting requirements. In order to overcome this, simplified reporting frameworks have to be available for SMEs entering organised markets.

In order to overcome these barriers and further enhance the depth and diversity of the financial system and thus improve the efficient allocation of capital, a comprehensive long-term strategy is required. Some of these and other barriers have been identified and addressed by the so-called Capital Market Development Strategy, which became an official governmental document in 2019. Many legal changes required by the Strategy entered into force in 2023.

The currently pending package of changes to EU regulations (within the EU “Capital Market Union” project) aimed at increasing the attractiveness of public capital markets in the EU for enterprises and facilitating access to capital for SMEs provides, *inter alia*, for: simplifying prospectus procedures for small companies (the so-called EU growth prospectus) and introducing the so-called follow-on prospectus. Adopting these changes could encourage smaller entities, including companies already present on the capital market, to utilise this source of financing more actively.

Corporate bond market development may be supported by changes in national legislation (eg introduction of the concept of “transformation bonds”) and European regulations (green bond standard regulation). The Polish supervision authorities promote the issuance of mortgage bonds to limit the maturity transformation in the banking sector. Further actions to increase transparency and liquidity of the secondary market could contribute to the development of the domestic corporate bond market (from the demand side – bond quotations on the Catalyst platform,¹⁵ simplification of its structure, activities of market-makers, a greater role of rating agencies, covering some issues with guarantees). It is also worth mentioning that the amendment to the “Act on public offering and conditions for introducing financial instruments to organized trading and on public companies” increased the threshold exempting entities from the obligation to prepare an issue prospectus from the domestic currency equivalent of EUR 2.5 million to EUR 5.0 million, which may contribute to increasing the supply of non-Treasury bonds.

¹⁵ Catalyst is the first organised debt securities market in Poland and the only one in the CEE region. This system facilitates and optimises the issuance of bonds by enterprises and local government units. Catalyst is part of the WSE.

Annex

Assets¹ of financial institutions in Poland, 2017–22

In billions of zlotys

Table 1

	2017	2018	2019	2020	2021	2022
Financial institutions subject to PFSA supervision²						
Commercial banks ³	1,603.4	1,704.6	1,790.0	2,117.2	2,320.2	2,475.3
Cooperative and affiliating banks ³	173.4	182.1	201.8	221.2	236.1	240.0
Credit unions	10.2	9.6	9.4	9.5	10.0	10.1
Insurance companies	198.4	191.8	193.0	203.6	197.1	183.6
Investment funds	302.8	293.4	304.6	302.2	323.4	283.0
Pension funds	179.5	157.3	154.8	148.6	188.0	156.3
Brokerage houses	6.8	6.6	6.6	9.9	14.3	12.2
Subtotal	2,474.5	2,545.4	2,660.5	3,012.2	3,289.1	3,360.5
Other financial institutions⁴						
Leasing companies	122.4	140.9	148.3	140.2	161.5	175.0
Factoring companies	20.4	25.1	28.0	28.8	35.6	39.8
Financial companies	11.0	10.3	13.9	12.6	13.1	14.4
Subtotal	153.8	176.3	190.2	181.6	210.2	229.2
Total	2,628.3	2,721.7	2,850.7	3,193.8	3,499.3	3,589.7

¹ For banks, investment funds and pension funds – net assets. ² Representation of key types of supervised financial institutions. ³ Only fully operational banks. Bank branches are included in "Commercial banks". ⁴ Representation of key types of financial institutions which are not supervised and for which statistical data are available.

Source: NBP, Financial system in Poland 2022, November 2023.

Development of the banking sector in selected CEE countries and the euro area, 2020–22

In per cent

Table 2

	Assets/GDP			Credit ¹ /GDP			Deposits ² /GDP		
	2020	2021	2022	2020	2021	2022	2020	2021	2022
Poland	100.0	97.1	88.5	47.1	43.8	37.1	60.9	58.4	53.4
Czechia	139.7	139.7	131.4	52.3	53.0	49.2	74.9	74.9	70.2
Hungary	109.6	111.3	108.0	35.0	34.67	32.8	48.0	49.6	42.2
Euro area ³	307.1	297.2	292.1	94.5	91.0	88.0	100.1	98.5	94.4

¹ Credits and loans of banks to the non-financial sector in all currencies. ² Deposits of the non-financial sector in all currencies. ³ Assets, credits and deposits of monetary financial institutions (excl. Euro system central banks).

Source: NBP, Financial system in Poland 2022, November 2023.

Value and structure of Polish households' financial assets,¹ 2019–22 (end of period)

Table 3

	2018	2019	2020	2021	2022
	Value of households' financial assets (PLN bn)				
Bank deposits	818.9	898.1	993.8	1,059.9	1,094.4
Deposits in credit unions	9.0	8.7	8.9	9.4	9.3
Investment fund participation titles	129.2	147.0	152.1	165.6	134.4
Life insurance policies (incl unit-linked) ²	61.3	60.9	62.7	57.5	45.9
Treasury bonds	20.0	27.4	40.8	55.1	87.9
Non-treasury debt securities	4.8	5.6	3.2	1.5	2.7
Listed equity shares	47.7	56.2	80.8	89.0	80.3
Cash (outside bank vaults)	198.6	219.1	301.0	334.1	347.8
Total	1,289.5	1,423.0	1,643.3	1,772.2	1,802.7
	Share of types of financial assets in households' voluntary savings (%)				
Bank deposits	63.5	63.1	60.5	59.8	60.7
Deposits in credit unions	0.7	0.6	0.5	0.5	0.5
Investment fund participation titles	10.0	10.4	9.3	9.4	7.5
Life insurance policies (incl unit-linked) ²	4.8	4.3	3.8	3.2	2.5
Treasury bonds	1.6	1.9	2.5	3.1	4.9
Non-treasury debt securities	0.4	0.4	0.2	0.1	0.1
Listed equity shares	3.7	3.9	4.9	5.0	4.5
Cash (outside bank vaults)	15.3	15.4	18.3	18.9	19.3

¹ Only financial assets held on a voluntary basis. ² The value of assets related to life insurances is presented in line with the provisions of the Solvency II Directive.

Source: NBP, Financial system in Poland 2022, November 2023.

Scale and structure of foreign financing of the Polish economy, 2018–22

In millions of zlotys

Table 4

	2018	2019	2020	2021	2022	Change 2018–22 (PLN)	Change 2018–22 (%)
Total liabilities	2,233,030	2,261,566	2,353,775	2,595,572	2,759,165	526,135	24%
1.Direct investment	1,029,157	1,088,816	1,149,256	1,317,706	1,410,817	381,660	37%
<i>*Equity and investment fund shares</i>	662,396	717,991	745,631	867,456	901,734	239,338	36%
<i>*Debt instruments</i>	366,761	370,825	403,625	450,250	509,083	142,322	39%
2.Portfolio investment	641,054	587,183	560,138	535,441	506,827	–134,227	–21%
<i>*Equity securities</i>	193,098	179,344	161,422	190,209	159,244	–33,854	–18%
<i>*Bonds and notes</i>	447,917	407,798	397,664	345,222	347,548	–100,369	–22%
<i>*Money market instruments</i>	39	41	1,052	10	35	–4	–10%
3.Financial derivatives	12,660	14,496	27,549	50,036	67,104	54,444	430%
4.Other investment	550,159	571,071	616,832	692,389	774,417	224,258	41%
<i>*Monetary authorities</i>	47,284	52,771	54,660	69,744	88,395	41,111	87%
<i>*General government</i>	85,509	81,627	110,033	138,407	157,819	72,310	85%
<i>*MFIs</i>	176,337	162,340	177,804	174,076	185,448	9,111	5%
<i>*Financial corporations</i>	55,427	76,832	68,413	73,518	76,347	20,920	38%
<i>*Non-financial corporations</i>	185,602	197,501	205,922	236,644	266,408	80,806	44%

Source: NBP, international investment position statistics.

How credit and its sectoral allocation contribute to long-term economic growth in Saudi Arabia

Saudi Central Bank

Introduction

This note will unpack ongoing shifts in Saudi Arabia's financial landscape, with a focus on credit allocation patterns and their role in sustaining long-term economic growth. To provide context, the analysis will first explore the vast changes occurring within the broader financial systems of emerging market economies (EMEs). For instance, in recent years EMEs have experienced transformative shifts in their financial systems, marked by a decreasing reliance on traditional bank intermediation and a rising prominence of capital markets and non-bank financial intermediaries (NBFIs). This evolution, partly accelerated by the Covid-19 pandemic, has altered the domestic and foreign investor base, reflecting a broader trend towards a more diversified financial ecosystem. That said, challenges arise in determining the point at which financial development becomes excessive, potentially leading to increased volatility and hindering long-term growth. Thus, identifying an optimal financial structure that minimises output volatility while maximising long-term growth is essential for EMEs, ensuring they can effectively withstand domestic and external shocks and sustain growth.

EME financial systems: what has changed?

Over the past few decades, EMEs have undergone substantial transformations within their financial systems as a result of domestic reforms, increasing integration with the global financial system and adaptation to shifting macroeconomic trends. **A key indicator of this financial development is the expansion of private credit provided by the banking sector** (Figure 1), which accounts for approximately 123% of GDP in EMEs as of mid-2023. This represents a significant increase from 87% of GDP in 2000 and points to continuous expansion in the banking sector. However, despite outpacing their historical averages, EME private credit flows still lag behind those seen in advanced economies (AEs), where private credit currently sits at around 161% of GDP. Beyond aggregate credit growth, EMEs have also experienced a gradual but notable shift in credit flows across sectors (Figure 2), with more households and government sectors accessing the credit market. This steady shift towards expanded household and government borrowing capacity is a sign of the financial deepening, improved financial intermediation and risk appetite that has been unfolding within EME financial systems.

Figure 1 Share of credit to GDP

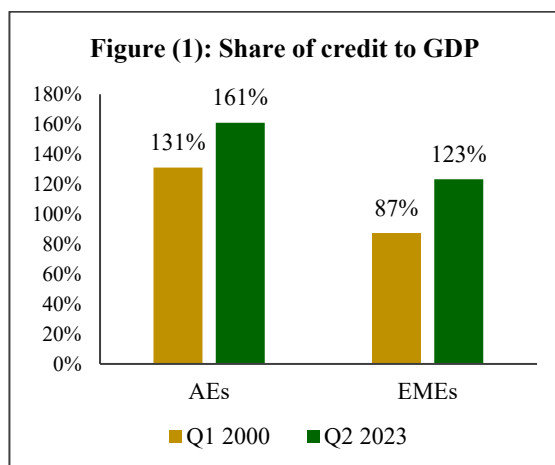
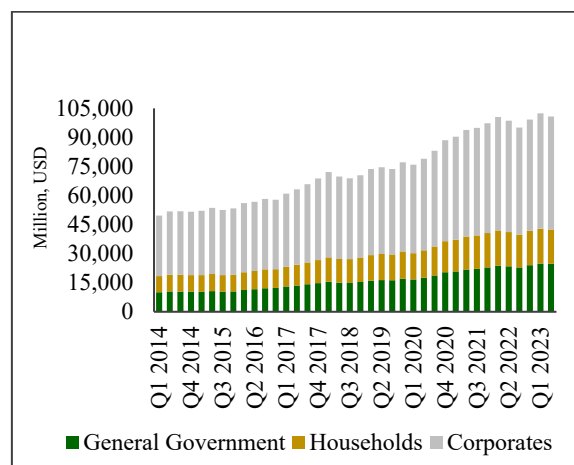


Figure 2: Credit provided by financial institutions in EMEs



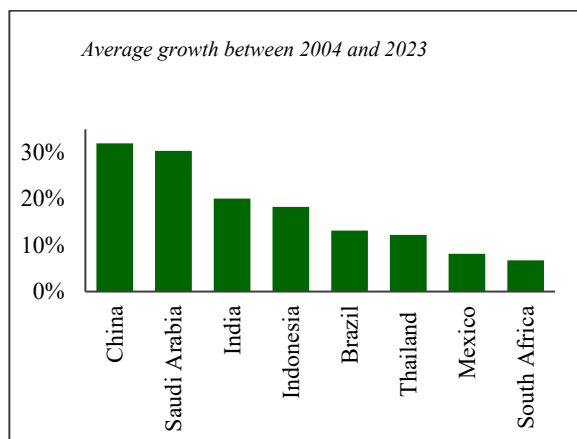
Sources: BIS data

Another important aspect of EME financial advancement is the development of capital markets, with stock market indices growing at an average annual rate of 11% between 2000 and Q2 2023. In addition, stock market capitalisation has expanded considerably (Figure 3), although it is not yet reaching the depth seen in AEs. Moreover, **EMEs have attracted growing foreign capital inflows**, as evidenced by the rise in inward foreign direct investment (FDI), which has grown at 7% annually from 2000 up to Q2 2023 (Figure 4). While this is lower than the 16% annual inward FDI growth that AEs have benefited from, it still represents substantial progress in integrating EMEs within global capital allocation frameworks. From the same graph, AEs typically exhibit higher outward FDI flows compared to EMEs. This divergence in FDI flows is due, understandably, to the fact that AEs have larger and more stable markets, superior institutional quality, a larger number of multinational corporations and more robust legal and regulatory frameworks.¹ Nevertheless, the sustained FDI inflows have been pivotal in transferring knowledge, expertise, technologies and managerial best practices into EME financial systems.²

¹ See European Central Bank, "Foreign direct investment and its drivers: a global and EU perspective", *ECB Economic Bulletin*, issue 4/2018.

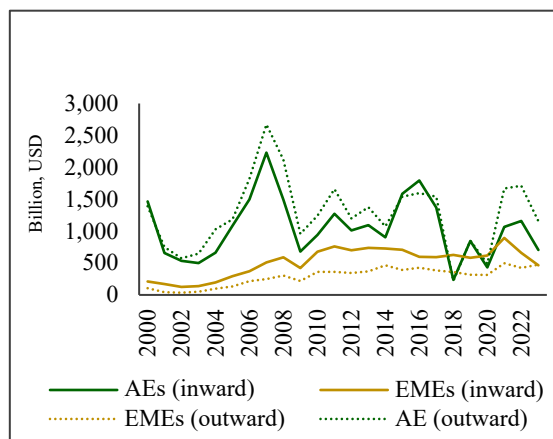
² See World Bank, *Global Investment Competitiveness Report 2019/2020: Rebuilding investor confidence in times of uncertainty*, July 2020.

Figure 3: Stock market capitalisation



Source: Bloomberg database.

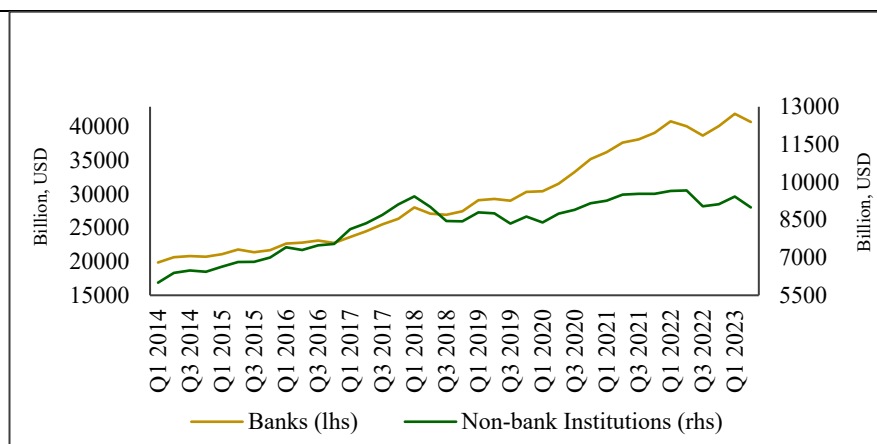
Figure 4: Foreign direct investment movements



Source: Oxford Economics.

Credit provided by banks and non-bank institutions in EMEs

Figure 5



Source: BIS data.

One of the most transformative shifts occurring in EMEs has been the move away from traditionally bank-centric financial systems towards more diversified ecosystems, as evidenced by the rising prominence of NBFIs (Figure 5). On average, annual credit from NBFIs increased 5% from 2014 to 2023, compared to 8% growth for bank credit. While credit provided by traditional banks is relatively higher, growth in credit from NBFIs highlights their expanding presence and potential to provide alternative intermediation. This trend towards diversification beyond banks is driven by the need for more liquid markets to attract foreign investment and for diverse financing options that expand credit access, especially for startups and SMEs.

Another important shift, and perhaps one that cannot be ignored, is the rapid embrace of digital financial services in EMEs, driven not only by technological advancements and increased internet penetration but also by a strategic push from governments and the private sector towards innovative payment systems. According to McKinsey,³ non-cash retail transactions in EMEs grew 25% annually from 2018 to 2021, with pronounced growth in Africa and Asia as e-wallets, mobile money and real-time transfers connected more populations to the financial system. The Covid-19 pandemic accelerated this transition, driving growth in contactless payments and e-commerce activity, which sparked further digital payment innovation and adoption. However, the pace of digitalisation also poses regulatory and competitive challenges as EMEs strive to develop comprehensive frameworks aligned with complex, rapidly evolving financial landscapes. Prudent governance will be vital to manage risks while still enabling responsible innovation that can deepen access, improve resilience and unlock inclusive growth.

When discussing financial developments in EMEs, one cannot overlook the advances made in recent years by Saudi Arabia, which has seen a wave of financial enhancements across a diverse range of areas. For instance:

- **Implementation of the Financial Sector Development Program (FSDP):**⁴

A pivotal financial reform initiative within Saudi Arabia's Vision 2030 has been the launch of the FSDP in 2017 to accelerate progress towards establishing an advanced capital market. The FSDP outlines strategic objectives aimed at transforming the Saudi Exchange (Tadawul) into an integrated global investment platform anchored in a robust market infrastructure. Specific goals have targeted boosting market capitalisation, liquidity and value to over \$3 trillion, enhancing trading infrastructure and settlement mechanisms in line with international best practices, and facilitating seamless foreign investment access. To achieve these outcomes, the FSDP has underscored reforms across governance, infrastructure and regulation including consolidated custody and clearing frameworks, upgraded online platforms, sophisticated fintech capabilities, strengthened investor rights, improved transparency practices and greater alignment with sustainable finance standards.

- **Emergence of Tadawul as a global market:** The transformation of the Saudi Exchange (Tadawul) in recent years has been significant. Reforms aimed at aligning Tadawul with international standards have been successful, setting the stage for the landmark initial public offering (IPO) of Saudi Aramco in 2019, which emerged as the largest IPO in history. These reforms included enhancements to market infrastructure, a strengthening of regulatory frameworks and efforts to broaden market access to international investors. Such advances contributed to Tadawul's inclusion in the MSCI Emerging Markets Index in 2019, affirming its stature as a pivotal player on the global stage. That said, by 2022 the market capitalisation of Tadawul had

³ See R Chaudhuri, C Gathinji, G Tayar and E Williams, "Sustaining digital payments growth: winning models in emerging markets", in McKinsey & Company, *The 2022 McKinsey Global Payments Report*, October 2022.

⁴ See Kingdom of Saudi Arabia, *Financial Sector Development Program: Program Charter 2021*.

surged, topping \$2.5 trillion. Introducing derivatives trading on the platform has also deepened market complexity to attract institutional investors.

- **Fintech innovation:**⁵ Since starting the Fintech Saudi programme in 2018, Saudi Arabia has worked to become a leading fintech centre in the Middle East. By 2022, this effort had helped accelerate the growth in the fintech ecosystem, marked by several new innovative startups and widespread use of digital payments. The Saudi Central Bank (SAMA) played a key role in enabling this fintech transformation through progressive regulatory policies. SAMA launched a regulatory sandbox for controlled testing of new technologies, created specialised licensing for fintech companies, and provided access to banking infrastructure and application programming interfaces (APIs) to promote development. These astute strategies are essential to driving innovation, providing legal certainty and establishing the Kingdom's position as a pioneer in regional fintech evolution.
- **Green finance initiatives:**⁶ Aligning with global shifts, Saudi Arabia has made progress in green finance in recent years. By 2022, the Kingdom had set up multiple efforts intended to encourage environmentally sustainable investment and provide financing for green initiatives, aligning with its Vision 2030 objectives. These efforts included issuing green bonds as well as creating regulations to support sustainable finance. Through these proactive measures, Saudi Arabia has established itself as an engaged player in the global transition towards a more environmentally mindful economic model. The Kingdom's strategic steps in the emerging field of green finance demonstrate its commitment to finance sector innovation that promotes sustainability.
- **Increased foreign investor participation:** The Saudi government has actively pursued economic reforms that have targeted, among other goals, an attractive investment environment, including easing restrictions on foreign ownership and adding Tadawul to the MSCI Emerging Markets Index. These decisive actions were intended to connect the Saudi market to the global financial system, making it more accessible and appealing to international investors. Because of these strategic policy changes, Saudi Arabia has seen a substantial increase in foreign capital inflows, with 2022 marking a record year for foreign investment levels. The rising inflows demonstrate growing global confidence in the stability of Saudi Arabia's financial market.
- **Optimising Saudi debt financing:**⁷ In 2015, Saudi Arabia established the Debt Management Office (DMO) to optimise fiscal financing costs and debt management while balancing risks and financial policies, enabling ongoing strategic access to international markets. In 2019, the DMO transitioned into the fully independent National Debt Management Center (NDMC), authorised to provide advisory services and executive plans on debt

⁵ See Fintech Saudi, *Fintech Saudi Annual Report 2022*.

⁶ See Public Investment Fund, *Green Finance Framework – 2022*.

⁷ Source: National Debt Management Center.

management to government entities and majority state-owned companies. The Center's responsibilities include collecting comprehensive debt data, negotiating favourable debt terms, implementing hedging policies, managing investor relations for public debt, and securing strong credit ratings. Through the strategic creation of these dedicated institutions to oversee national debt management, Saudi Arabia has taken proactive steps to strengthen public financial governance and maintain sound fiscal positioning.

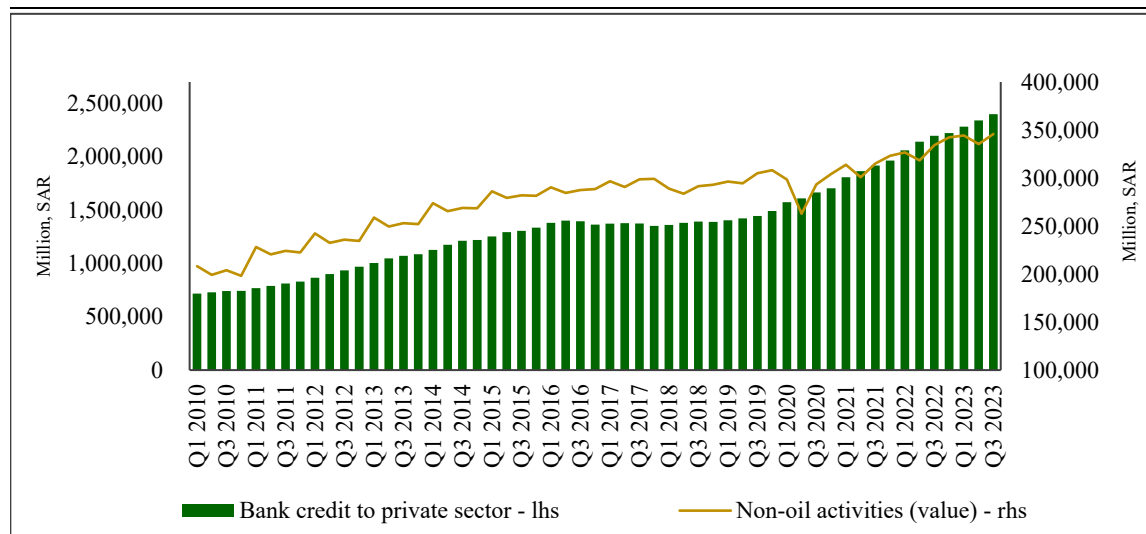
Credit allocation and long-term economic growth

The strategic expansion and allocation of credit is foundational for EMEs like Saudi Arabia as they pursue economic diversification and sustainable long-term development. Appropriate credit growth enables investment to flow into priority sectors leading to growth and innovation, while supporting SMEs as well as consumer spending to stimulate aggregate demand. Efficient and equitable credit allocation allows EMEs to support productivity enhancements, sectoral expansion and technology adoption. In the context of Saudi Arabia's Vision 2030 programme, which centres on economic diversification and growth of non-oil sectors, the supply of adequate credit and access to financing is pivotal. Targeted lending into new industries, entrepreneurs and technology upgrades can unlock innovation, enable job creation beyond the oil sector and encourage private investment.

Looking at the credit trend (Figure 6) provides a useful initial perspective before examining credit allocation in Saudi Arabia. **The steady upward trend in bank credit to the private sector (an average of 10% annually from 2010 to 2023) is indicative of the banking system's vital role in fuelling non-oil activities.** This sustained credit expansion points to a resilient banking sector capable of financing private sector expansions while maintaining financial soundness.⁸ The banking system's provision of financing for strategic investments has been instrumental in leading this economic transformation, with credit growth building confidence in the private sector's potential.⁹

⁸ According to SAMA monthly statistics, from 2010 to 2022, on average, non-performing loans stood at 1.8%, the capital adequacy ratio at 19%, liquid assets to total assets at 22.9% and liquid assets to short-term liabilities at 36.3%. Accordingly, the financial system demonstrates soundness, characterised by well managed credit risk, a substantial capital cushion to absorb potential losses, and a sensible approach to liquidity management.

⁹ This is also aligned with a study by M Alghfais, "Comparative analysis: the impact of financial sector development on economic growth in the non-oil sector in Saudi Arabia", *SAMA Working Papers*, WP/16/5, November 2016, published on the SAMA website.

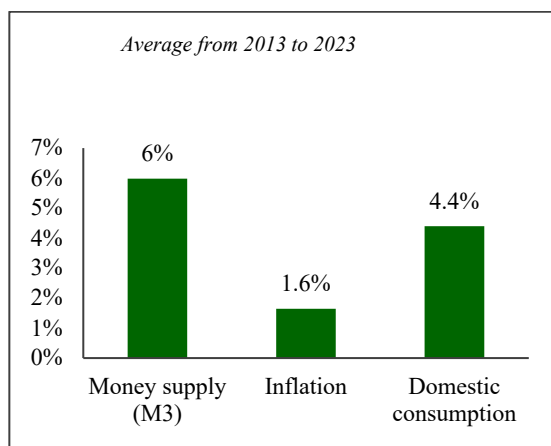


Sources: Saudi Central Bank, Monthly Bulletin; Saudi General Authority for Statistics.

Furthermore, despite the substantial credit growth from 2010 to 2023, inflation and liquidity in Saudi Arabia (Figure 7) remained stable due to multiple factors. **First**, Saudi Arabia's deep integration into global trade networks and substantial import capacity allowed any credit-fuelled rise in domestic demand to be met through higher imports rather than domestic price increases.¹⁰ The Kingdom's ability to smoothly expand imported goods prevented demand-pull inflation from taking place, despite increased domestic demand from credit growth. **Second**, SAMA's fixed exchange rate regime provided currency stability, limiting risks of imported inflation. **Third**, government policies, including subsidies and price caps, further shielded consumers from potential inflationary pressures from credit expansion. **Fourth**, SAMA's proactive liquidity management ensured that increased credit growth did not undermine the financial system. By balancing the money supply with economic growth, SAMA contributed to overall economic stability while keeping inflation contained. Through these mechanisms, Saudi Arabia fostered an environment conducive to economic growth supported by credit expansion without triggering higher inflation.

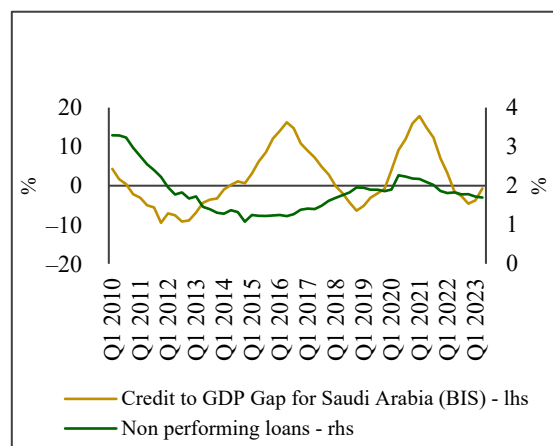
¹⁰ For more details, see S Alsabban, B Alghamdi and F Alhodaithy, "Inflation in Saudi Arabia: revisiting the macroeconomic determinants", *SAMA Working Papers*, WP/2023/2, August 2023.

Figure 7: Growth in liquidity, inflation, and consumption



Sources: Saudi Central Bank, Monthly Bulletin; Saudi General Authority for Statistics.

Figure 8: Credit to GDP gap and non-performing loans

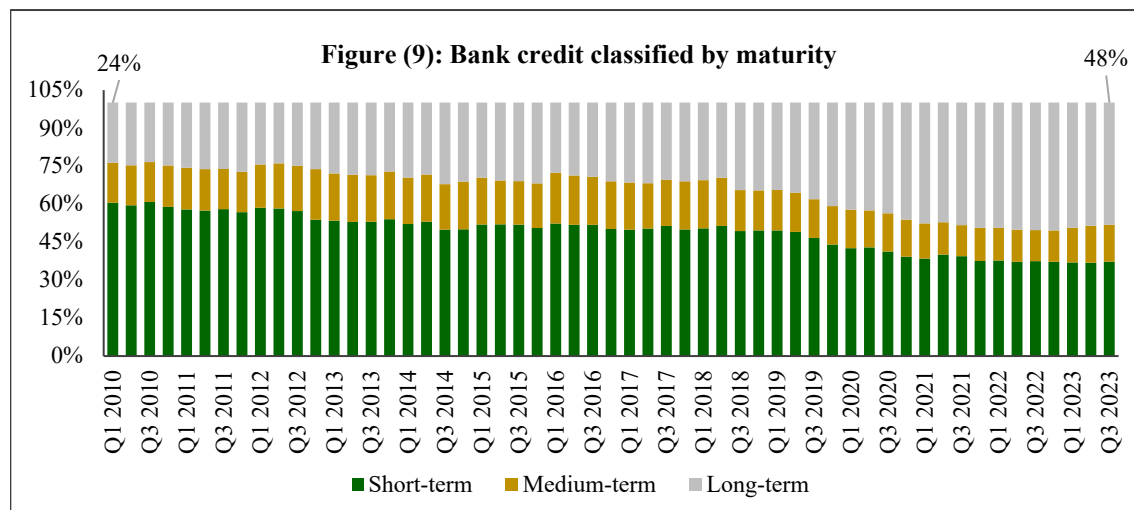


Sources: Saudi Central Bank, Monthly Bulletin; BIS data.

Looking at the credit to GDP gap and non-performing loans (NPLs) in Saudi Arabia (Figure 8) reveals that during peak periods of credit expansion, indicated by a wide credit to GDP gap, there was not a corresponding rise in NPLs. This suggests that an increase in credit availability within the economy does not lead to a proportional increase in loan defaults. Saudi banks seem to maintain the quality of their loan portfolios, possibly due to stringent lending criteria, robust risk assessment procedures and proactive loan recovery strategies, helping to keep NPLs at bay even during periods of aggressive credit growth.¹¹

An analysis of credit distribution in Saudi Arabia by maturity reveals a structural shift towards long-term financing, indicative of strategic alignment with Vision 2030 goals. Figure 9 illustrates this trend, showing a growing proportion of long-term bank credit (from 24% as a share of total credit in 2010 to 48% in 2023). This shift to long-term maturity financing reflects a commitment to enabling large-scale, long-horizon development projects and investments critical for economic diversification. The expansion focused on long-term lending underlines the financial sector's increasing capacity to facilitate ambitious, future-oriented development. As Saudi banks allocate more long-term credit to strategic sectors, they provide a stable foundation to propel the Kingdom's economic transformation and progress.

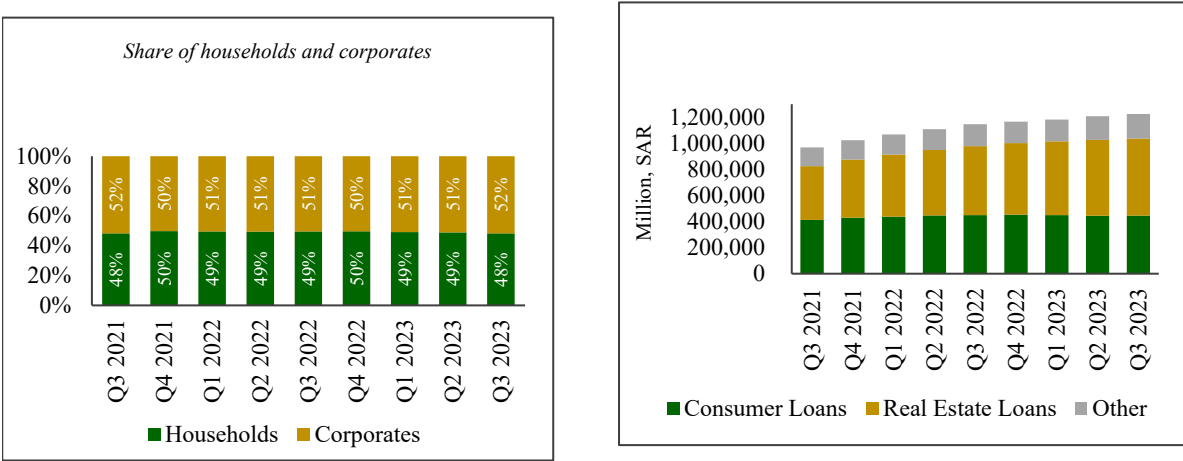
¹¹ Similar conclusions can be found in M Al Rasasi and S Alsabban, "On the Determinants of Loan Default in the Saudi Banking System", *Applied Economics and Finance*, Vol. 11, No. 2; 2024.



Source: Saudi Central Bank, *Monthly Bulletin*.

Further, a comprehensive examination of Figures 10, 11 and 12 provides insights into credit allocation trends between households and corporations in Saudi Arabia. Figure 10 reveals a steady distribution of bank credit to the private sector, with corporations receiving a slightly consistent share from Q3 2021 to Q3 2023. This points to steady business confidence and investment, crucial for long-term economic growth. The relatively stable household credit share indicates retained consumer confidence and access to financing for personal consumption. That said, Figure 11 shows gradual growth in the total value of household lending, especially in real estate loans, signalling an expansion in the property market (driven by government support to increase home ownership by locals). On the corporate side, Figure 12 displays increased diversification of bank credit across sectors like manufacturing, construction and others essential for sustainable economic development. This diversified credit allocation strategy supports a robust economic approach by channelling financing towards productive areas that drive economic diversification and resilience.

Figure 10: Bank credit to private sector in Saudi Arabia

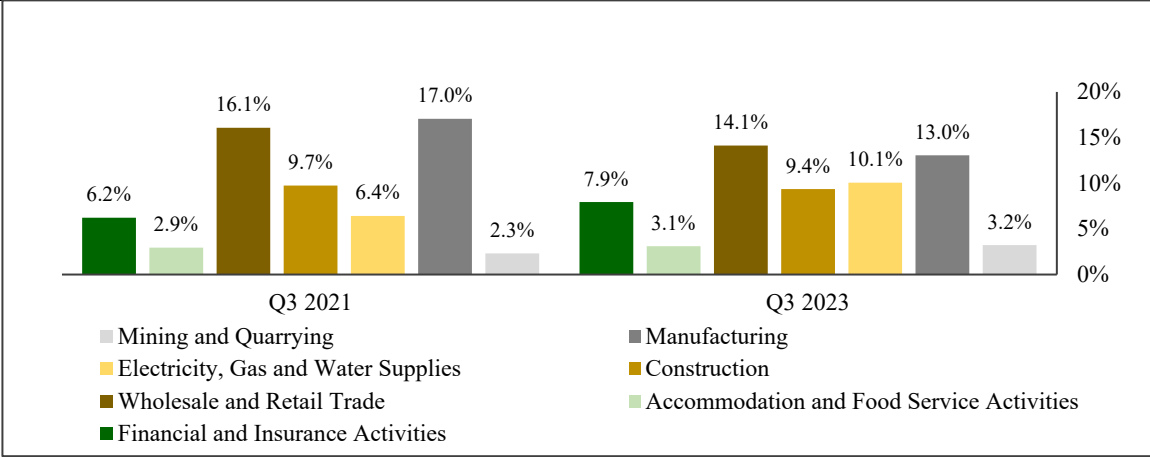


Source: Saudi Central Bank, Monthly Bulletin.

Source: Saudi Central Bank, Monthly Bulletin.

Bank credit to corporates allocation by economic activities in Saudi Arabia

Figure 12



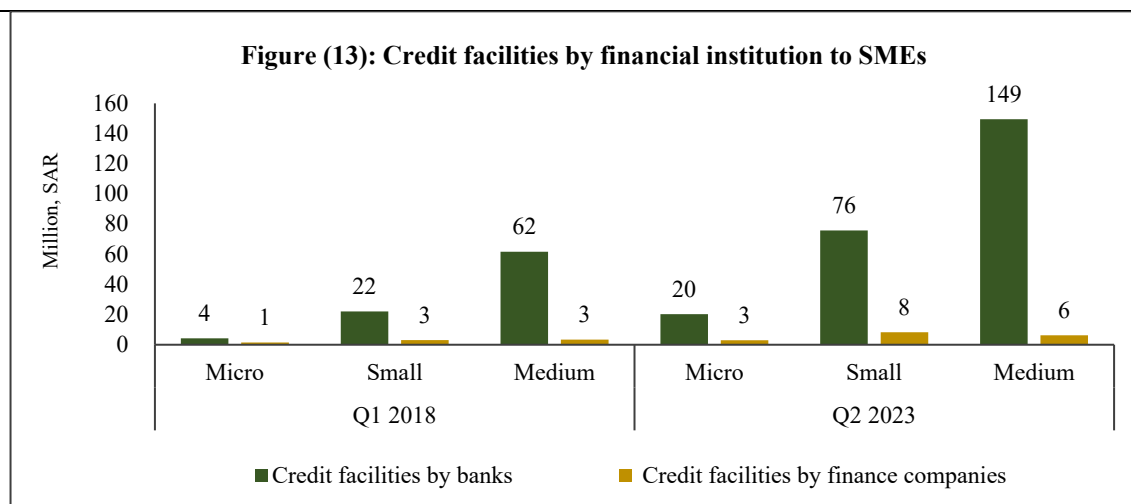
Source: Saudi Central Bank, *Monthly Bulletin*.

Moreover, the data from Figure 13 indicate a positive trajectory in the support extended to SMEs by financial institutions in Saudi Arabia. There is a remarkable increase in support for medium-sized enterprises by Q2 2023, with credit facilities from banks showing a substantial rise, indicating targeted financial support for this segment. The growth in credit facilities to medium-sized enterprises is indicative of a maturing SME sector, which plays an important role in scaling economic activities. The support for micro and small enterprises remains essential, as these entities represent an important sector within the economy often leading to new ideas and boosting local business. The data point to a strategic approach by both banks and

NBFIs to boost the SME sector, a positive sign for the overall health and growth potential of the economy. The increasing involvement of NBFIs, however, reflects a diversification in the financial ecosystem, providing SMEs with a broader range of financing options to support their business operations and expansion plans.

Credit facilities by financial institution to SMEs

Figure 13



Source: Saudi Central Bank, *Monthly Bulletin*.

In a nutshell, Saudi Arabia's approach to credit allocation is a demonstration of a financial sector increasingly advancing towards fostering a robust economy. The steady increase in private sector credit underscores the pivotal role banks play in bracing non-oil industries. Notably, the shift towards long-term financing mirrors the financial institutions' readiness to supply the capital needed for the Kingdom's transformative economic programmes. At the same time, credit support to SMEs and important industries highlights an investment in new, high-productivity fields crucial for sustainable long-term growth. With vigilant regulatory oversight by SAMA ensuring that credit expansion does not distress macroeconomic stability, Saudi Arabia's credit allocation effectively harmonises with national development goals, with banks emerging as integral players in the diversification plan.

Policy measures

Central banks and authorities, particularly in EMEs, are increasingly recognising the vital role of digital innovation in financing long-term economic growth while mitigating emerging risks. Their primary strategy includes fostering an environment conducive to fintech development, especially in payments, which is crucial for everyday financial transactions. This strategy is particularly vital for developing economies, where bridging financial inclusion gaps is a significant challenge. That said, **central banks should balance promoting innovation with their primary mandates of financial stability and customer protection**, navigating the

complexities of new products and delivery channels that could introduce risks to the financial system.

An example of a strategic approach can be seen in Saudi Arabia, where SAMA has organised workshops focusing on digitalisation, innovation and fintech in the financial sector. These workshops aim to promote competition and innovation and strengthen the fintech sector in line with the Kingdom's Vision 2030. Initiatives like "Saudi Fintech", launched in cooperation with the Capital Market Authority in Saudi Arabia, are designed to transform the Kingdom into a significant global hub for financial technologies. Such efforts show how central banks can play a leading role in nurturing an ecosystem conducive to digital financial service innovations.

Further, more should be done by **central banks in EMEs to deepen and diversify the financial system to improve capital allocation**. An inclusive financial system, which provides comprehensive access to financial services, is essential for long-term financial security. This involves targeting market gaps and removing barriers that prevent segments in the economy from participating in the financial system. Building a comprehensive financial infrastructure, including payments, credit, savings, insurance and non-financial components like inclusive identification systems and secure internet access, is crucial in this increasingly digital finance era.

Moreover, **the Bank for International Settlements (BIS) underscores the importance of international collaboration in supporting technological capacity, enhancing cross-border payments and supporting financial inclusion**. The BIS Innovation Hub is instrumental in spearheading central banks' responses to digital innovation and fostering international collaboration, emphasising the need for central banks to be at the forefront of technology to serve society effectively.

Central banks are also exploring the potential of digital payments and central bank digital currencies (CBDCs). While no major jurisdiction has issued a retail CBDC yet, many central banks have published research and some have initiated pilot projects. This underscores the growing interest in leveraging digital currencies to enhance financial inclusion and economic growth. Enhancing coordination to prevent fragmentation in cross-border payment systems is identified as a key priority, requiring concerted efforts from global financial leaders.

Regulatory technology (regtech) and supervisory technology (suptech) are other key areas of interest as highlighted by the BIS. These technologies are crucial for addressing regulatory and compliance requirements more effectively and efficiently. The BIS Innovation Hub's initiatives, such as the global virtual TechSprint and the development of a real-time capable market monitoring tool, contribute significantly to the regtech and suptech agenda, demonstrating the pivotal role of technological innovation in advancing central banking and financial supervision.

In conclusion, central banks and authorities can enhance long-term economic growth by fostering equitable credit distribution and digital innovations while ensuring financial stability. This involves creating a conducive environment for fintech development, focusing on inclusive financial systems, leveraging international collaboration and exploring emerging technologies like CBDCs, regtech and suptech. These efforts will collectively contribute to a more robust, diverse and efficient financial system, crucial for sustainable economic growth and development. Central banks can also improve capital allocation by expanding the diversity of financial instruments and ensuring inclusive access. All individuals and enterprises, especially

underserved groups, should have access to and usage of a full range of credit, financing, payments, savings and insurance solutions tailored to their needs. Thus, central banks must identify and eliminate market gaps and barriers that prevent equitable access. Robust financial and non-financial infrastructure including digital IDs, internet access and digital finance solutions is crucial for enabling inclusive systems. The focus should be on outcomes – stability, resilience, wealth creation and economic mobility for all.

The changing nature of the financial system: implications for resilience and long-term growth in emerging market economies (EMEs)

South African Reserve Bank

EME financial systems: what has changed?

1. How have EME financial systems changed in recent years? How is the relative importance of bank intermediation and capital markets shifting? How important are non-bank financial intermediaries (NBFIs) in EMEs and what is driving their expansion? What are the major changes in the domestic and foreign investor base? How did the Covid-19 pandemic shape these developments?

The period since the Great Financial Crisis (GFC) has seen major changes to the global financial system and the process of financial intermediation. Some of these changes were driven by policy measures to address shortcomings and vulnerabilities, such as the global reference rate reform process. Others resulted from the unprecedented actions by central banks in response to major crises including the GFC and the Covid-19 pandemic. These included the use of central bank balance sheets to support systemically important markets when policy rates were already close to their nominal zero lower bounds, with the boost in liquidity prompting several central banks to switch their monetary policy implementation frameworks towards ones based on ample liquidity.

Governments likewise responded to successive crises by ramping up fiscal support, which led to significant increases in sovereign debt funding. A major consequence of this has been an increase in the exposure of financial sectors to sovereign debt. Yet other changes were prompted by various ongoing disruptions, including climate change, the proliferation of digital assets and developments in artificial intelligence. EMEs have found themselves caught up in these changes in addition to being confronted by their own unique challenges.

South Africa's financial system is well developed and generally perceived to be on par with more advanced economies, with well regulated capital markets that are deep and liquid. The banking sector is its largest financial sector, followed by insurance companies, pension funds, collective investment schemes and state-owned financial institutions. It has unique idiosyncrasies that policymakers must manage. Its financial system is highly diversified, but sectors like banking, and to a lesser extent insurance, are concentrated with significant barriers to entry. There is also a high level of interconnectedness between banks and insurance companies. Whilst the proportion of citizens with access to bank accounts is high, active usage of banking services is low and skewed towards a small, affluent portion of the population.

Deteriorating fiscal finances since the GFC have led to successive sovereign credit rating downgrades, with three major credit rating agencies currently rating South African sovereign debt as speculative. The fiscal slippage has been driven by a combination of lacklustre revenue growth in the face of a stagnant economy, rampant current spending growth and the national government bailing out underperforming state-owned enterprises (SOEs). The rating downgrades have resulted in the reduction of South Africa's weight in major global bond indices such as the FTSE World Government Bond Index (WGBI). This has diminished its attractiveness as a destination for foreign portfolio flows.

The Financial Action Task Force (FATF), a global financial crimes watchdog, greylisted South Africa in February 2023 for not fully complying with international standards with respect to the prevention of money laundering, terrorist financing and proliferation financing. Although the greylisting announcement did not cause major market disruptions, the event has further lessened the attractiveness of South Africa as an investment destination. Rising global inflation has also led to synchronised global monetary tightening since early 2022, resulting in tighter financial conditions and a reduction in the relative attractiveness of emerging markets as investment destinations.

For South Africa, the net result of these factors has been a decrease in foreign ownership of its sovereign debt and a consequent increase in the exposure of its financial sector to it, especially its NBFIs. Currently, foreign holdings have remained stable in 2023 at around 25.6%, while holdings by local participants, ie banks, insurers, pension funds and other NBFIs, have also stabilised at around 20.5%, 6.4%, 23.6% and 21.7% respectively. The resilience of the NBFI sector has thus become a key focus in the monitoring of financial stability risk.

Bank intermediation remains critical for the financing of long-term growth in South Africa. It has been supported by the availability of funding in the form of both deposits and debt capital market instruments. The non-government debt capital market is dominated by instruments issued by financial institutions (mostly banks), with issuance by SOEs declining on a relative basis as their financial health dramatically deteriorated over the past decade. The corporate debt capital market has been growing steadily since it effectively started just over two decades ago, although the Covid-19 pandemic interrupted the positive trend. A major impediment to capital market development has been the country's tepid growth since the GFC. With limited growth opportunities, most of the demand for funding has been met by the banking sector. However, the development of the debt capital market has allowed corporates to diversify their funding sources and opened up an opportunity for direct participation by NBFIs.

EMEs' share of global NBFI sector assets has increased over time, but remains small compared to global NBFI assets. The share of financial assets held by the NBFI sector has increased at a faster pace in EMEs than advanced economies (AEs) over the last decade, driven by large increases in the assets held by NBFI sectors in China, India, Saudi Arabia and Brazil. In South Africa, the assets of the NBFI sector saw compound annual growth of 8.4% from 2011 to 2022, compared to 7.1% for bank assets over the same period. The share of NBFI assets to total financial assets rose from 63.2% in 2011 to 65.1% in 2022. Banks' share of assets declined from 36.0% to 32.4% over the same period.

One consequence of the Covid-19 pandemic has been an acceleration in the digital transformation processes in South Africa's banking and other financial services. A major obstacle to the South African economy currently is rolling blackouts or loadshedding, as the state-owned power utility Eskom struggles to meet demand. Mismanagement and a dearth of timely investment has meant that the utility continues to rely on an ageing fleet of coal-fired power stations. The private sector has responded by ramping up investment in alternative energy sources.

2. How is lending by state-owned banks and development banks evolving? Which sectors are being financed? Did the pandemic affect the lending by these institutions and what is the outlook?

South Africa has development finance institutions (DFIs), government programmes and a loan guarantee scheme as part of the government's lending institutions, as well as the Postbank. The Postbank provides limited services and only acts as a government-to-person payments institution, mainly through SASSA (South African Social Security Agency) transactional cards. A ZAR 200 billion Covid-19 loan guarantee scheme was significantly underutilised and was discontinued in June 2021. In addition, there are currently 52 government programmes targeted at financing micro, small and medium-sized enterprises (MSMEs) through DFIs.

In 2019/20, the annual budgeted finance for MSMEs was ZAR 18 billion. The bulk of this is in the form of debt, amounting to 0.36% of GDP and 2.8% of outstanding business lending to small and medium-sized enterprises (SMEs). Equity finance is the least used instrument after debt finance, grants and blended products offered. Most of the finance is primarily offered by the Small Enterprise Finance Agency (SEFA) and the Industrial Development Corporation (IDC). SEFA finances MSMEs through banks and NBFIs while the IDC directly provides debt finance to MSMEs.

In August 2023, the National Treasury launched the Energy Bounce Back programme targeted at SMEs. Micro and informal businesses can also draw from the scheme, which is structured to generate 1000MW in additional generation capacity and will be facilitated by both banks and non-banks, including DFIs.

3. How has the sectoral allocation of credit changed over time? Have there been major shifts in credit allocation between households and non-financial firms or within the non-financial corporate sector?

There is roughly an equal distribution of credit extension between private sector companies and households, although an allocation shift from households to corporates has been noted over the past 10 years. When analysing credit allocation by economic sector, the distribution has been relatively stable over time although the allocation of credit to the government sector has been increasing gradually from 2019, with the allocation to the financial intermediation and real estate sectors decreasing somewhat.

The allocation of finance and long-term growth

4. What are the implications of recent shifts in the importance of bank intermediation and capital markets for financing long-run growth?

The development of the South African debt capital market and the growth of private funding have not yet significantly displaced the importance of continued intermediation by private commercial banks. However, over the past decade local professional investors have built an increasingly sophisticated internal credit risk assessment system. The greater availability of credit skills outside of the banking sector has encouraged investor participation in both the non-government listed debt and alternative credit markets. The implications for financing long-run growth are positive, as the diversification of available funding sources allows private financing to support the development of economic infrastructure. The inadequate provision and maintenance of critical infrastructure (electricity, water and transport) by financially constrained public sector entities is a significant impediment to the improvement of long-run growth in South Africa.

5. How has the various markets' (equity/bond/bank loans) ability to promote growth evolved over time? How efficient are they in financing high-growth firms? Are there concerns about financing zombie firms?

South Africa's equity and public debt capital markets are effective in channelling capital to established productive firms that have listed equity or debt instruments. However, the equity market has suffered a persistent trend of delistings, with the number of firms listed on the Johannesburg Stock Exchange (JSE) decreasing to approximately 350, from over 700 during the past two decades. Whilst delisting has been a global phenomenon in recent years, idiosyncratic factors have made South African companies more susceptible. These include the challenging domestic growth environment, major bottlenecks in key network industries like electricity and transport raising the cost of doing business, a steady outflow of foreign equity portfolio flows, poor returns on capital, and private equity funds buying "cheap" listed companies.

The private equity market has grown considerably and can provide capital to large and medium-sized firms, as well as high-growth companies, but equity funding for small enterprises is limited and typically provided by DFIs. Debt capital market funding is available to firms with high-grade credit ratings (local currency, national scale), with primary market issuance growing again after the Covid-19 issuance dip.

Debt capital is channelled to firms, including SMEs, through a well developed banking system. Structural impediments, such as a restrictive regulatory framework, have recently been partially addressed, which has immediately led to positive responses from the private sector. Large increases in fixed investment into renewable energy generation have already occurred and this is expected to continue given the imperative to shift away from the coal-based electricity production that currently dominates. Capital, both equity and debt, is provided by a variety of private sector investors, predominantly through unlisted funding vehicles as well as some pension

funds and a few specialised investment funds. Bank loans are used extensively in the construction phase of project finance transactions, with projects typically refinanced once operational. The rapid growth in the issuance of green and sustainability-linked bonds over the last three years supports the efforts of businesses to build operational resilience and reduce their carbon footprint.

There has been a sustained increase in public debt funding, with gross national government debt increasing from 48.5% of GDP in the 2017/18 fiscal year to 74.7% projected in the current 2023/24 fiscal year and a peak of 77.7% in the 2025/26 fiscal year.¹ Recent increases have been driven by a combination of revenue shortfalls, due to weak growth and lower commodity prices, and expenditure overruns. The overruns have been fuelled by a combination of ongoing Covid-related fiscal support measures, wage bill growth, bailouts to distressed public sector companies and rising debt service costs.

Increased public debt funding risks crowding out private sector access to loan funding, whilst the sovereign's sub-investment grade rating pushes up the cost of debt to the broader economy. Significant portfolio exposure to public debt also risks adversely impacting the creditworthiness of debt holders.

Local investors' increased public debt exposure and more speculative foreign exposure raise financial stability concerns with respect to liquidity and volatility. Whilst local banks' exposure to sovereign debt has increased, exposure of NBFIs has increased by even larger amounts.²

Financing of zombie firms is not a significant concern for the banking sector, though it weighs on fiscal finances. Whilst the Covid-19 pandemic worsened the financial positions of firms that were already struggling, banks have maintained prudent risk management and corporate governance practices in identifying, monitoring and reporting on non-performing loans.

6. How important is foreign capital for long-term growth? Does the composition of investment by type of investor and currency matter?

Consensus views 20–30 years ago were that allowing foreign capital inflows would enhance long-term growth in EMEs.³ The argument, made among others by Stanley Fischer in 1997, was that open capital markets increased the pool of investable funds and facilitated a more efficient allocation of savings towards more productive uses.⁴ Benefits would be strongest for low-saving EMEs that typically run current account deficits. Foreign capital inflows would also encourage more competition in the domestic financial sector and foster more policy discipline (amid fears that foreign investors would otherwise “pull out”).

¹ See National Treasury, *Medium-Term Budget Policy Statement*, November 2023.

² See South African Reserve Bank, *Financial Stability Review*, May 2023.

³ See L Kganyago, “The contribution of capital flows to sustainable growth in emerging markets”, IMF 2023 Michel Camdessus Central Banking Lecture, 11 July 2023.

⁴ See S Fischer, “Capital account liberalization and the role of the IMF”, speech at an IMF Seminar, 19 September 1997.

Foreign direct investment (FDI) was generally seen as the preferred type of inflow, due to its lesser volatility and role in transferring technology and helping local firms to adapt to international best practice. FDI statistics, however, typically fail to distinguish between “greenfield” and M&A investment, even though the impact of the latter on domestic capital formation, productivity and skills development may be significantly lower. Separately, most EMEs tried to boost the share of local currency inflows, to reduce external vulnerability by transferring foreign exchange (FX) risk to lenders.

Academic literature has become more critical of the benefits from capital inflows in the last couple of decades, and this has been backed by evidence that fewer EMEs converged towards AE income levels in the 2010s than in the previous decade – this, even as capital continued to flow to EMEs and interest rates were at unusually low levels. Some economists have pointed out that, not only did some countries (China and the “Asian tigers”) converge without the assistance of capital inflows, but there is also evidence of a negative correlation between growth and capital openness.⁵

That said, South Africa is capital-scarce, with insufficient savings to fund investment. It requires foreign capital to finance its current account deficit, and a lack of foreign capital risks exacerbating currency volatility and adversely impacting long-term growth. The currency denomination of the investments is not of primary importance, but rand-denominated foreign capital investments are preferable as these investments do not expose the domestic party to currency risk.

7. How have changes in the sectoral allocation of credit affected the economy’s growth potential?

We observe some changes in credit allocation between households and firms post-GFC in South Africa, but these changes have not been the drivers of the decline in the country’s growth potential. Rather, numerous negative supply side shocks have worsened growth potential.

Credit extended to households declined from around 36% of total credit in 2008 to around 28% in 2023, partly reflecting more cautious lending following the crisis and high household leveraging at the time of the GFC. The leveraging was driven by strong gains in house prices, growth in per capita incomes and greater financial inclusion from the late 1990s to the GFC.⁶ As a share of disposable income, household debt increased from 46.8% over the middle quarters of 2002 to a peak of 78.1% in the first quarter of 2008, before easing to a low of 60.3% in the second quarter of 2018 and sitting at 62.3% in the fourth quarter of 2023.

Meanwhile, on the firms’ side, there have been less significant changes to credit allocation, with the most notable being increases of 5.4%, 4.9% and 1.9% to the

⁵ See, for example, D Rodrik and A Subramanian, “Why did financial globalization disappoint?”, *IMF Staff Papers*, vol 56, no 1, 2009, pp 112–38.

⁶ For research on South African household wealth, consumption and credit conditions, see J Aron and J Muelbauer (2011), “Wealth, credit conditions and consumption in South Africa”, paper prepared for the Special IARIW-SSA conference on measuring national income, wealth, poverty, and inequality in African countries, Cape Town, South Africa, 28 September–1 October 2011.

community services, real estate and electricity sectors, respectively.⁷ South Africa's potential growth has fallen over the same period to levels far below comparable EMEs, from 3.6% in 2008 to 0.14% in 2023.

The drop in potential growth can be explained by the changes to the production function – which estimates the level of potential output commensurate with the quantities of productive factors (such as labour and capital) and how efficiently (productively) these are combined in the production process, while inflation is at target.⁸ South Africa has abundant labour supply but there is a shortage in the levels of skills required to optimise productivity. In turn, this limits investment in new production processes, dampening credit demand by the corporate sector.

Several negative supply shocks have also weighed on potential growth over the last 15 years. These include a sharp rise in government debt which has crowded out private investment;⁹ shrinkage of the export-oriented manufacturing sector; a worsening business climate on the back of economic policy uncertainty and declining competitiveness;¹⁰ labour market inefficiencies and the loss of skilled labour through migration; collapsing state capacity, with loadshedding probably the most significant productive capacity shock in the last five years; and ongoing special exclusion.^{11,12,13}

8. How important is lending by state-owned and/or development banks from the perspective of long-term growth and employment? Are there concerns about lending to the public sector and to SOEs crowding out lending to the private sector over the long term? How has the pandemic affected these trends?

Development banks have a crucial role to play in the economy, particularly in an EME such as South Africa. The primary role of development banks is to provide access to credit in spaces which commercial banks deem "too risky". In South Africa, the objectives of DFIs such as the Development Bank of Southern Africa (DBSA), the IDC and the National Empowerment Fund (NEF) are to invest in projects that are both financially viable and meet additional objectives such as regional integration, improved standards of living, employment creation and sustainable economic growth. SOEs and development banks provide funding to public sector projects,

⁷ Other sectors experienced changes of between 0 and 1.2%, negligible for the purposes of this discussion.

⁸ See T Janse van Rensburg and K Morema, "Reflections on load-shedding and potential GDP", *Occasional Bulletin of Economic Notes*, 23/01, South African Reserve Bank, June 2023.

⁹ See R Hausmann, F Sturzenegger, P Goldstein, F Muci and D Barrios, "Macroeconomic risks after a decade of microeconomic turbulence: South Africa 2007–2020", *SA-Tied Working Papers*, no 206, Helsinki: UNU-WIDER, February 2022.

¹⁰ See F Faure, "South Africa: what's behind the growth slowdown?", *Eco Conjuncture*, April 2017.

¹¹ Loadshedding is estimated to have undermined growth by between 0.7 and 3.3 percentage points during this period.

¹² See T Janse van Rensburg and K Morema (2023), *op cit*.

¹³ See R Hausmann et al, "Growth through inclusion in South Africa", *CID Faculty Working Papers*, no 434, November 2023.

economic sectors (like SMEs and emergent industries such as digitisation, artificial intelligence and fintech) or groups (like women or black entrepreneurs) that are not well serviced by the mainstream financial sector.

Crowding-out of private investment by public borrowers (government and SOEs) can occur either via quantities (scarce savings are absorbed by high public deficits) or prices (public borrowing raises the whole spectrum of interest rates and makes it prohibitive for private firms to finance capital expenditure). Even when capital markets are open and the availability of funding is in theory not an issue, the sovereign credit rating “caps” the rating of other issuers and renders any external funding costly and volatile.

In South Africa, public debt declined in the 2000s relative to the assets of the banking sector, the life insurance industry and pension funds, a move that subsequently reversed in the 2010s and beyond the pandemic. As a result, public sector bonds comprise a rising share of bank assets, while their share of life insurers’ and pension funds’ holdings has stabilised after an earlier drop. This has coincided with weaker growth in bank credit to the private sector, and weaker equity issuance over the last 10–15 years compared with the earlier decade. The pre-pandemic composition of banks’ exposures to SOEs as a percentage of total gross credit extended was at 2% and this has since halved.

South Africa has failed to benefit from capital market openness over the last decade, as: (1) foreign equity portfolio inflows dwindled relative to bond inflows amid an environment of low growth and poorer corporate performance; and (2) the public sector continues to absorb the bulk of bond inflows. Furthermore, the share of non-resident holdings of government bonds has declined, forcing local institutions to absorb an even greater share of new debt. Banks have reduced their exposure to government bonds from the peak reached in the pandemic, although smaller, non-system banks have increased their exposure to sovereign debt significantly. Non-banks have continued to increase their exposure gradually.

The Liquidity Coverage Ratios (LCRs) of non-systemic banks are much higher than the sector’s LCR, suggesting that these banks are better able to meet their short-term obligations with their large holdings of high-quality liquid assets (HQLA) (which consist mainly of government debt). Non-systemic banks, however, need to be well hedged to meet any emerging vulnerabilities such as changes in the sovereign’s credit rating as well as increasing bond yields.

9. How important is digital innovation (eg fintech or big tech platforms, machine learning) for reducing credit constraints, including for SMEs? How important is digital innovation for reducing informality? What promising projects and/or developments are ongoing in your jurisdiction?

Digital innovation is important for addressing the challenges faced by MSMEs in accessing finance, particularly in EMEs where traditional financial institutions and credit infrastructures do not always cater to or serve their needs. Traditional credit assessment methodologies, for example, can be enhanced and complemented with

alternative sources of data and innovative data analytics methods like machine learning to promote credit access.

In South Africa, the consumer credit information and information-sharing landscape is well developed but entirely individual consumer-focused. In stark contrast, there is no credit information-sharing infrastructure designed for businesses. This presents an opportunity for digital innovation, which could improve MSME data-gathering, -sharing and analysis.

Digital innovation could also reduce the frictions experienced during the credit life cycle from application to disbursement and loan management, where innovative lenders can provide online and app-based platforms for MSMEs to submit their applications and manage their loans. This would remove several obstacles, such as needing to close shop and travel long distances to lender branches, having to submit physical copies of application forms and required documents, or relying on copies of statements delivered via post or email.

Lastly, one of the major constraints to MSME finance in South Africa is information asymmetry, and informality is a key driver of this challenge. MSMEs are often unable to provide a reliable form of identification, proof of address or adequate proof of income, which hinders lenders' ability to assess their credit eligibility. According to the 2020 FinScope MSME survey by FinMark Trust, 58% of MSMEs in South Africa are informal, 95% of MSMEs use cash to receive payments from clients, and only 54% use digital payment channels. Increased access to digital payments could make MSMEs more visible to lenders as they would have more data on their cash flow management.

Bridging the digital divide can stimulate economic growth, enable MSMEs to access the formal economy and pave the way for wider adoption of digital financial services. There are several public and private sector initiatives to support the MSME finance landscape:

Public sector:

- **IFWG:** The Intergovernmental Fintech Working Group (IFWG) was established in 2016 to understand the growing role of fintech and innovation in the financial sector and explore how regulators can proactively assess emerging risks and opportunities.
- **Ministry of Finance:** The National Treasury is finalising the Financial Inclusion Policy Framework and Strategy to increase financial access and usage for vulnerable groups and MSMEs.
- **Finfind:** Finfind, an online access to finance platform, was launched by the Minister of Small Business Development in 2015 to provide an online platform that educates and assists MSMEs, helps them to access finance and facilitates increased deal flow for MSME funders. Finfind gathers data from MSMEs looking for finance and automatically links them with available matching finance products stored in its funder database.
- **NCR and IFC:** The International Finance Corporation (IFC) is supporting the National Credit Regulator (NCR) and key stakeholders to strengthen and expand credit information-sharing by supporting the onboarding of small credit providers to share information with private credit bureaus and by piloting, testing

and promoting the adoption and usage of alternative data scores for MSME creditworthiness assessments.

Private sector:

- **PayShap:** PayShap, a real-time rapid payment platform, was launched in March 2023, driven by BankservAfrica and the Payments Association of South Africa (PASA). The platform facilitates the real-time clearance of low-value transactions to a maximum value of ZAR 3,000. At this initial phase, only banks have access to the platform, with eight banks currently participating.
- South Africa also has a small but growing fintech credit sector with local fintech companies raising capital and launching innovative credit solutions. These include Lula, Merchant Capital, Fundrr, Bridgement, Pollen Finance and Zande Africa.
- Covid-19 has also led to an acceleration of digitisation among financial institutions in South Africa.

Excessive finance, resilience and long-run growth

10. At what point or under what circumstances does finance become “excessive”, eg by generating higher volatility of output growth and/or becoming a drag on long-term growth? What channels are relevant?

There is no “one size fits all” financial sector for EMEs relative to the size of their economies. The structure of economic output, the importance of external trade and the country’s role (or not) as a regional financial hub all influence the optimal size of the sector. For example, economies rich in extractive resources (like South Africa) typically are more capital-intensive with a larger financial sector.

The size of the financial sector may become excessive if credit becomes not only too large relative to the economy’s capacity to invest profitably (thus creating excess leverage and diminishing returns on investment) but also too volatile. In the latter case, the economy will experience boom and bust cycles that result in inefficient allocation of capital, an unusually high level of corporate failures and (potentially) unemployment hysteresis. Over time, this would weaken potential growth.

Different channels can be at work: frequently, the mix of cheap funding and limited opportunities in productive investments will generate credit-fuelled asset price bubbles (in equities or real estate) or unsustainable household leveraging. Abundant and cheap financing can also sustain unprofitable “zombie” companies for too long, undermining productivity growth. Finally, it can enable the financing of poorly governed or ill disciplined public entities, allowing them to delay growth-enhancing reform or, at worst, funding corrupt practices.¹⁴

¹⁴ See, for instance, D Acemoglu, “The great debt cleanup”, Project Syndicate, www.project-syndicate.org, 23 June 2020.

11. When does exposure to international finance increase macroeconomic volatility and reduce long-run growth? What economic channels and institutional factors are relevant? (See eg recent evidence by Abhijit Banerjee and Atif Mian here.)

If the recipient country faces an “investment constraint” rather than a savings constraint, excess inflows (driven by push factors such as the global financial cycle) will no longer fund productive investments.¹⁵ Rather, they may be recycled into a domestic credit bubble – with potential FX asset-liability mismatches – or sustain excess government debt build-up, or force FX appreciation that is unwarranted by fundamentals (as some EMEs faced in the early 2010s).

Banerjee and Mian (2023)¹⁶ highlight how a country’s exposure to the global financial cycle can generate the type of volatility that is most damaging for growth prospects. Their analysis builds on the findings of Mian et al (2020),¹⁷ who identified the existence of a household credit channel (besides a productive investment channel) in the impact of foreign capital on a recipient economy. They found that a higher supply of credit will amplify the business cycle and trigger increases in the relative price of non-tradables. Typically, negative links between credit cycles and growth are worse when the FX regime is less flexible, and the share of FX borrowing is higher.

The depth of domestic capital markets (and hence their ability to recycle foreign flows into productive investments) will influence the “investment constraint”. So will factors such as regulatory quality, the strength of institutions, the existence of rent extraction and the availability of skilled labour to implement imported technologies. South Africa’s example highlights how the deterioration of governance indicators in the 2010s coincided with a less productive use of capital inflows. Admittedly, even pre-GFC literature that encouraged open capital markets flagged the necessity of improved governance, regulation and transparency to ensure benefits from external finance.¹⁸ However, critics such as Rodrik and Subramanian (op cit) claim that such improvements are only possible in the longer term; that is, not as fast as the capital inflow cycle.

12. Is there an optimal financial structure that minimises output volatility and maximises long-run growth? How have recent changes in the structure of financial intermediation affected your

¹⁵ See Rodrik and Subramanian (op cit).

¹⁶ See A Banerjee and A Mian, “Global finance and growth”, presentation to the SARB’s Biennial Conference, 30 August 2023.

¹⁷ See A Mian, A Sufi and E Verner, “How does credit supply expansion affect the real economy? The productive capacity and household demand channels”, *The Journal of Finance*, vol 75, no 2, April 2020, pp 949–94.

¹⁸ See, for instance, OECD, “Getting the most out of international capital flows”, *OECD Economic Outlook*, vol 2011, no 1, May, Chapter 6.

economy's ability to withstand domestic and external shocks as well as support growth?

As EMEs typically are at different stages of economic development, businesses will vary in terms of size, risk and financing needs. Various studies have found that bank-based structures are likely to be better at promoting growth during early stages of development, and that they usually gradually give way to capital markets, ie the economies become more market-oriented as they develop.¹⁹ Economic development thus increases the demand for the services provided by securities markets relative to services provided by banks only.²⁰

Controlling for factors underlying growth, studies have also found that countries with larger banks and more active equity markets grow faster over subsequent decades. Industries and companies which rely on foreign financing also grow faster in countries with a well developed financial system.²¹

However, results do not imply that financial sophistication is always exogenous to economic growth. For instance, technological innovation can affect financial systems. Equally, politics and legal systems can influence financial and economic development. In some cases, the latter can cause a country's financial structure to deviate from its optimal course, resulting in efficiency and welfare losses.²²

Output volatility can be minimised when institutions are able to intermediate funds in an uninterrupted manner, keeping confidence in the financial system intact. However, volatility in financial assets like currencies or bonds is not necessarily a threat to financial stability or long-term growth, as it reflects a response to changing conditions and provides signals to intermediaries to allow for the efficient allocation of capital. Where volatility is unwarranted is when it unduly affects the solvency, liquidity positions or collateral values of financial intermediaries or their clients (as was the case during the Covid-19 crisis). This can happen if asset valuations persistently deviate from fundamentals and result in excess leveraging or risk-taking.

Prior to the pandemic, the South African Reserve Bank (SARB), in tandem with the global community, had responded to the 2007–08 financial crisis by focusing on four core areas of reform, namely: building more resilient financial institutions; ending too-big-to-fail; making derivatives markets safer; and enhancing the resilience of non-bank financial intermediation.

South African financial markets are relatively sophisticated, allowing for hedging and risk transfer, which also helps limit the vulnerability of market participants to volatility. However, a notable financial stability risk is the interconnectedness between

¹⁹ See R Cull, A Demirgüç-Kunt and J Yifu Lin, "Financial structure and economic development: a reassessment", *The World Bank Economic Review*, vol 27, no 3, 2013, pp 470–75.

²⁰ There can be exceptions though – mining-based economies can see equity markets grow at an early stage of development, as was the case in South Africa and Australia in the late 19th century.

²¹ See R Levine, "Financial development and economic growth: views and agenda", *Journal of Economic Literature*, vol 35, no 2, June 1997, pp 688–726.

²² South Africa is an example of a country which is a recipient of capital inflows and has a sophisticated financial system, yet because of other constraints, this system has not helped deliver strong growth in the last decade and a half.

the financial sector and government, with the former holding a large amount of sovereign debt.²³

South Africa has a floating exchange rate and low levels of (sovereign) FX debt. With a well entrenched inflation targeting regime, the currency can fluctuate to absorb shocks without de-anchoring inflation expectations or generating financial stability problems by damaging public or private sector balance sheets.

Policy measures

13. What structural policy measures are needed in your jurisdiction to support the allocation of finance for long-term growth, including by further developing capital markets? In which markets is there most scope for development? What is the role of the central bank?

An important structural factor in encouraging economic development is deep and liquid markets. This allows for increased risk and capital pooling essential to augmenting the country's productive capacity. South Africa generally enjoys deep and liquid markets. Another structural factor that impacts development is the degree of concentration within the broader financial sector and subsectors. Reducing concentration positively impacts efficient financial intermediation. South Africa has a high degree of financial sector concentration.

A country should also increase the capacity of corporates, especially SMEs, to access bank funding and tap into its capital markets. There are a number of initiatives, both public and private, aimed at extending such access, including through the use of digital innovation.

14. How can central banks and other authorities best encourage digital innovations to finance long-term growth while mitigating emerging risks?

Central banks and other authorities can best encourage digital innovation by creating an enabling risk-based policy and regulatory environment. This could include introducing tiered licensing regimes, enabling data-sharing between financial institutions through customer consent, and developing licensing frameworks and standards for new business models that do not currently fit within existing frameworks. This may also include the use of regulatory sandboxes, which provide a limited and controlled environment to assess these new solutions and better understand their regulatory implications.

²³ To elaborate, domestic banks are a large holder of sovereign debt, and a deterioration in investor sentiment about public debt may increase sovereign risk premia and depress the value of banks' sovereign exposure. Conversely, distress in the banking sector may result in rising funding costs for government. Another two channels of the so-called "nexus" are the safety net and macroeconomic channels. See South African Reserve Bank, *Financial Stability Focus*, December 2020.

15. What policy actions could further enhance the depth and diversity of the financial system and thus improve the efficient allocation of capital?

South Africa enjoys an efficient financial intermediation system due to the combination of a strong regulatory environment, a healthy banking sector, well developed capital markets, diverse financial products, robust risk management practices and a strong monetary policy framework. It is also making significant investments in fintech.

The regulatory environment is well developed and stable. Financial institutions are regulated by bodies including the SARB and the Financial Sector Conduct Authority (FSCA). These institutions also aid in maintaining transparency and trust in the financial system. South Africa's monetary policy conduct has also maintained a degree of stability attractive to investors and lenders, which has contributed to the efficient allocation of capital and resources.

The banking sector is robust, with a mix of domestic and international banks contributing to efficient financial intermediation. The stock market benefits from well developed exchanges such as the JSE, which provide platforms for companies to raise capital by issuing shares and bonds. South Africa's financial sector offers a diverse range of financial products and services catering to the needs of both individuals and businesses. These include insurance, pension funds, asset management and more, ensuring that various financial needs are met. Effective risk management practices (ie risk-based approaches) within financial institutions help identify and mitigate risks, ensuring the soundness of the system. Investment in fintech is making it easier for people to access financial services, expanding inclusion and improving the efficiency of financial intermediation.

The changing nature of the financial system: implications for resilience and long-term growth in EMEs

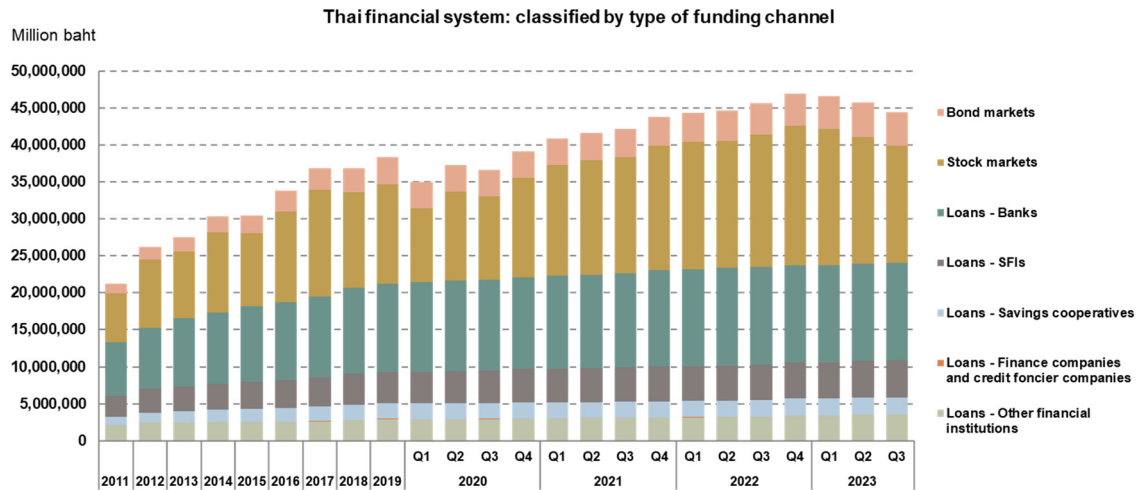
Bank of Thailand

EME financial system: what has changed?

For the past decade, the main source of funds for the private sector was loans, which as of the third quarter of 2023 comprised approximately 54.0% of total funding, about 29.5% of which was from banks and 11.3% was from specialized financial institutions (SFIs). However, **the role of capital markets as financial intermediaries gradually became more important over time due to cheaper financing costs and less stringent conditions required to obtain funding compared with loans.** Capital markets comprised the rest of the funding (apart from loans), or 46.0% of total funds, 35.6% of which was from stock markets and 10.4% was from bond markets as of the third quarter of 2023. In addition, capital markets were very much domestic-based: 28.1% of total market capitalization of stock markets and only 0.3% of total outstanding corporate bonds were held by non-residents as of the third quarter of 2023.

However, the growth of capital markets was disrupted during the Covid-19 pandemic due to the low level of investor confidence. Hence, corporates switched to traditional lending channels such as banks to raise funds. Bank loans also increased during the pandemic with special measures, such as soft loans and rehabilitation credit schemes, implemented to provide liquidity to the most affected, notably small and medium-sized enterprises (SMEs). The total contract amount of rehabilitation loans stood at 255.8 billion baht as of November 2023.

After the pandemic, investors' confidence in capital markets was restored. Corporates then switched back to raising funds through bond markets, as can be seen by the strong annual growth rate of new bond issuance at 32.0% on average from 2020 to 2022. This was due to corporates trying to lock in lower funding costs during the higher interest rate environment.



Source: Bank of Thailand

For the retail portfolio, SFIs shifted from extending personal loans to mortgage loans. The portion of personal loans in SFIs' portfolios declined to 13.0% as of the third quarter of 2023 from 33.5% in 2013. At the same time, the proportion of mortgage loans increased to 34.6% as of the third quarter of 2023 from 28.4% in 2013. This changing pattern could be attributed to the government's "One Million Home" program, which provided mortgage loans through SFIs to low-income debtors. In addition, non-bank financial institutions also entered the personal loan market, resulting in fewer SFIs on this front. **Non-banks are taking on a bigger role in the Thai financial landscape at present with an increase in both the amount of credit extended and number of players.** Loans extended by non-banks grew approximately 3.4 times from 2013 to the third quarter of 2023, and the number of players increased from 28 in 2013 to 111 by the third quarter of 2023. This spectacular growth could be attributed to non-banks' growth strategy, which concentrated on unserved and underserved customers – the majority of which are low-income debtors.

The allocation of finance and long-term growth

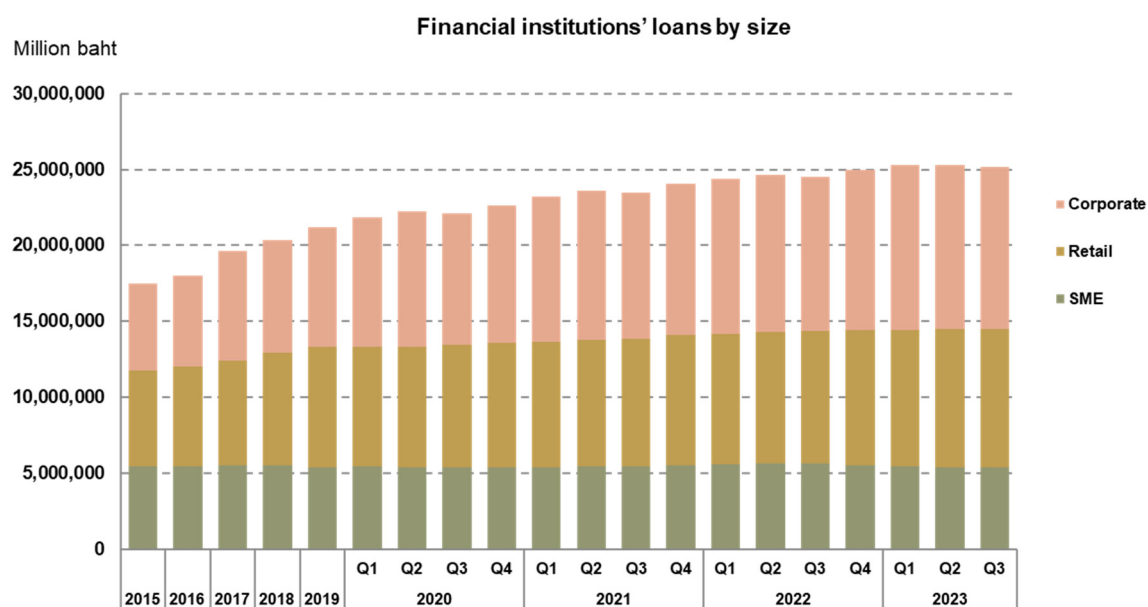
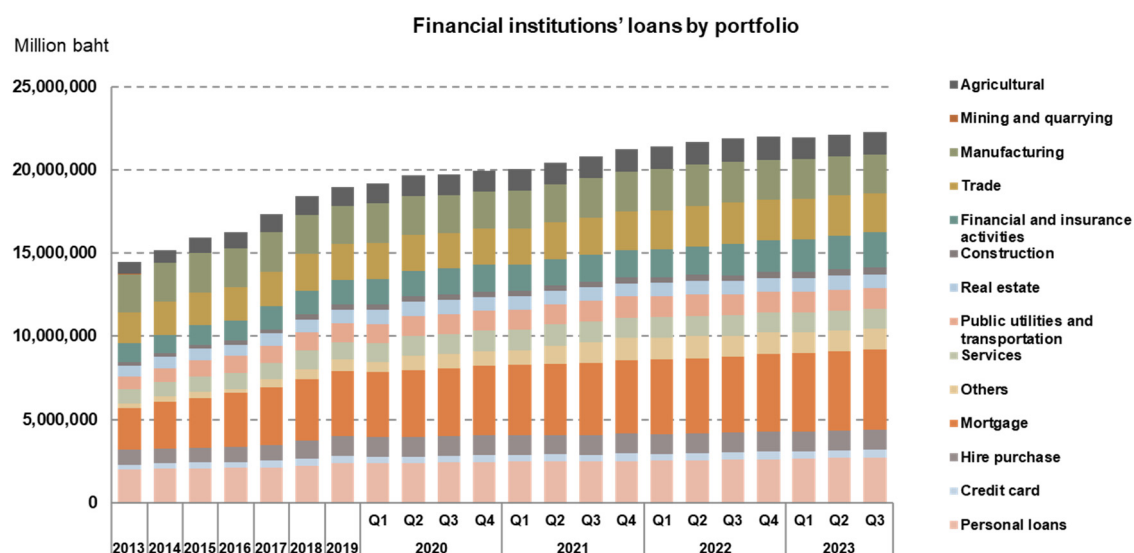
Structurally, approximately 60.0% of credit goes to the key business sectors driving economic growth, such as manufacturing and trade (which account for almost half of the 60%). However, over the past decade, credit extended to these sectors declined from 28.5% of total outstanding loans in 2013 to 21.0% as of the third quarter of 2023. Part of the funding was allocated to the agricultural sector where SFIs served as the main creditors. This is because banks deem this sector too risky to extend credit to due to its volatile cash flow and SFIs' mandate is to respond to government policies to support debtors who are unable to access a source of funds. The rest of the funding goes to the public utilities, transportation and services sectors.

Loans to SMEs gradually declined because SMEs posed higher risks compared with large corporates and had a slower pace of recovery after the pandemic. SME loans declined to 21.3% as of the third quarter of 2023 from 31.4% in 2015, and the non-performing loan (NPL) ratio of SME loans of commercial banks stood at 5.9% on average, which was higher than the NPL ratio of corporate loans (1.4% on average from 2015 to the third quarter of 2023). Furthermore, the share of zombie firms in micro companies and SMEs was 18.5% and 7.7%, respectively, as of 2022 (Siam Commercial Bank Economic Intelligence Center), compared with the share of zombie medium and large firms, at less than 5%. Hence, creditors became cautious when it came to granting loans to SMEs. However, with SMEs contributing to over 35% of gross domestic product (GDP) and employment from SMEs contributing to 71% of total employment as of 2022, further development is under way to ensure that sufficient funds from conventional channels, such as bank loans and financial markets, are available to these borrowers to promote long-term growth and employment in the Thai economy.

Digital innovation is playing an increasingly important role in reducing credit constraints and the use of informal lending channels for SMEs. Since 2020, the Bank of Thailand (BOT) introduced the new digital personal loan as a way to help SMEs gain more access to credit. It allows lenders to use alternative data, such as utility and mobile phone bill payment records and spending behaviours on e-commerce platforms, to assess the ability and willingness of borrowers to make payments. This has paved the way for service providers to leverage machine learning to help serve retail and SME customers by consolidating and expanding various types of data sources to assess the creditworthiness of SMEs as well as to automate the underwriting process for SME loans.

Among other things, in 2023, BOT also launched the PromptBiz system, which is a unified infrastructure for trade and payment data with the ISO 20022 international message standard. The aim of the system is to overcome the well-known problem of excessive paperwork, which usually leads to time-consuming follow-up and document review as well as possible errors and eventually higher costs. PromptBiz will help increase efficiency and reduce these costs. Trade transactions such as invoice disclosure and e-Tax invoice issuance will be linked to payments, which contain trade information, and will connect to the e-Receipt service. In the next phase, development will focus on building a mechanism to support business lending, particularly to SMEs, by utilizing trade and payment data.

BOT is also exploring ways to better utilize data and data-sharing mechanisms among service providers. The open data initiative aims to give data owners the ability to easily transfer their own data from one service provider to another at reasonable costs, with no barriers to choosing or switching their service providers. A successful open data scheme requires developing data exchange mechanisms under specified consent from customers. It also requires setting standards for application programming interfaces (APIs), data collection and security regarding the transfer of data between service providers. BOT plans to implement the open data initiative gradually. Once the specified target is achieved, BOT may consider expanding the scope of open data to include non-financial providers as well as a wider range of data types.



Note: Financial institutions include banks, specialized financial institutions (SFIs) and non-banks

Source: Bank of Thailand

Excessive finance, resilience and long-run growth

The Thai financial system is becoming more resilient with increasing numbers and types of service providers supplying credit and supporting growth to all

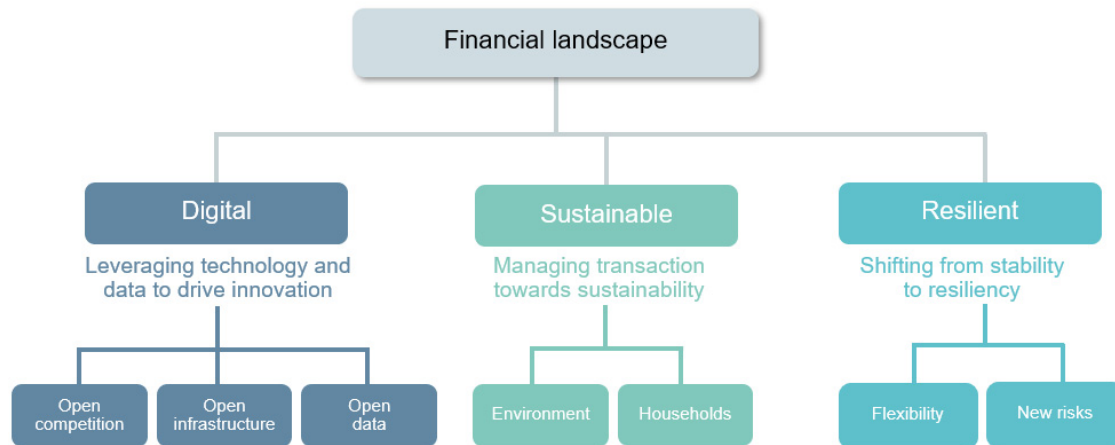
segments in the economy. New players such as non-banks and a new type of loan such as the digital personal loan create more diversification of creditors. This prevents disintermediation and provides a cushion for the impact of shocks by containing them to only a certain part of the system. However, having many players in the system poses some challenges such as having well-balanced supervision as well as a level playing field. BOT is in the process of developing a standard to deal with such challenges.

The challenge for long-term growth for Thailand is household debt overhang. During the Covid-19 pandemic, the ratio of household debt to GDP peaked at 95.5% in the first quarter of 2021 then gradually declined in line with economic recovery to 90.7% as of the second quarter of 2023. This excessive credit could cause a drag in consumption, investment and ultimately long-term growth. In response to this problem, BOT planned to implement new household debt measures that are more targeted and offer a more sustainable solution to this debt overhang problem. These measures would offer new solutions for debtors throughout their debt journey by (1) providing debt solutions for NPLs, (2) offering options for debtors with persistent debts to fully repay their loans, (3) ensuring new debt is of good credit quality and will not undergo debt distress in the future, and (4) increasing opportunities for borrowers with informal debt to obtain credit from formal channels.

Policy measures

In the period ahead, we see three key forces shaping Thailand's economy and financial sector. These forces are technological advancement, a movement towards more sustainability in response to climate change and addressing household debt overhang. In response to these factors, BOT set three strategic directions to facilitate a smooth transition of Thailand's financial sector towards a sustainable and digital economy.

The first direction is to leverage technology and data to drive innovation. In addition to the digital personal loan, BOT is allowing both new and incumbent players to establish a virtual bank to foster competition in developing financial services, promote innovations that meet consumer needs, and improve access for retail and SME customers. Applications for virtual bank license are being accepted from 20 March 2024 to 19 September 2024. The introduction of virtual banks in Thailand is expected to promote open competition among players and to encourage players who possess expertise in technology, digital services and data analytics to offer financial services in a more efficient way through digital channels while saving costs by having a small number of staff and bank branches. This should result in better services that are tailor-made to each customer segment, particularly the unserved and underserved segments of retail and SME customers.



Source: Bank of Thailand

In addition to open competition, an ecosystem for responsible innovation requires an open data ecosystem for consumer empowerment – an efficient data-sharing mechanism that allows consumers to conveniently and securely request or send their information from one service provider to another, when requested and with consumers’ consent. This will empower consumers, as data owners, to fully utilize their own data kept by various service providers, ranging from financial service providers, social media, e-commerce platforms and telcos. In addition, service providers would be able to access key digital infrastructures at lower costs, making it easier for players to enter the market. We also need to ensure open access to key infrastructures for all types of players, thereby reducing the risk of a few players monopolizing key digital infrastructures.

Building reliable and safe digital infrastructures and ecosystems is not a one-man job. It requires all stakeholders to collaborate and turn policy visions into actions. We want to take a more collaborative approach to new technology by exploring new use cases with the industry under an appropriate risk framework (such as tokenisation, programmability and artificial intelligence). BOT currently has a regulatory sandbox, which allows testing of regulated activities that employ new technologies. We are planning to have an additional channel, the “New Sandbox”, which is more flexible, to support the testing of unregulated financial activities that apply new technologies for use cases that benefit customers (eg tokenisation that helps improve access to credit for SMEs and programmability that helps enhance the efficiency of payment services).

The second direction is to manage the transition towards sustainability by steering financial entities to incorporate environmental risk assessment into their business operations and to support the transition of businesses from environmentally unsustainable activities to more sustainable ones. This should be done without disrupting the economy while minimizing the unintended consequences and helping households or vulnerable groups such as SMEs to survive and adapt sustainably to the new global trends. One of the key policies is

promoting the development of a national green taxonomy in collaboration with relevant agencies. This taxonomy should be appropriate for Thailand and should be aligned with international standards. Furthermore, to facilitate households' transition towards digital finance and to help over-indebted households manage their debts sustainably, BOT has proposed the following key policies: promoting financial literacy and digital financial literacy, ensuring responsible retail lending practices that account for borrowers' repayment ability to prevent over-indebtedness, promoting holistic mechanisms for resolving debt so households can adjust and recover over the longer term without returning to insolvency, and promoting comprehensive data collection on household debt.

The last direction is to shift towards a more flexible regulatory framework that allows financial service providers to capitalize on the digital trends while ensuring their appropriate and timely responses to significant and emerging risks. Examples of key policies designed to provide greater flexibility for financial and banking supervision include applying a risk-proportionality approach to the supervision of increasingly diverse service providers as well as reviewing regulations that are currently limiting service providers' abilities to adapt, compete, innovate or serve customers better. Both incumbent and new players should compete on a level playing field to improve both the depth and breadth of the financial system with greater access and better services. The resulting financial innovations and services will better meet the needs of consumers and contribute to a more efficient allocation of capital overall. Another dimension of this direction is to enhance supervision and management of significant risks, including the risks from systematically important financial service providers in the new financial era. A couple of key approaches are applying activity-based supervision to major retail lenders to protect consumers and implementing macroprudential policies to cope with household debt overhang and to put unregulated non-bank retail lending under the same regulatory framework as commercial banks and non-bank retail lenders, which have already been regulated.

In summary, the financial system has seen various changes over the past decade, ranging from a shift in financial intermediation, an increase in the number of players, to a shift in sectoral allocation of credit. Going forward with the new challenges and the strategic directions that we set for a smooth transition towards a digital and sustainable economy, we expect to see the Thai financial sector leverage technology to offer better financial services and facilitate the smooth transition to a digital economy, and to help support transitions amid rapidly emerging digital and sustainability trends. Finally, financial intermediaries should continue to innovate, provide better financial services and manage key and emerging risks in a timely manner while keeping pace with the rapidly changing environment.

The changing role of state banks in Türkiye: an assessment of recent trends¹

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Central Bank of the Republic of Türkiye

Abstract

The challenging experiences in the past few years have changed the way individuals behave, markets operate and states govern. These changes are evident in fiscal policies as well as in the role state banks have in the financial sector. In this paper, we use rich data that include publicly available banking statistics and firm loan-level micro data sourced from the Central Bank of the Republic of Türkiye. We uncover four main trends in the Turkish banking sector. First, we find that the share of state banks providing firm loans has seen a consistent increase, exceeding 50% as of 2023. Second, in line with this rising share, the role of state banks in investment and export loans is also expanding. Third, state banks increasingly facilitate financial access for relatively credit-constrained firms based on observable characteristics. As such, compared with private banks, they (i) have a higher share of loans to small and medium-sized enterprises (SMEs), (ii) have a loan portfolio with less concentration on the largest firms, and (iii) are more likely to lend to first-time borrowers and firms with a single-bank relationship. Finally, we examine the relative asset quality and profitability of state banks in comparison to their private counterparts. We find that, despite their lower profitability, state banks demonstrate a comparable asset quality.

¹ The views expressed in this study are those of the authors and do not necessarily represent the official views of the Central Bank of the Republic of Türkiye.

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1. Introduction

Challenging times lead economic agents to reconsider their decision mechanisms and often change their market behaviour. In recent years, societies around the world have faced a variety of challenges, with the most impactful being the Covid-19 pandemic, which rapidly spread across the globe and caused a human tragedy. The global economy has suffered greatly as a result of the pandemic. During much of 2020, global demand weakened, the supply chain was disrupted, world trade shrank, thousands of firms closed, and global gross domestic product (GDP) contracted. In this environment, rising unemployment and inflation deteriorated income distributions. Two years after the onset of the pandemic, the war between Russia and Ukraine shook the world, which was still recovering from the tragedy and cost of the pandemic. The war led to a massive shock to the global economy, worsened supply conditions in food and energy markets, and led to a dramatic increase in global inflation, with higher pressure in neighbouring countries, including Türkiye. The war, combined with the pandemic, uncertainties in China and tight financial conditions worldwide, caused the world economy to lose momentum, and the GDP growth rate remained at 3.5% in 2022. The growth rate in emerging market and developing economies fell from 6.9% to 4.1% in 2022; and in advanced economies, it dropped from 5.6% to 2.6%.²

Despite the resilience of the public health infrastructure in the face of the pandemic, Türkiye was affected by the tragedy and felt its economic impact, contracting in the second quarter of 2020. While economic activity began to recover in the second half of that year, with partial normalization, annual GDP growth was 1.8% in 2020, significantly lower than the long-term average. Türkiye was also directly affected by the Russia–Ukraine war due to its strong trade links with both countries, and headline inflation increased dramatically, driven by escalating food and energy prices. In fact, these global shocks were preceded by domestic economic challenges faced in earlier years. Just a few years prior to the pandemic, Türkiye had experienced economic downturns in the third quarter of 2016 following the coup attempt and in the third and fourth quarters of 2018 following the August exchange rate shock. As a result, there were noticeable job losses in the quarters that followed. The overall employment level declined from 28.7 million in June 2018 to 28.1 million in June 2019. Accordingly, the unemployment rate increased from 10.7% to 13.7% in the same period. A slow recovery in 2019 led to a relatively limited annual GDP growth of 0.8%.

The difficult experiences of the last few years have altered the way people behave, markets operate and states govern. Although the pandemic was contained within a year or two, its global impact appears to have lasted much longer. Covid-19 and the Russia–Ukraine war revived protectionist policies in many countries, and self-sufficiency in strategic industries such as health, defence and transportation gained attention within policy circles. Countries re-evaluated their economic

² According to the International Monetary Fund (IMF) *World Economic Outlook*, advanced economies (41) include Andorra, Australia, Canada, Czech Republic, Denmark, euro area, Hong Kong SAR, Iceland, Israel, Japan, Korea, Macao SAR, New Zealand, Norway, Puerto Rico, San Marino, Singapore, Sweden, Switzerland, Taiwan Province of China, United Kingdom and United States. The group of emerging market and developing economies (155) comprises all those that are not classified as advanced economies.

(inter)dependence and sought to identify their vulnerabilities to disruptions in global value chains. Societies have also reconsidered the role of the state in the economy. The difficult circumstances raised societal expectations about the services that state entities should provide. This shift was first seen in state spending and the expansion of fiscal space. According to October 2023 data from the IMF *Fiscal Monitor*, government spending averaged 43.8% of GDP in advanced economies during the 2020–22 period as a result of large budget increases for education, healthcare and defence, as opposed to the 2017–19 period average of 38.5%. As for emerging market and developing economies, the average was 32.8% in the 2020–22 period compared with the 2017–19 period average of 31.8%. Additionally, the role of state banks in the financial sector has accelerated over the past decade, and countries worldwide adopted them as a toolkit to mitigate unexpected and harsh economic shocks since the 2008 Great Financial Crisis (World Bank (2013), EBRD (2020)).

The role of the state in both the overall economy and the banking sector in Türkiye has undergone changes in the past few years. While private consumption and external demand aided the recovery from economic downturns, policy responses such as fiscal and monetary policy also played a role in these episodes. The Turkish government increased the use of expansionary policies and financial assistance instruments, such as the Credit Guarantee Fund, tax relief measures (foregone tax revenues), loan disbursements to firms and households, loan service deferrals and deferrals of tax and social security premiums. Consequently, the role and share of state banks have grown over the last decade. The state banks' share of the banking sector assets in Türkiye increased from 30% to 45.7% between 2010 and 2023.

In this paper, we examine extensively the changing nature of the banking system in Türkiye, with a particular focus on the role of state-owned banks. To that end, we use a rich data set, including publicly available banking statistics and micro data at the firm loan level sourced from the Central Bank of the Republic of Türkiye (CBRT). Banking statistics enable us to observe broad trends in the sector and the growing role of state banks, while loan-level data allow us to understand the client structures of state-owned banks in comparison to private banks.

We highlight four main trends in the Turkish banking sector, some of which appear to overlap with trends in other emerging economies. First, state banks have a greater share than private banks in firm loans, which represent the loans extended to non-financial businesses. Second, as the share of state banks in total firm loans grows, so does their role in investment and export loans. Third, state banks facilitate financial access for agents that are relatively less advantaged in observable characteristics. State banks (i) have a higher share in SME loans, (ii) are less likely to concentrate on the largest firms (top 10 percentiles), and (iii) are more likely to lend to first-time borrowers. Considering that these three findings might lead to a concern regarding the profitability and asset quality of state banks, we also examine the relative profitability of state banks compared to private banks, leading to our fourth finding: (iv) state banks have a lower profit margin than private banks, yet they do not exhibit a higher non-performing loan (NPL) ratio.

The rest of the paper is organized as follows: Section 2 discusses the rising role of the state banks around the world and in Türkiye. Section 3 analyses the compositional patterns of state bank loans in detail, with a particular focus on four major trends regarding the role of state banks. Section 4 concludes by discussing the

potential implications of the recent changes in the banking sector for long-term growth.

2. The increasing role of state banks: across the world and Türkiye

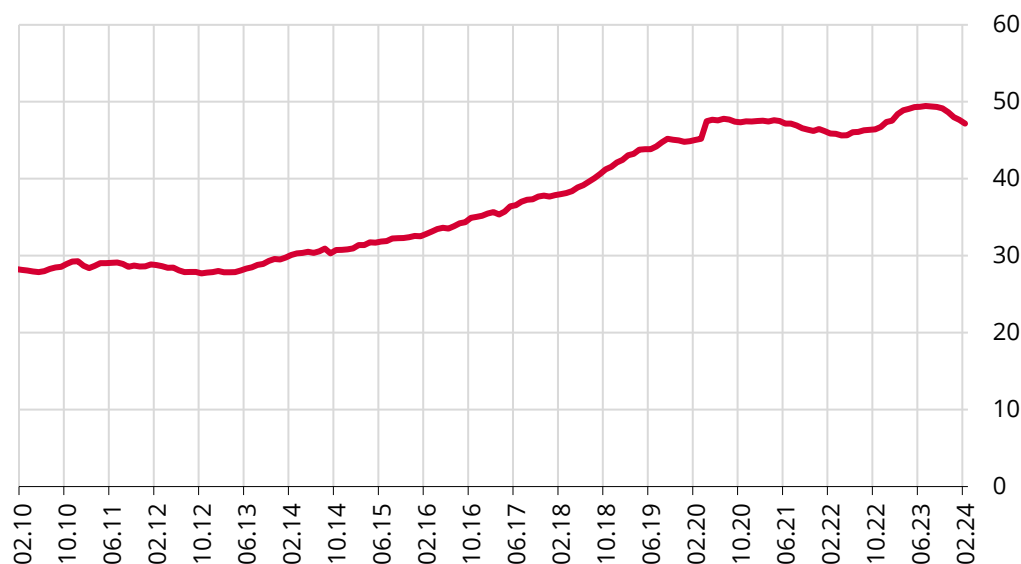
Parallel to the rising role of the state in national economies, the significance of state banks in financial sectors has been growing globally. In fact, state-owned banks had been increasing their share in the banking sector since the mid-2000s. The importance of state-owned banks heightened notably following the 2008 Great Financial Crisis, prompting countries across the world to adopt them to expand their toolkits in mitigating sudden and harsh economic shocks (World Bank (2013), EBRD (2020)). According to the most recent World Bank Regulation and Supervision Survey, which was released in 2019, the share of state-owned banks in the total assets of the banking sector, weighted by their respective GDP, increased from around 27% to around 33% across the European Bank for Reconstruction and Development (EBRD) member states between 2001 and 2016. By the end of 2016, compared with the average for the 2011–16 period, the share of state-owned banks in the national banking systems had risen in 58 out of 148 countries.³ According to more recent research, bank nationalization led to a surge in state ownership, encompassing both development and commercial banks, in the wake of the Great Financial Crisis (Panizza (2023)).⁴ Considering the most recent data from 2020, the author concludes that state-ownership of banks tends to be more prevalent in developing economies, with a similar ratio of state-owned banking assets in both middle-income and low-income economies.⁵

Türkiye is among the major developing countries where state banks play an extensive role in the financial system. As of 2010, state banks held a 33% share in the total assets of the banking sector, and this share increased to 45% by 2023. Similarly, since 2010, the state-owned banks have continuously increased their share in the total loan volume of Türkiye's banking sector. In 2010, state-owned banks held less than 30% of aggregate loans in Türkiye, and this share increased moderately until 2016, reaching 33%. Since 2016, state-owned banks' share has accelerated in the loan market, and prior to the pandemic, it reached 45% in 2020. The pandemic further boosted the role of state banks, with their share in the loan market hovering around 50% as of February 2024 (Graph 1).

³ During the same period, the share of state-owned banks in national banking systems had increased from 40.2% to 43.7% for Argentina, from 42.7% to 46.7% for Brazil, from 4.3% to 9.8% for Hungary, and from 36.4% to 39.6% for Indonesia.

⁴ Panizza (2023) builds and describes a data set on bank ownership covering more than 6,500 banks in 181 countries (50 high-income economies, 72 middle-income economies and 59 low-income economies) over the 1995–2020 period, mainly based on Fitch Connect data.

⁵ Regarding the regional dispersion, it was found that among emerging and developing regions, state-ownership was particularly large in South Asia (47%) and in East Asia and the Pacific region (29%), while it was relatively low in Sub-Saharan Africa, Latin America and the Caribbean.



Note: Shares are with respect to the whole banking sector. Latest observation: 02.24.

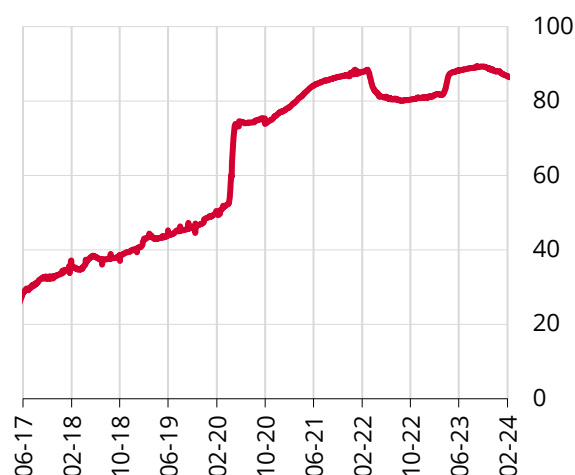
Source: BRSA.

Two factors stand out as the drivers of the rise in the role of state banks in recent years. First, the Turkish government intensified the use of certain financial support instruments in the period between 2016 and 2023. The Ministry of Treasury and Finance introduced a substantial Credit Guarantee Fund (CGF) in 2017 to stimulate the economy after the 2016 coup attempt and the ensuing macroeconomic instabilities. The aim was to provide guarantees for firms, mostly SMEs, facing collateral issues and to induce banks to ease credit conditions for these firms.⁶ In the initial phase of the subsidized loan program, private banks seemed to be more active in intermediating these loans, with the share of CGF loans disbursed by private banks standing at 70% in 2017 (Graph 2). However, over time, the role of state banks significantly increased in facilitating government-backed loan packages.

After the start of the pandemic, the size of the fund saw another increase, rising from TRY 250 billion in 2019 (valued at USD 44.1 billion at the time) to TRY 500 billion in 2020 (valued at USD 71.3 billion). During the pandemic, the share of state-owned banks in government-backed loans exceeded 70%. In addition, subsidized loans reached around 20% of the entire firm loan portfolio of state banks (Graph 3). Since 2020, state-owned banks have emerged as the main player in government-subsidized loans, as private banks avoided these loans due to their low interest margins. Currently, almost 90% of CGF loans are intermediated by state banks (Graph 2).

⁶ The size of the fund was raised from TRY 20 billion in 2016 (USD 6.6 billion at the time) to TRY 250 billion in 2017 (USD 68.5 billion at the time), and the related guaranteed loan disbursements reached TRY 208.1 billion in 2017.

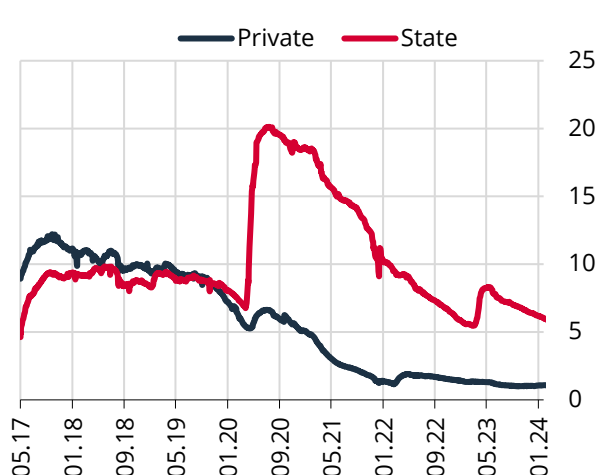
Graph 2:
Share of state banks in CGF loans (%)



Latest observation: 02.24.

Source: CBRT

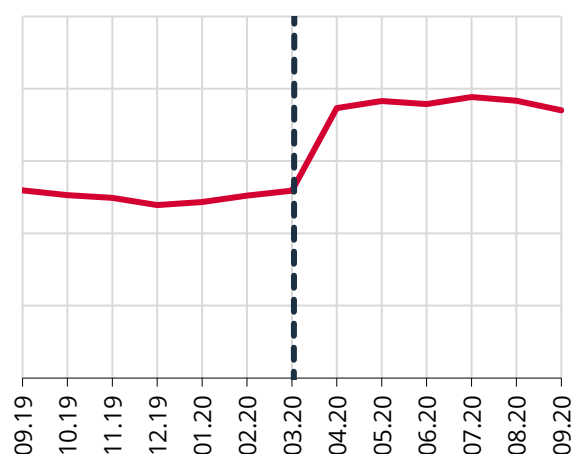
Graph 3:
Share of CGF loans in total firm loans (%)



The second and related factor contributing to the increased role of state banks has been the implementation of countercyclical policies in response to major shocks. The liquidity support provided during the pandemic played a pivotal role in the rising share of state-owned banks (Graph 4). A recent example of countercyclical lending by state-owned banks can be observed in the aftermath of the 2023 earthquake, where the share of state-owned banks in the earthquake-hit region rose sharply (Graph 5).

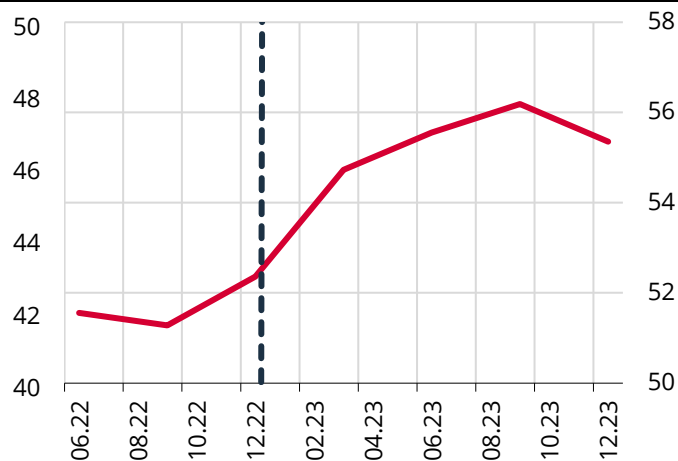
The shock-smoothing role of state banks in major episodes raises the question of whether these banks maintain this role during the usual uptrends or downtrends of the business cycle. The evidence suggests that lending by banks is, in general, procyclical. Due to their business models and institutional aspects, nonetheless, some banks may exhibit unique lending patterns (Bertay et al (2015), Aysan and Ozturk (2018), Çolak and Şenol (2021)). To analyse this question, we employ an empirical strategy to test the countercyclical nature of state banks in Türkiye using data from a longer period of time. We estimate a simple loan growth model to reveal the bank-level relationship between economic growth and bank lending. The regression results in Table 1 present how lending in the Turkish banking system responds to changes in GDP. The analysis differentiates the effects on personal and firm loans, under the assumption that firm loans have been a priority for policy support, whereas personal loans have often been curbed by macroprudential policies. We control for bank-specific indicators that represent liquidity, capital and profitability. The standard errors are clustered at the bank level, and bank and fixed effects are considered.

Graph 4:
Share of state-owned banks before and after
the start of the pandemic (%)



Latest observation: 09.20.

Graph 5:
Share of state-owned banks in the
earthquake-hit region (%)



Latest observation: 12.23.

Note: The earthquake-affected region incorporates 16 provinces, constituting around 20% of Türkiye's population. The dashed line in Graph 4 shows the official declaration of the start of the pandemic in Türkiye. Data in Graph 5 are quarterly. The dashed line shows the end of December, corresponding to the period before the earthquake. Shares show the share of state bank loans in all loans extended by the banking sector.

Source: BRSA.

Regression results for the lending cycle

Table 1

Loan type:	Total	Personal	Firm	Total	Personal	Firm
GDP_Growth	1.2518*** (5.139)	5.2038 (1.376)	1.0764*** (3.542)			
GDP_Growth#StateBank	-1.2995*** (-4.472)	-4.8785 (-1.350)	-1.4023*** (-3.152)	-1.1940*** (-4.276)	-5.0167 (-1.251)	-1.3098*** (-3.135)
Bank controls	Yes	Yes	Yes	Yes	Yes	Yes
Time fixed effects	Year	Year	Year	Quarter	Quarter	Quarter
Bank fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,067	1,067	911	1,067	1,067	911
Adjusted R-squared	0.312	0.122	0.230	0.526	0.109	0.521

Note: We estimate a loan growth equation. The dependent variable is the quarterly change of related loans, and explanatory variable is the quarterly change of GDP. StateBank is a dummy that takes the value of unity if a bank is a state-owned bank and is zero otherwise. Bank controls are Basel indicators representing liquidity, capital and profitability. Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

We infer cycles from the signs of coefficients of GDP growth and the interaction between GDP growth and state-owned bank variables. A positive/negative sign of the former coefficient would indicate that the banking system, as a whole, exhibits a procyclical/countercyclical lending pattern. Our main findings suggest that the

lending behaviour of Turkish banks during the period between the first quarter of 2002 and the second quarter of 2023 is procyclical, as the coefficient estimate for GDP growth is positive. This evidence is valid for all loan segments. However, state-owned banks exhibit a countercyclical nature, as the coefficient estimates for the interaction between GDP growth and state-owned banks are negative and larger in magnitude. In line with government policies aiming to support the production capacity of the economy, the interaction effect is negative and statistically significant for firm loans and total loans. Overall, these findings imply that state-owned banks play a role in smoothing the lending cycle for both firm loans and total loans. This aligns with the observed immediate jumps in the share of state bank lending after exogenous shocks like the pandemic and the earthquake, as presented in Graph 4 and Graph 5.

3. An analysis of state bank loan composition in Türkiye

Given this rise in the role of state-owned banks, it is important to understand whether and how they differ from privately owned banks in their lending patterns. To that end, we use a rich data set, including publicly available banking statistics from the Banking Regulation and Supervision Agency (BRSA) and firm-loan-level micro data sourced from the CBRT. The former data set enables us to observe the aggregate trends over the period spanning from 2010 to 2023, and the latter allows us to understand the compositional patterns within the bank groups for the period between 2017 and 2023.⁷ We identify several key trends that shed light on the changing role of state banks in the Turkish economy. We find that state-owned banks:

- have an increasing share in firm loans across all industries and a decreasing share in consumer loans
- have a rising share in export and investment loans
- facilitate financial access for firms that are relatively disadvantaged as these banks have:
 - a higher market share in SME loans
 - a less concentrated loan portfolio
 - a higher tendency to lend to first-time borrowers and financially constrained firms
- have a relatively better asset quality outlook and a lower profitability

3.1. The role of state banks in firm loans

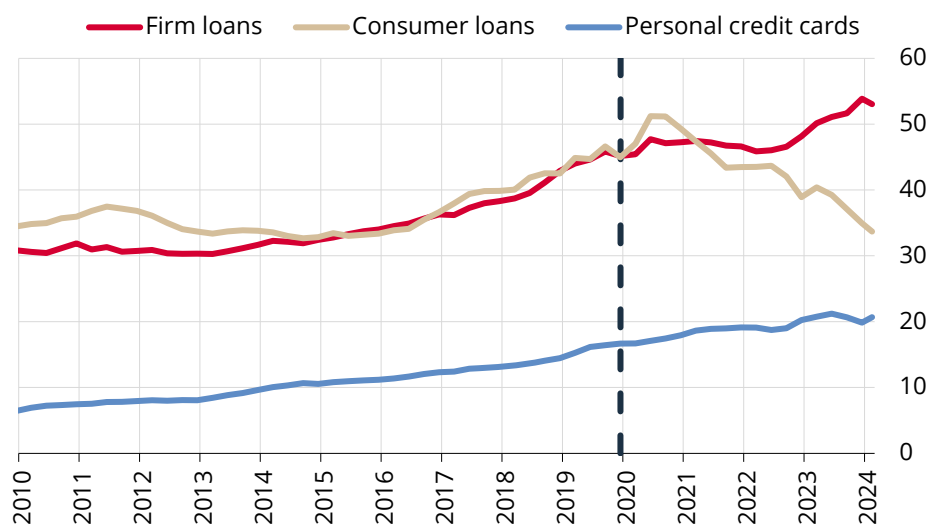
As mentioned above, the loan share of state-owned banks in Türkiye has substantially risen in the past decade. This increase was primarily driven by firm loans, as the state bank share in total firm loans approached 55% in 2023 (Graph 6). In contrast, although

⁷ The micro data consist of 168 million firm-month-level observations. Firms are categorized as having borrowed from either of the two bank groups (ie state or private) or both. For the examined period, there are more than 50 banks in the data set, nine of which are defined as state banks. Among these nine state banks, three are deposit, three are participation and three are development and investment banks. The remaining banks are defined as private banks.

the share of state banks in consumer loans was higher than that of private banks at the outbreak of pandemic, they have gradually lost market share since then. As of August 2023, the state-owned banks' share in consumer loans fell below 40%. In case of loans used through personal credit cards, while state-owned banks have increased their share over the recent decade, it remains limited, hovering around 20%.

Share of state-owned banks in firm and consumer loans (%)

Graph 6



Latest observation: 02.24.

Note: Consumer loans consist of housing, vehicle and general-purpose loans. General-purpose loans are unsecured consumer loans. The dashed line shows the official declaration of the start of the pandemic in Türkiye. All shares are with respect to the total volume of that loan type in the banking sector.

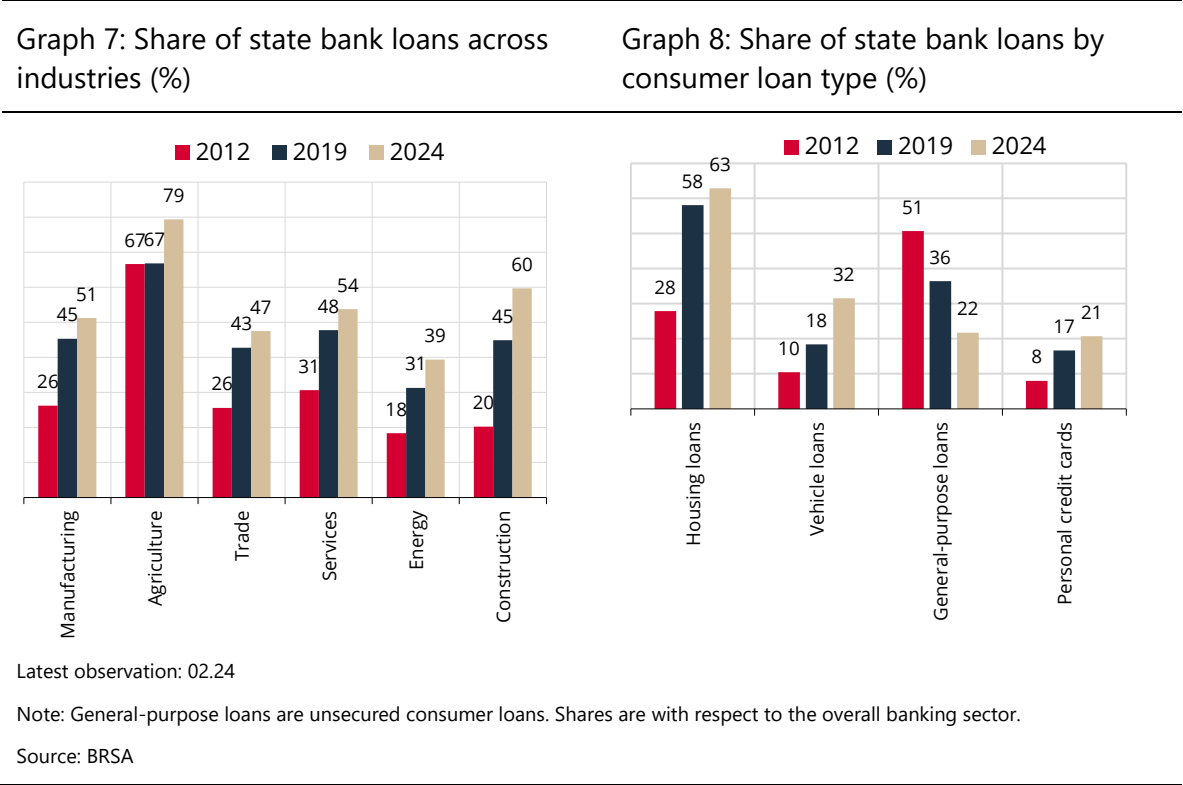
Source: BRSA

The sectoral breakdown of loans suggests that the share of state banks, which ranged between 18% and 31% across sectors (excluding agriculture) in 2012, increased to over 50% in all sectors except energy by 2023 (Graph 7). Notably, the share of state banks in agricultural loans has historically been high, given the explicit role of the largest state bank in supporting the agriculture sector. This share has further increased to over 80% in 2023. In the energy sector, the share of state banks has remained relatively low, partially due to the effect of exchange rate movements, since energy sector loans in private banks' portfolios are mainly denominated in foreign currency.

When compared throughout the years, the highest increase in state banks' share is observed in the manufacturing and construction sectors. This share increased from 26% in 2012 to 55% in 2023. The manufacturing industry constitutes a significant share of the value-added in the overall economy and accounts for the majority of Türkiye's exports. Thus, the state banks' rising loan share reflects an intention to contribute to growth and current account dynamics. In addition, the centrality of the construction sector in terms of its spillover effects to various industries (such as cement, wood, plastic, furniture, chemical, housing, services, etc) led state banks to further provide financing to the construction sector. Accordingly, the share of state

banks in construction sector loans increased from 20% to 59% during the same period.

Graph 8 shows that the share of state banks in housing loans has risen in accordance with the growing share of construction sector loans. Although the share of state banks in the overall consumer loans has decreased, the share in housing loans has been on the rise, increasing from 28% in 2012 to 66% in 2023.



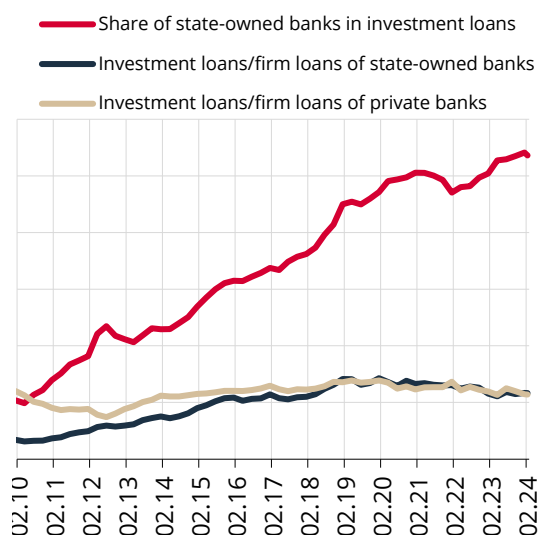
3.2. The role of state banks in investment and export loans

The rising role of state-owned banks in the credit market is also visible in their extension of investment and export loans. Graph 9 and Graph 10 show that the share of state-owned banks in these loan segments has increased significantly over the last decade. Between 2010 and 2023, the shares of state banks in investment loans and export loans increased from 10% to over 50% and from 25% to 43%, respectively. Nevertheless, within the firm loans of state banks, although a mild increase was observed in the share of investment loans since 2010, the share has been rather stagnant in recent years. Therefore, state banks’ consistently rising contribution to the overall investment loans of the banking sector might be best described as compensating for the fading role of private banks.

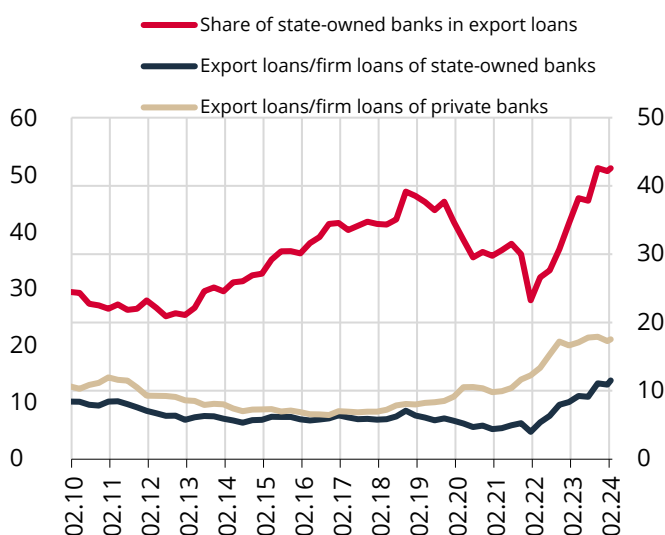
As for the share of state-owned banks in export loans, there was a rising trend between 2013 and 2019, following a stable period between 2010 and 2013. Their share declined later, as private banks began to allocate a greater share of their loans towards exporters, given that exporters tend to be large and profitable firms. However, since 2021, state banks’ share in the export loan market has once again

increased, due mainly to subsidized export loan packages and trade finance loans provided by the Turkish Eximbank.

Graph 9: Investment loans: state vs private banks (%)



Graph 10: Export loans: state vs private banks (%)



Latest observation: 02.24

Note: Private banks are all banks other than state-owned banks.

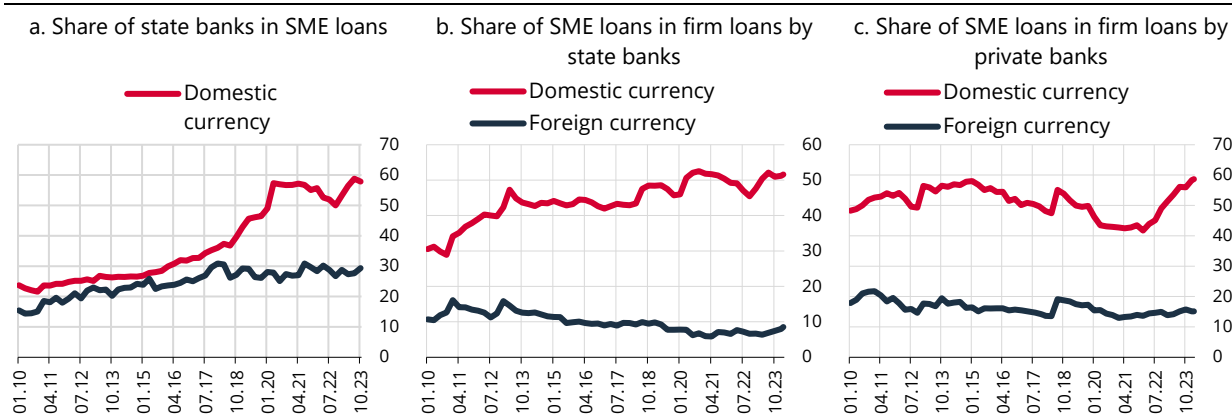
Source: BRSA

3.3 The role of state banks in access to finance

Graph 11 shows that the share of state banks in the overall SME loan stock has increased over the period between 2010 and 2023. Specifically, the share of state banks in domestic currency SME loans increased from 23% in 2010 to 59% in 2023, with most of this increase occurring up to 2019. Accordingly, the share of private banks fell from 77% to 41% over the same period. It is worth noting that unlike typical crisis episodes where banks have historically reduced their exposure to SMEs due to credit risk concerns, state banks continued to allocate a significant portion of their credit lines to them during the pandemic. As for private banks, the recent increase in the share of SME loans in their overall firm credits was mainly triggered by the macroprudential policies that also encouraged lending to SMEs after the second quarter of 2022 (Graph 11, panel c).

Share of SME loans in state-owned banks by currency (%)

Graph 11



Latest observation: 02.24

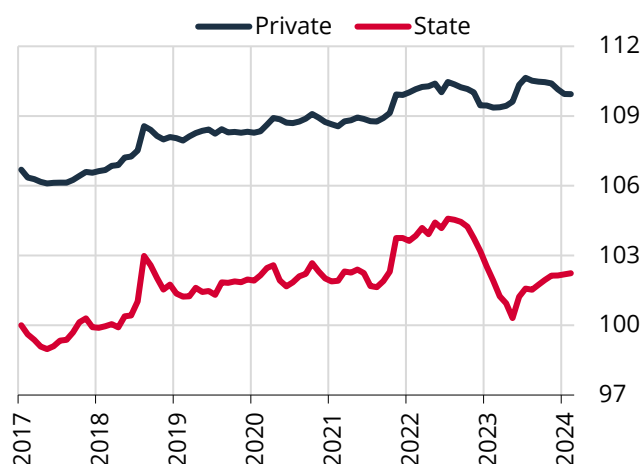
Note: Private banks are all banks other than state-owned banks. Shares are with respect to the overall banking sector.

Source: BRSA

State banks' inclusive loan policies for SMEs may also be reflected in the concentration of the firm loan portfolios. To analyse this, we exploit the loan-level data for the period between 2017 and 2023, which enables us to observe the monthly bank-firm loan stock. Specifically, we derive the evolution of the index showing the share of the top decile of firms in total firm loans for both banking groups during the sample period (Graph 12). The graph shows that state banks have a less concentrated loan portfolio throughout the period. The loan allocation has become even less concentrated after the implementation of macroprudential policies and loan programmes that incentivised lending to SMEs.⁸

⁸ Diversification of loans raises another important question about whether SME loans are well distributed over the size of SMEs. When SMEs are classified as micro, small and medium, we observe comparable shares within these three segments. As of September 2023, the shares of micro, small and medium-sized enterprises in total SME loans were roughly 37%, 31% and 32%, respectively. These figures have been almost flat within the course of last decade, as the average shares for micro, small and medium-sized enterprises are roughly 38%, 31% and 32%, respectively.

Graph 12: Loan concentration: share of the top decile of firms (index, 2017 = 100)

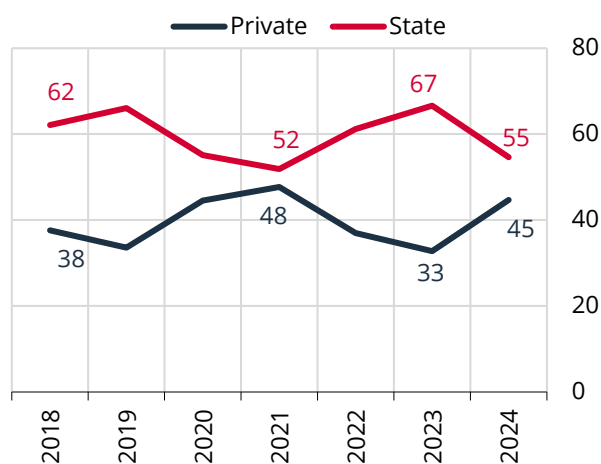


Note: For each bank group, firms with loan balances greater than zero for the corresponding month are considered in the percentile calculations. The share of the top decile of firms shows the total of the loan balance of the top decile firms in the total firm loan portfolio of the bank group. January 2017 is taken as the base period for state banks and indexed to 100.

Source: CBRT

Latest observation: 02.24

Graph 13: Access to finance: first bank loan (number of firms) (%)



Note: The calculations are based on the firm set that does not have any loan balance in 2017 and has accessed finance during 2018–23. The graph shows the share of the number of firms obtaining their initial access to finance in the given year. Standard (stage 1) loans are included.

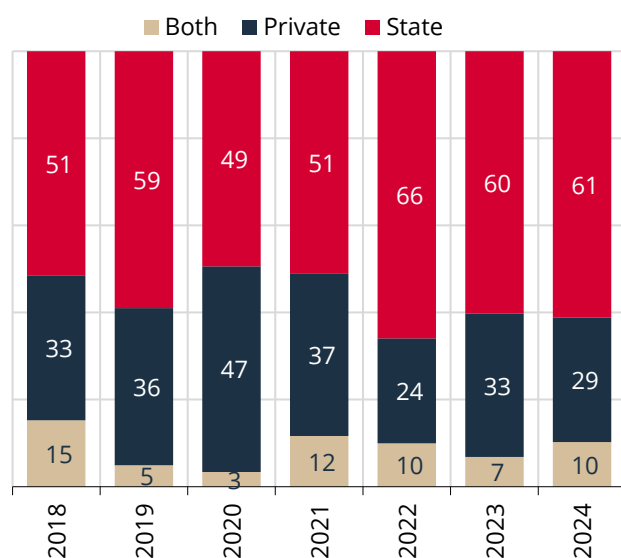
Source: CBRT

Latest observation: 02.24

As proxies for credit-constrained firms, we further look at two measures: (i) allocation to firms that accessed bank loans for the first time and (ii) allocation to firms that have a single-bank relationship. An analysis of the banking groups financing first-time loan users between 2018 and 2023 demonstrates that state banks lend more to first-time borrowers, both in terms of the number of firms and the amount of loans (Graph 13 and Graph 14). With regard to the number of first-time borrowers, while the share of the state banks was slightly higher than that of the private banks in 2021, by 2023, state banks had widened the gap with a significant majority of 67%.⁹ When evaluated in terms of the loan amount share, the gap between state banks and private banks widened further in 2022, standing at 66% versus 34%. Following 2022, the state banks' share dropped, though it is still hovering above 60% as of 2024.

⁹ Since the ratio of the firms financed by both bank groups was negligible (1%), it is not shown in the graphs.

Graph 14: Access to finance: first bank loan (loan amount) (%)

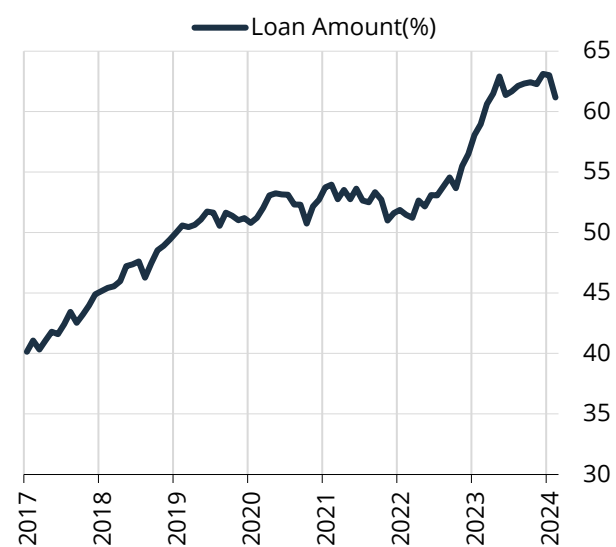


Note: The calculations are based on the firm set that does not have any loan balance in 2017 and has accessed finance during 2018–24. The graph shows the first access to finance. Standard (stage 1) loans are included.

Source: CBRT

Latest observation: 02.24

Graph 15: Measure of credit constraint: state banks' share in loans of single-bank borrowers (%)



Note: Among the firms lent to by a single bank in the corresponding month, the graph shows the percentage of the amount lent by the state banks. Only performing loans are considered.

Source: CBRT

Latest observation: 02.24

As a second proxy for credit-constrained firms, we analyse firms with a single bank relationship, excluding from the sample those with multiple bank relationships. When examining the share of state banks in loans to firms with a single-bank relationship, we find a larger and rising role for state banks (Graph 15). The graph shows that state-owned banks hold a significant majority share in loans to firms with a single-bank relationship. In the same period, the loan amount among firms with a single-bank relationship with state banks has been increasing. As of September 2023, the loan balance for single-bank firms that borrowed from state banks corresponded to more than 60% of the respective balance.

3.4. Implications on asset quality and profitability

Up to this section, we have presented the rising role of state banks in the banking sector and their changing loan portfolio. A natural concern that might arise here is whether state-owned banks have more risky loan portfolios, as they appear to have a higher tendency to offer credit lines to financially constrained firms. To address this question, we take a closer look at the loan portfolio of state banks and compare the credit risk with that of private banks.¹⁰ For this analysis, we combine our bank firm-

¹⁰ Sümer and Şahan (2023) examine the divergence of NPL ratios and stage 2 (close monitoring) loan ratios by comparing the loan portfolios of state banks and other banks for three data points:

level loan data with micro-level balance sheet data. Specifically, we match loan data with detailed annual data of financial indicators derived from balance sheets of firms to explore the asset quality of firms in state and private banks' portfolios.¹¹ Using firm-level monthly loan data, we distinguish between firms based on the loan balance they have with each bank and classify firms in one of the three portfolio groups: (i) firms working with state banks only, (ii) firms working with private banks only, and (iii) firms working with both state and private banks. Based on this categorization, we investigate whether there is any significant divergence among these portfolio groups with regard to credit risk and financial performance. This analysis enables us to observe whether the inclusive loan allocation policies of state banks lead to greater asset riskiness.

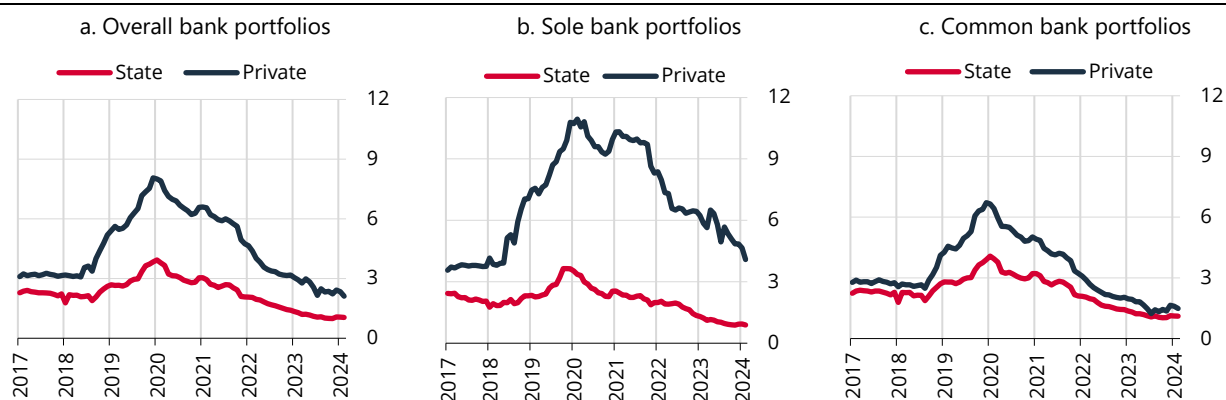
With regard to asset quality indicators such as non-performing and close monitoring loans, overall state banks seem to perform better than private banks (Graph 16 and Graph 17). Graph 16 below depicts the evolution of NPL ratios for state and private banks based on their overall portfolios (panel a) as well as firms that have a loan from only one type of bank (panel b) and firms that have a loan from both bank types (panel c). An assessment of the overall portfolio of banking groups clearly indicates that the NPL ratio of state banks is lower than that of private banks. While these ratios were similar until the third quarter of 2018, when a sharp depreciation occurred in the Turkish lira, they started to diverge mainly due to the larger foreign exchange (FX) loan portfolio of private banks. As of February 2024, the NPL ratios have started to converge again, reflecting an overall improvement in the asset quality of the financial sector.

December 2017, December 2019 and August 2022. The study shows that the differences in the loan portfolios of the banks are effective in the divergence of NPL ratios and stage 2 loans.

¹¹ The balance sheet data are provided by the Revenue Administration and cover 5.8 million firm-level observations over the 2017–22 period.

NPL ratio by portfolio type (%)

Graph 16



Note: The ratio of non-performing loans is defined as the ratio of stage 3 loans to the sum of stage 1, stage 2 and stage 3 loans. Panel (b) shows the aforementioned ratio among firms only in the portfolio of either state banks or private banks for the corresponding month. Panel (c) shows the ratio among the firms that exist in the portfolio of both the state and the private banks. For panel (c), only the loans classified in stage 3 by both bank groups are included in the calculations.

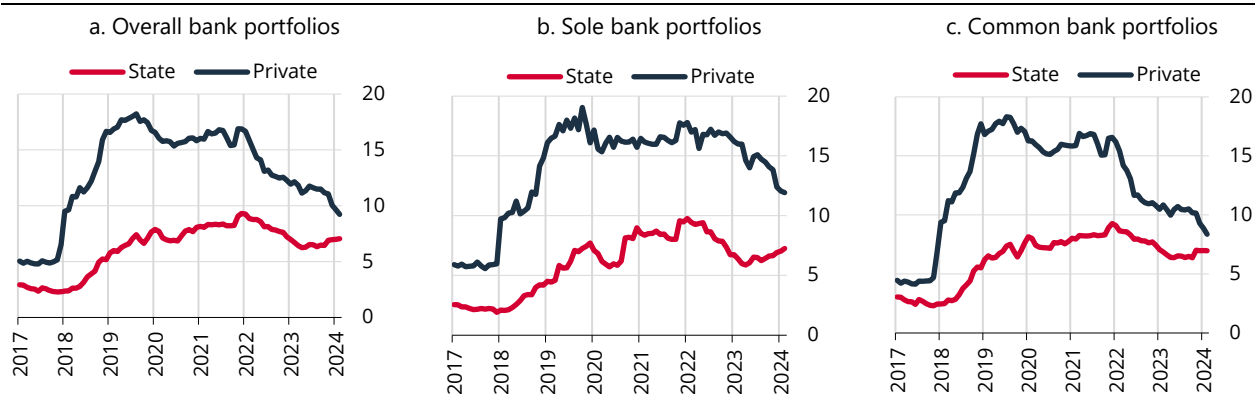
Source: CBRT

Latest observation: 02.24

A similar analysis is applied to close monitoring loan ratios within different bank portfolios. Graph 17 illustrates the development of close monitoring loans for state banks and private banks based on the three categories. The graph suggests that the ratio of closely monitored loans in state banks is lower than that in private banks over the whole period. Data on both NPL and closely monitored loans suggest that the state bank portfolios exhibit limited risk, despite their growing share in SME loans, tendency to provide access to credit, and countercyclical lending behaviour.

NPL ratio by portfolio type (%)

Graph 17



Note: "Closely monitored loans" is defined as the ratio of stage 2 loans to the sum of stage 1, stage 2 and stage 3 loans. Panel (b) shows the aforementioned ratio among firms only in the portfolio of either state banks or private banks for the corresponding month. Panel (c) shows the ratio among the firms that exist in the portfolio of both the state and the private banks. For panel (c), only the loans classified in stage 2 by both bank groups are included in the calculations.

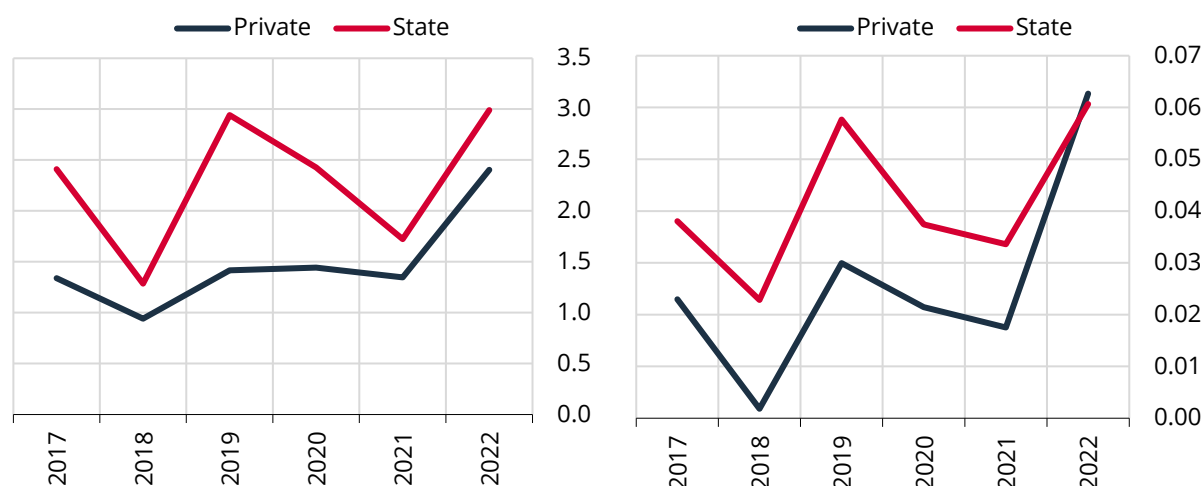
Source: BRSA

Latest Observation: 02.24

As final indicators of loan riskiness, we examine two financial performance indicators of firms falling into one of the three categories. We first analyse the financial expenses coverage ratio (FECR), which measures firms' capacity to repay their financial expenses with their operating income (EBITDA, or earnings before interest, taxes, depreciation and amortization), and find that firms solely in state banks' portfolios have a higher FECR throughout the period from 2017 to 2022 (Graph 18). As of 2022, while firms in state banks' portfolios can cover their interest expenses for 2.99 years with their annual operating income, the corresponding length of time for firms in the private banks' portfolios is 2.40 years. Second, we examine the ratio of net profits to assets and discover that firms borrowing from state banks have higher profitability (Graph 19). It is evident that profit ratios in both groups escalated following the expansionary policies implemented during the pandemic.

Graph 18: Financial expenses coverage ratio (FECR) (ratio)

Graph 19: Net profit/assets ratio (ratio)



Note: The financial expenses coverage ratio (FECR) is defined as the ratio of EBITDA to financial expenses. Calculations cover the performing loans only in private banks' portfolios or state banks' portfolios. Firms in the joint (common) portfolios are excluded.

Source: CBRT, Turkstat

Latest observation: 2022

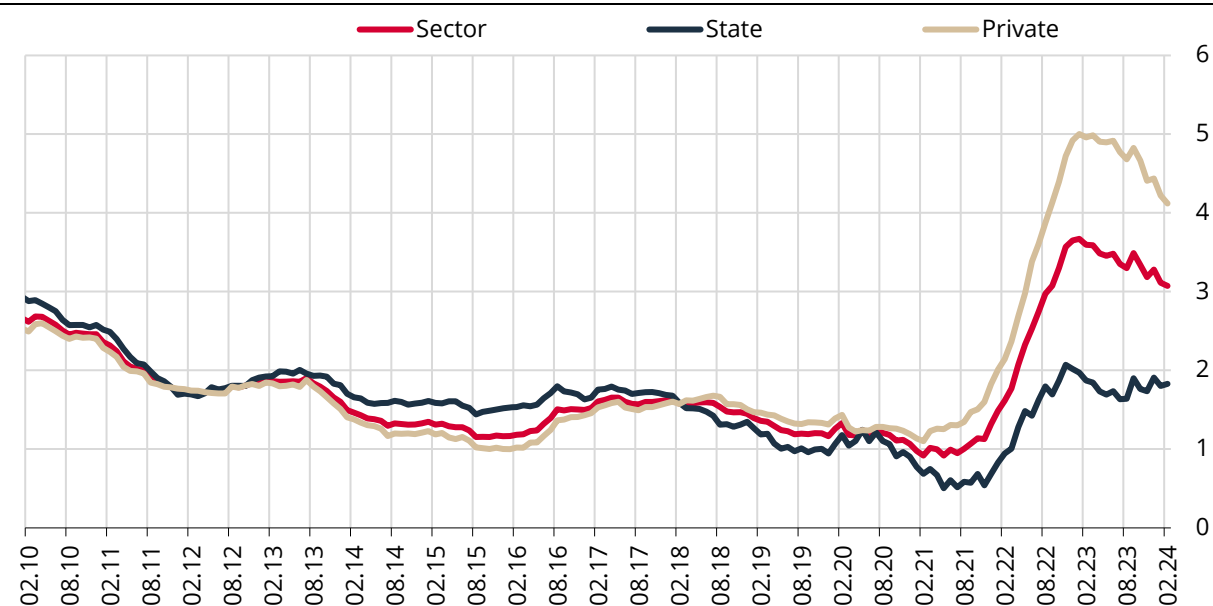
Source: CBRT, Turkstat

Latest observation: 2022

Finally, we investigate the implications of the rising role of state banks in the banking sector on their profitability. We observe that until the pandemic, state banks managed to obtain comparable returns with their private peers. However, after the pandemic, the return on assets (ROA) of state banks, while still positive, fell behind the rising ROA of private banks, as state banks continued to finance firms with favourable loans, despite the resulting lower profit margins (Graph 20).

Return on assets by bank types (%)

Graph 20



Note: Return on assets is the share of annual net profit/loss in the annual average of total assets. Private banks are all banks in the banking sector other than state-owned banks.

Source: BRSA

Latest observation: 02.24

4. Concluding remarks and implications for economic activity

In this study, we examine extensively the changing nature of the banking system in Türkiye as an emerging market economy, using rich data that include publicly available banking statistics and firm-loan-level micro data sourced from the Central Bank of the Republic of Türkiye. We highlight four major trends regarding the role of state-owned banks in the Turkish banking sector. We find that the share of state banks in firm loans has been increasing. We also uncover that the role of state banks in investment and export loans is expanding. In addition, state banks play an increasingly pivotal role in enhancing financial access for relatively credit-constrained firms, including SMEs, first-time borrowers and firms with a single-bank relationship. Finally, our findings reveal that, despite their lower profitability, state banks maintain a comparable asset quality. Below, we briefly discuss the potential implications of these trends for economic activity in Türkiye in light of previous literature.

Banks extend credit lines for export activities, investment purchases, raw material and intermediary input imports etc, in addition to basic firm credits. While the benefits of the financial system for economic growth have been well-established in the literature (eg Levine (2005)), recent research finds that the sectoral allocation of credit flows also matters for economic outcomes and long-term growth. Müller and Verner (2023), using a novel data set covering 117 countries since 1940, study the

relationship between credit expansions and macroeconomic outcomes and conclude that, contrary to non-tradable sectors, credit expansion to tradable sectors leads to sustained output and productivity growth.

The loan portfolio of Turkish state banks appears connected to their commitment to supporting overall economic policy and development objectives. The growing emphasis of state banks on *investment* and *export* financing in Türkiye seems to be a conscious strategy aimed at boosting productivity and promoting growth. Cross-country studies examining GDP growth consistently identify investments, and in particular technological investments, as an important determinant of growth and productivity (Sala-i-Martin et al (2004), Van Ark et al (2008), Lee and Kim (2009), Vedia and Jerez (2016)). Similarly, exports are widely recognized as drivers of economic growth, particularly in emerging economies, and the literature suggests that credit constraints often hamper export growth (Feder (1983), Manova (2013)).

Financing SMEs and other credit-constrained firms as well as the countercyclical lending practices of state banks are also consistent with the objectives of promoting growth and development. Empirical literature on financial access has demonstrated that borrowing constraints have a significant impact on firm performance, and the availability of banking loans has a crucial impact on employment, investment and growth outcomes (Fazzari et al (1988), Amiti and Weinstein (2011), Chodorow-Reich (2014)). There is also a substantial body of literature highlighting the role of SMEs in a country's firm dynamism and output levels. Stiglitz (2016) identifies the financial sector's failure to provide sufficient funds to SMEs as an issue for the US economy and calls for financial sector reform. Using a firm-level data set covering 54 countries, Beck et al (2005) find that smaller firms are more sensitive to structural problems in financial and legal systems because of their challenges in offering corporate collateral. Bahaj et al (2020) confirm that SMEs frequently lack corporate collateral for their investments and therefore pledge their private real estate as collateral to finance their ongoing businesses. It is also claimed that SMEs are more responsive to policy actions and cost incentives. Criscuolo et al (2019) investigate the causal effect of European industrial policy on employment outcomes and discover that areas eligible for higher subsidies experienced increased employment, with the impact driven by small businesses. Considering the findings of the literature, the emphasis of state banks on supporting SMEs and first-time borrowers has the potential to enhance financial access for disadvantaged businesses, thereby fostering firm dynamism.

On one hand, the state-owned banks' focus on export and investment loans, as well as access to credit, may yield positive effects on economic growth in Türkiye. On the other hand, the growing role of the state banks comes with potential risks in the allocation of resources. A body of literature emphasizes the adverse effects of centralized or state-owned financing, with the majority focusing on its impact on financial development. Dewatripont and Maskin (1995) investigate a credit model with adverse selection and argue that credit decentralization provides creditors with financial discipline but may lead to putting too much weight on short-term returns. Similarly, Panizza and Yanez (2007) examine the state ownership effect on bank profitability and find that state-owned banks in developing countries tend to have lower profitability than private banks. In addition, Sapienza (2004) finds that government ownership of banks has a distorting allocative impact on the financial sector.

Making a judgment on the long-term impact of the role of state banks in the financial sector is beyond the scope of this study. In light of the literature on determinants of economic growth, the focus of Turkish state banks on investment, exports and financial access may well contribute to long-term growth. On the other hand, the arguments and evidence pointing to the potential side effects of increased state ownership in the sector necessitate further research into the impact of state banks on financial development.

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The role of bank credit toward sustainable development in Vietnam

The State Bank of Vietnam

1. Overview

After almost four decades of “Doi Moi” policy execution, Vietnam has made great achievements in many fields. The economy has developed comprehensively in both scale and quality, and people’s lives have improved. In the financial system, the money market and credit institutions have played an important role promoting the system’s effectiveness as a channel for capital mobilization and supply for production and business activities. As a state management agency in the fields of money and banking, the State Bank of Vietnam (SBV) has implemented suitable policies to develop the money market in a proactive, flexible and appropriate manner, ensuring that credit institutions have liquidity to provide capital to the economy. This has ensured the safety of the national financial system. However, the unpredictable world economic context – the deep impact of the Covid-19 pandemic, geopolitical tensions, supply chain disruptions, tightening monetary policy by major central banks – as well as some difficulties in the domestic economy have had great influence on the money market and the SBV’s monetary policy management. Those challenges require the SBV to continue to improve its legal framework, including credit policies, to be flexible and proactive and to adapt to domestic and international developments. This will allow for smooth, safe and effective management of the market toward macroeconomic stability, inflation control, sufficient capital supply and safe operation of credit institutions.

2. The role of credit in economic growth in Vietnam

The financial system includes financial institutions (banks and non-banks), financial markets (capital market and money market) and economic institutions that govern their operations (legal framework, inspection and supervision mechanisms). In Vietnam, the financial system has been developing and gradually improving in all aspects. Financial institutions have been growing in scale and scope of operations, modernizing and gradually approaching international standards. In 2023, credit institutions in particular play a very important role, accounting for more than 93% of the total assets of all financial institutions. The size of the financial market has been increasing too. By the end of 2023, the size of bank credit had reached over 133% of gross domestic product (GDP) and that of stock market capitalization was at about 56.4% of GDP. The government, ministries and agencies have been continuously improving the legal system that regulates financial market operations by making laws, decrees and circulars to facilitate safer and more efficient operations for market

participants. Inspection and supervision mechanisms have also been strengthened to ensure the safe and sound operation of the financial system.

In addition to the structure of the financial market, the role of bank credit and the money market is extremely important. When the capital market remains underdeveloped and immature, the economy's capital requirements, especially medium- and long-term capital, are met through bank credit. Between 2007 and 2010, the average growth rate of credit in the banking system was 36% per annum. Particularly, in 2007, it reached 53.8% to meet capital needs for economic development. However, excessively high credit growth in combination with competition in gaining market share in which credit institutions pushed deposit rates higher to have enough liquidity for lending resulted in maturity mismatch and high non-performing loan rate, posing threats to the safe of credit institution system. This pushes up interest rates, increases the number of non-performing loans and threatens the safe operation of the credit institution system.¹

Since 2012, the SBV has deployed monetary policy tools synchronously, in particular flexible management of a credit growth target for the credit institution system, thereby directing credit growth to a more reasonable level. The liberalization in certain interest rates and autonomy granted for credit institution in negotiating interest rates with customers have also allowed credit activities to better reflect market supply and demand, while respecting the risk appetite and business strategies of credit institutions. In addition, the legal framework for credit activities has been improved, in line with progress and digitalisation trends in the banking sector.

As a result, from 2012 to 2023, credit growth decreased to around 12–14% per year.² The economic growth rate increased gradually, from 5.2% in 2012 to 7% in 2019, before the outbreak of the Covid-19 pandemic. This shows a significant improvement in capital use efficiency during this period (see Appendix 1). The credit structure has shifted in line with the economic structure, focusing on the production and business sectors. Credit to potentially risky areas has been controlled; on-balance, the non-performing loan (NPL) ratio has been maintained at low levels. Credit institutions have improved their governance, operational capacity and prudential indicators, while at the same time accelerating the restructuring process, NPL resolution and cuts to market interest rates, contributing to macroeconomic stability and inflation control.

3. Challenges in credit policy management

Recently, the SBV has made many changes to its credit management. However, as Vietnam is a small transitioning economy with large openness, potential risks affecting the SBV's policy management are in several areas.

¹ Vietnam's ratio of credit to GDP is over 133% and continues to increase – the highest among low- and middle-income countries. The World Bank has continually warned about systemic risks and the safety of the national financial security associated with this.

² Annual credit growth over the 2019–2023 period was 13.65%, 12.17%, 13.61%, 14.19% and 13.78% respectively.

First is the heavy reliance of economic development on bank credit, given that the capital market has not developed in proportion with its role as a medium- and long-term capital supply channel. Vietnam is among the countries with a high ratio of total banking system assets to GDP, at about 200% (the average ratio of the 10 countries in the Association of Southeast Asian Nations is 88.98%). Vietnam's credit to GDP ratio is the highest among low- and middle-income countries according to World Bank statistics, reaching over 133% (Appendix 2). Heavy reliance on bank credit poses potential financial risks, increasing liquidity risks because capital mobilization by the credit institution system is mainly short term while medium- and long-term credit accounts for a large proportion of total credit outstanding.

Second is the great deal of pressure from global economic uncertainty on the management of monetary policy in general and credit policy in particular. Recent shocks have intensified pressure on global inflation, forcing central banks to tighten monetary policy and leading to appreciation of the US dollar. This has affected investor sentiment³ and triggered capital outflows from emerging markets, therefore putting pressure on exchange rates and interest rates in developing countries, including Vietnam. Tightening monetary policy to cope with inflationary pressures may cause a decline in both credit demand and the economy's ability to absorb capital. This would have a negative impact on domestic economic development goals in the medium term.

Third, according to the "excessive finance" theory of Arcand (2015), when financial depth exceeds a certain threshold, it will reduce economic growth.⁴ Currently many countries maintain financial depth above the threshold of 100%, even 200%, challenging the theory of excessive finance. The negative impact of excessive finance on economic growth could be explained in several ways: (i) The larger the financial system is, the more difficult supervision becomes and risk taking increases, leading to the probability of fluctuations in the economy as well as increasing crises over time. (ii) Excessive development of the financial system will lead to uneven resource distribution, attracting a large number of high-quality workers to participate in the financial system, affecting other economic sectors and economic growth. With a high credit-to-GDP ratio, Vietnam may face the adverse impact of excessive finance on economic growth.

Fourth is climate change and more frequent extreme and unusual weather patterns, negatively affecting human health and leaving behind economic losses and impacts on Vietnam's sustainable growth. This raises the need for timely, appropriate solutions to minimize and adapt to the impacts of climate change. In particular, credit policy needs to aim at green credit by increasing the proportion of credit in renewable and clean energy in tandem with integrating aspects of sustainable development, climate change and green growth in lending programs and projects. These are big challenges considering that green credit is new in Vietnam, the legal and practical

³ The US dollar index (DXY) increased sharply, approaching 115 in September 2022, up by more than 19% year to date and 23% year on year – the largest annual increase since 1981.

⁴ According to this study, a non-linear relationship between the private sector credit-to-GDP ratio and GDP per capita is established when excessive financial conditions occur, ie when the credit-to-GDP ratio begins to enter the range of 80% to 100%.

foundations are inadequate, and green credit development policies have not been thoroughly implemented.

Finally, industry 4.0 and the application of new achievements in financial and banking activities have led to an increasing number of new products and methods in bank credit activities. This is both an opportunity and a big challenge for authorities to develop an appropriate legal framework for creating suitable development space for credit institutions in the context of digital transformation while ensuring the safety of credit activities.

4. Orientations for credit policy management

To promote the role of bank credit as an effective capital channel, meeting the capital needs of the economy, the SBV will focus on the following:

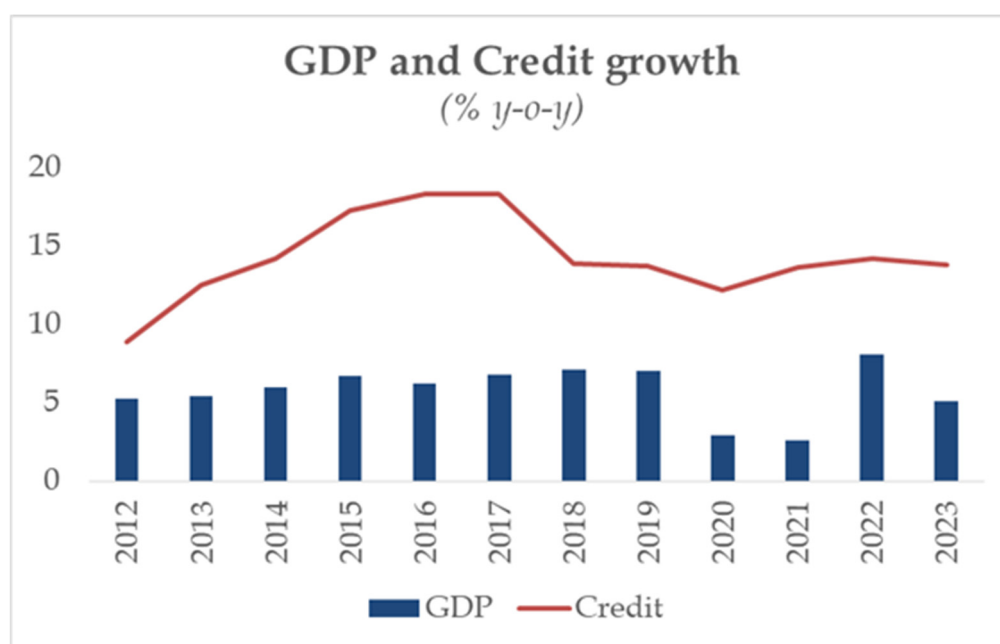
- Managing monetary policy in a proactive and flexible manner and in close coordination with fiscal and other macroeconomic policies, adhering to the priority objective of inflation control, contributing to maintaining macroeconomic stability and laying a solid foundation for sustainable and effective economic growth.
- Continuing to improve the legal framework to facilitate credit institutions' provision of a full and diverse range of products and services, and at the same time, improving people's access to credit, especially vulnerable groups; instructing credit institutions to safely and effectively grow credit and direct it toward the production and business sectors to create growth momentum; continuing to implement solutions to facilitate businesses' and people's access to bank credit.
- Instructing and facilitating credit institutions to strengthen their financial, governance and operational capacity to improve credit provision efficiency and reduce credit risk and the NPL ratio; restructuring credit institutions associated with NPL resolution, enhancing the quality and effectiveness of inspection and supervision to limit the use of loans for improper purposes, and strictly controlling credit in risky areas; giving early warning and taking measures to handle cases of potentially high credit risk, limiting the occurrence of risks and insecurity in the credit institution system.
- Continuing to consolidate the legal foundation for credit activities based on full compliance with the rules of the market economy, toward international standards and practices and in accordance with Vietnamese conditions; strengthening communication and dissemination of credit mechanisms, policies and programs in many forms so that people and businesses can understand and access bank credit policies, products and services.
- Developing and communicating guidelines for green banking and green credit activities, incentives, support mechanisms and tools to encourage the development of green banking and green credit.
- Promoting digital transformation in the banking industry, applying new technologies to banking products and services, strengthening the connection

and interoperability between capital and money markets to improve the efficiency and transparency of cash flows in the market and to monitor risks.

Credit growth and economic growth in Vietnam

in the 2012–2023 period

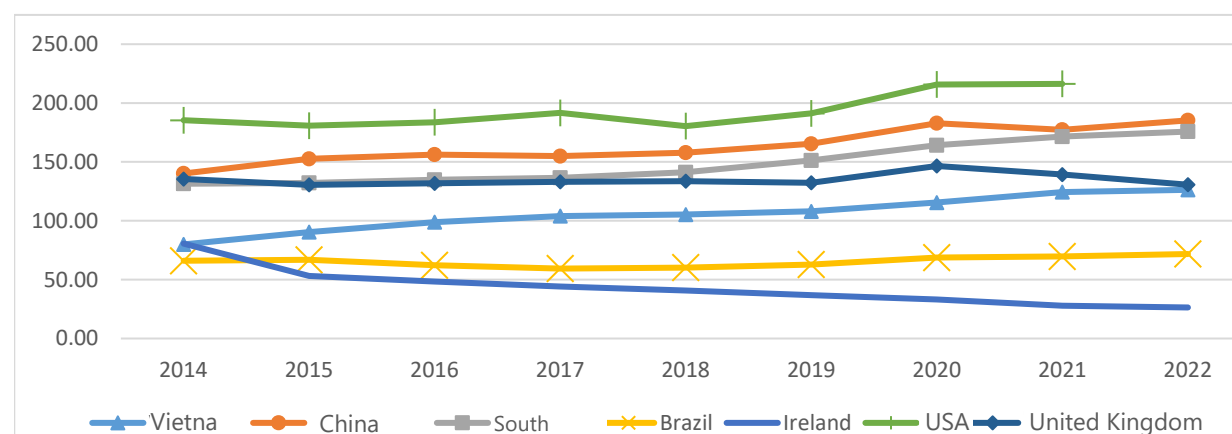
Appendix 1



Vietnam's credit to GDP ratio

Relative to other countries

Appendix 2



Sources: World Bank Database