Financial Stability Report

December 2023

BANCO CENTRAL
DE LA REPÚBLICA ARGENTINA

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Preface

The purpose of the Central Bank of Argentina (BCRA) "is to promote monetary stability, financial stability, employment and economic development with social equity, to the extent of its powers and within the framework of the policies established by the National Government" (Article 3 of the Charter). In general terms, there are financial stability conditions when the financial system as a whole can provide services for financial intermediation, hedging and payments in an adequate, efficient and ongoing manner, even in adverse operating contexts.

For the financial system to contribute to economic development with social equity, financial stability is a priority –by providing adequate means to save, enhancing the possibilities of production and consumption and allocating resources more efficiently—, and the system must be deep and inclusive.

In its regular transactions, the financial system is exposed to different types of risks that the system needs to manage. The interaction among exogenous risk factors, vulnerability sources and elements of resilience defines a specific level of systemic financial risk. Within the context of such interaction, an eventual materialization of the risk factors will result in some impact on the financial system and on the economy at large.

The policies of the BCRA seek to limit systemic risk, preserve stability and promote higher levels of depth and inclusion in the financial system. Thus, the BCRA implements a micro and macroprudential approach tending to limit such vulnerabilities and to enhance the resilience of the system. This includes the continuous monitoring of the financial system's soundness and the exercise of its powers as regulator, supervisor and liquidity provider of last resort.

In this context, the BCRA publishes its Financial Stability Report (IEF) every six months to inform about its assessment of the stability conditions and explain the policy measures implemented to such effect. The IEF is underpinned by the assessment of the domestic and global macroeconomic conditions made in the Monetary Policy Report (IPOM). The Financial Stability Report provides information and analysis to the different agents of the financial system and is designed to be an instrument to encourage public debate on aspects related to financial stability and, especially, on the Central Bank's actions on such matter.

The next issue of the IEF will be published in June 2024.

Autonomous City of Buenos Aires, December 6, 2023.

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Executive Summary

Despite the factors of uncertainty seen at both domestic and global levels in recent months, the Argentine financial system has continued exhibiting a high degree of resilience and performing, without disruptions, its regular activities in terms of intermediation of funds and provision of means of payment. The ensemble of financial institutions has preserved sizable margins of coverage, with liquidity and capital levels that largely exceed international recommendations, while simultaneously keeping a limited exposure to potential vulnerability sources. This evolution was favored by a prudential regulatory framework aligned with Basel standards. In recent months, against a backdrop of volatility in financial variables, the ensemble of financial institutions has exhibited a weak evolution of their financial intermediation activities in terms of both the stock of loans and private sector deposits in real terms.

In recent months, the domestic economic activity continued to be conditioned by the residual effects of the drought of late 2022 and early 2023, added to the uncertainty generated by the electoral process, which led to heightened volatility in financial markets. Amid this context, the Federal Government adopted a series of measures to improve the trade balance, underpin the accumulation of international reserves and strengthen tax resources —within the framework of the arrangement reached with the International Monetary Fund (IMF). In turn, the Central Bank of Argentina (BCRA) implemented a series of measures including the re-gauging of the official exchange rate, interest rate rises, transactions in the open market and changes to foreign exchange regulations, among other. Against this backdrop, financial markets exhibited a mixed evolution. The National Treasury continued refinancing the debt payable in pesos in the domestic market with a net positive financing and changing conditions in the issue of instruments. The private sector financing amount through the capital market dropped marginally against previous months but continued to grow in year-on-year terms.

The international context seems to be still especially conditioned by the cycle of monetary policy interest rates rises in advanced economies. Adjustments were made to perspectives in recent months, which led to expectations of higher-for-longer rates. This situation implied an increase in the yields of the US Treasuries, which was more noticeable in longer-term instruments and the appreciation of the US dollar against the remaining currencies, with a heterogeneous effect on the evolution of emerging economies' assets. The uncertainty in terms of the duration and intensity of the monetary policy tightening bias in advanced nations (impacting on the expected growth at global level) was accompanied by additional factors such as doubts about the evolution of the Chinese economy and risks associated with geopolitical tensions.

This international scenario of uncertainty and several potential risk factors is particularly challenging given the existence of various vulnerabilities at global level, due to a long period of abundant liquidity and historically low interest rates, namely: the growing indebtedness level of sovereigns and of the private sector (with sustainability conditioned by the interest rates levels and growth), the existence of overvalued market segments (and very sensitive to changes in the perspectives of interest rates and perceived risk) and the heightened involvement of non-bank financial intermediation (with a procyclical behavior). As a result, the chance of having a more adverse context in the near future should not be disregarded since it might impact on the evolution of the domestic activity and/or on the performance of the domestic financial markets and, therefore, on the evolution of financial intermediation at large.

It is estimated that the trade-off between the domestic financial system's sources of vulnerability and resilience factors (strengths) has remained virtually unchanged against the assessment provided in the previous Financial Stability Report (IEF) by mid-2023. This evolution was mainly associated with the rise in aggregate hedging levels —liquidity and solvency— of the ensemble of financial institutions, reaching the highest levels of the last 10 years within a general framework of relatively limited risk exposures and heightened potential challenges on the margin.

The financial system's intermediation activity has continued to exhibit a weak performance so far in the second quarter of 2023, with a reduction of the bank credit stock to the private sector in real terms and a slight rise in funding to the public sector (the latter is still standing at values similar to the average observed in the ensemble of economies of the region —net of deposits of the same sector). Total lending (including the non-financial private and public sectors) accounted for almost 44% of the aggregate financial system's assets (September, latest available data), falling slightly in the last six months and posting no relevant changes in year-on-year terms. The non-performing ratio of financing to the private sector —which measures the materialization of credit risk— has contracted slightly since the publication of the previous Financial Stability Report (IEF, -0.2 p.p.), standing at around 3%, similar to the average value of other countries of the region. In terms of the analysis of the risk exposure inherent in financial transactions, the potential vulnerability associated with credit risk continues to be the most relevant source for the aggregate of financial institutions by early 2024. Within this framework and in line with the latest IEF reports, it is important to highlight the high soundness level of the aggregate financial system, added to the limited and decreasing levels of indebtedness of the domestic private sector, with the subsequent impact on the burden of such debt services. This resilience is evidenced by the results of the sensitivity exercises (hypothetical, extreme and unlikely to occur) carried out to assess their solvency.

As regards the analysis of financial stability, the evolution of the traditional intermediation activity as a factor intended to invigorate the income and solvency of institutions continues exhibiting some level of vulnerability vis-à-vis the current context. Against this backdrop, the BCRA continued to boost its credit policy focused on micro, small and medium-sized enterprises (MSMEs), seeking to provide affordable credit conditions to companies via the "Credit Line for Productive Investment" (LFIP). Moreover, the aggregate financial system has managed to keep positive profitability levels in recent quarters.

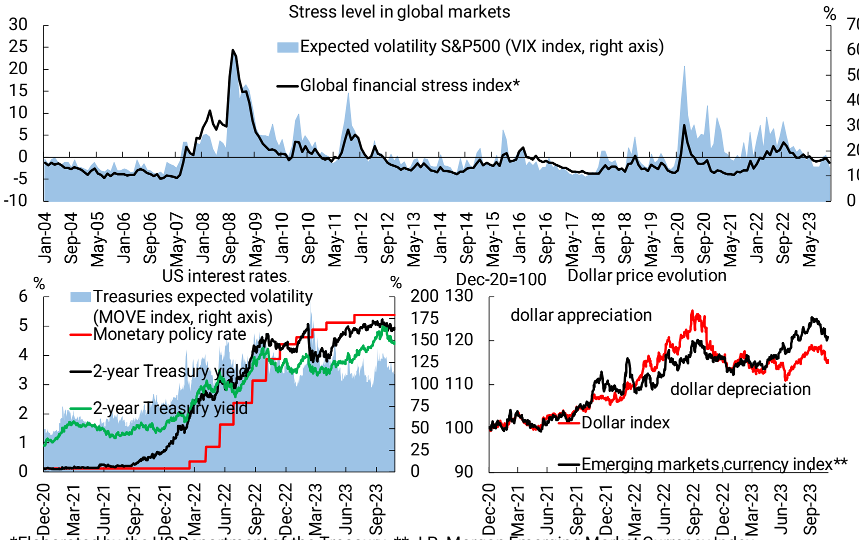
Regarding interest rates, in recent months, the BCRA has continued operating within its structural target of promoting positive yields in real terms on investments in domestic currency against a context characterized by a contraction of funding via private sector deposits in real terms in the aggregate of banks, a slight shortening of maturity in deposits in pesos and a heightened volatility in the issue of instruments. Despite this evolution on the margin, the aggregate financial system has continued to keep high liquidity coverage ratios, exceeding international recommendations on this matter.

All in all, the BCRA continues boosting actions to make progress in the monitoring and approach of emerging sources of potential risks for the sector related to crypto-assess, the implementation of innovative technology in the sector and of new standards to improve cyber resilience conditions, and the eventual onset of climate-related risks, thus promoting the development of new perspectives for data collection to carry out its assessment.

1. International and Local Context

With several open fronts in terms of uncertainty, the international context has continued to be challenging since the publication of the previous Financial Stability Report (IEF). In fact, there are still doubts around the growth path at global level, with expectations of a relatively weak dynamics for the economic activity, characterized by a downward bias.[1] The abovementioned scenario is compounded by persistent inflationary pressures within a context still marked by a cycle of more contractionary monetary policies, particularly in advanced nations. Even though the intensity and the duration of the current monetary policy cycle continue to be uncertain, these economies have shifted towards a “higher-for-longer rates” outlook (see Box 1), evidencing a certain level of mismatch against emerging countries. In addition, China runs the risk of a decreasing growth path (added to the concerns about the real estate market in that country), added to the presence of geopolitical tensions (the war in Ukraine and, more recently, the situation in the Middle East and the potential escalation of these tensions).[2] These risk sources may eventually trigger a negative and sudden dynamics, which may potentially impact on global financial stability given their eventual interaction with several pre-existing vulnerability sources. The latter have been mainly caused by a period characterized by broad liquidity and low interest rates after the international financial crisis of 2008-2009, including, for instance, the presence of historically high stocks of debt in several sectors (see Exhibit 1) and the growing relevance of investment funds at global level (whose performance amplifies the international financial cycle and leads to a higher correlation between the evolution of emerging economies’ assets and the situation of the markets in advanced nations).

Chart 1 | Expected volatilities, Treasuries yields and US dollar

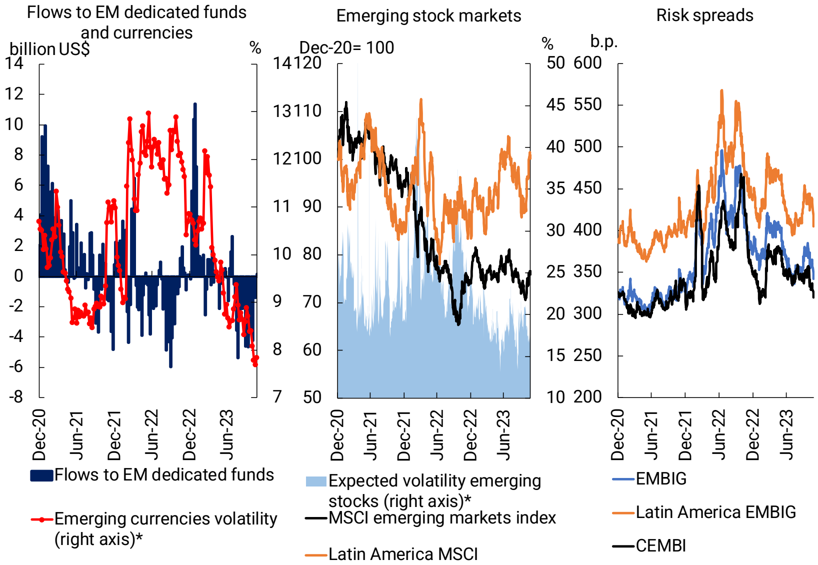


*Elaborated by the US Department of the Treasury. ** J.P. Morgan Emerging Market Currency Index.
Source: BCRA based on Bloomberg.

1 See, for instance, the latest issue of the Monetary Policy Report (IPOM) prepared by the BCRA, or the *World Economic Outlook* and *Global Financial Stability Report* prepared by the IMF.
2 As a result, for instance, the Geopolitical Risk Index (Caldara and Iacoviello) recorded in October the first peak since March 2022 (within the context of the armed conflict in Ukraine).

Within a context of a high expected volatility in historical terms for this segment of the market (see Chart 1), the yields of US Treasuries (particularly relevant for the emerging countries' debt) have tended to go up in recent months. The rise was more marked in the case of long-term yields and, even though the yield curve has continued to show an inverted shape for US bonds (a situation commonly associated with the possibility of a recession), the slope is less negative than it was by mid-year.[3] Against this backdrop, the US dollar, which had depreciated slightly against the remaining main currencies from January to June, tended to appreciate once again following the path observed in 2021 and 2022. In this sense, it went up 3.6% between July and October but exhibited a contraction in November. Regarding the assets with a higher relative risk, advanced economies' main stock indices have shown mixed results so far in the second half of 2023 (even though, generally speaking, they have gone up so far this year), with expansions in the United States and limited contractions in Europe and Japan. In turn, the volatility expected for the US stock market averaged 16% between July and November, according to the VIX index, posting lower values which are, in general, associated with a higher risk appetite at global level. [4] This figure is standing below the average of the first half of the year (19%) and of the index in historical terms (around 20%), thus raising a heightened caution against the relative optimism of markets (to what extent valuations are considering an outlook of "soft landing" and a relatively limited period of high interest rates).

Chart 2 | Emerging economies: selected variables



* J.P. Morgan Emerging Market Volatility Index. ** Expected volatility MSCI emerging markets index.
Source: BCRA based on Bloomberg, J.P. Morgan and Standard Chartered.

Unlike the first half of 2023, investment funds specializing in emerging markets' assets have recorded net negative flows for both shares and bonds so far in the second half (see Chart 2). These outflows partly result from the unwinding of positions related to Chinese assets due, in part,

3 The spread between 10-year and 2-year bonds narrowed from -106 bp by late June to -48 bp by late November (with statistical closing as of November 24).
4 Even though there was an upward trend as from the second fortnight of September. The improvement against the first half of the year was also observed in more general financial stress indices, such as those prepared by OFR or the Bank of America.

to the abovementioned factors. Within this context, emerging countries' stock exchanges measured in dollars posted an 8% drop between July and October (-10% in the case of Latin America), followed by a sizable rebound in November. In the fixed income market, the EMBI overspread (dollar-denominated bonds under international law) widened over 20 basis points (bp) by mid-October (33 bp in the case of Latin America).[5] In turn, emerging nations' currencies depreciated 2% against the US dollar according to the EMCI index.

Argentina's economic activity dropped in the second quarter, adversely affected by the drought of late 2022 and early 2023, with a direct impact on agricultural-related sectors. In turn, during the third quarter, the economic activity was conditioned by a context of heightened volatility in financial markets due to the electoral process in progress. This increased volatility combined with the re-gauging of the official exchange rate, which impacted on the inflation rate. These factors, which are contractionary a priori for domestic demand, were lessened by the set of income policies adopted by the Federal Government and consisting in a series of fiscal and exchange measures intended to strengthen tax resources, improve the balance of trade and foster the accumulation of reserves.

After the re-gauging of the official exchange rate by mid-August, the BCRA implemented rises in the interest rate structure to anchor exchange expectations and promote positive yields in real terms on investments in domestic currency with the final objective of preserving financial and foreign exchange stability under a more challenging context. Additionally, the monetary authority continued implementing the "Credit Line for Productive Investment —LFIP", which was the main credit tool for MSMEs (see Box 2). In turn, the BCRA extended open market transactions in order to put a ceiling to volatility and foster broader liquidity in financial markets.

The National Treasury continued accessing the domestic capital market to refinance debt maturities payable in pesos. After performing an asset conversion transaction in June to extend the maturities in place up to the third quarter,[6] the National Treasury refinanced the remaining maturities through auctions during the second half of the year. From July to November, it managed to get a net positive financing, reaching a refinancing rate of 174% (net of the effect of the swaps made), which exceeds the rate recorded in the first half and throughout 2022 (136% and 157%, respectively). The issues included mainly bills and bonds adjusted by CER (57% of the total issued), followed by dual bonds (CER/dollar-linked, with a weight of 27%). Conversely, there was a scarce issue of Discount National Treasury Bills (LEDES). As regards issue conditions, the yields of shorter-term instruments with CER-adjustment went from a largely positive ground in the first half to a volatile scenario from the end of June to late November, recording negative values in some auctions.[7]

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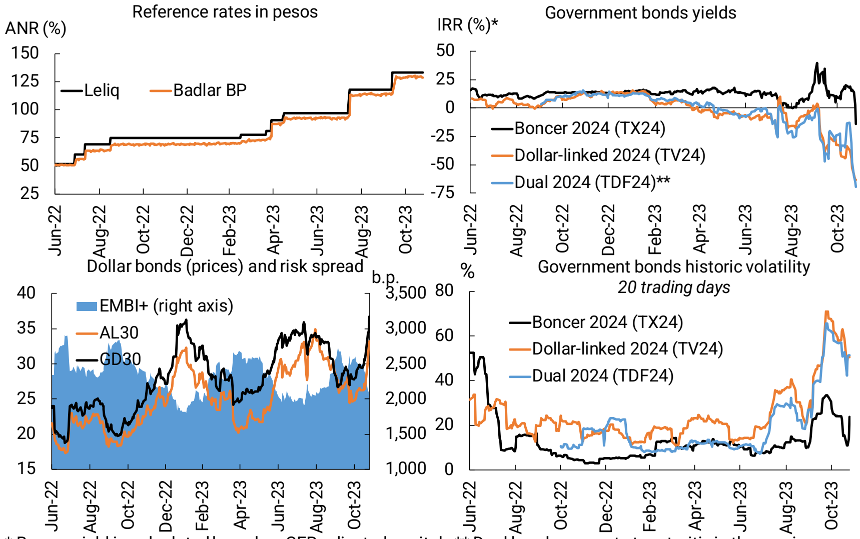
5 In November, the EMBI overspread shows a marked correction. In turn, the debt issue of emerging countries (including sovereign and corporate transactions) in international markets have recorded a 19% drop from July to November against the same number of previous months, but a 35% growth in year-on-year terms (y.o.y.).
6 More recently, in September, another voluntary conversion was made that only involved institutions of the Federal Government with relevant holdings of sovereign bonds maturing from October to November 2023. The amount accounted for around 10% of the average of the three swaps addressed to all holders that had been made in January, March and June 2023.
7 For instance, the 4-month LECER was issued with a yield ranging from –7.7% to +6.9% between July and November.

In line with the abovementioned, there was a growing volatility in prices across the various segments of the secondary bond market; this volatility was more marked at each stage of the electoral process (see Chart 3) but was partially contained by the interventions made by the BCRA to keep the regular operation of markets. The yields of the main segments of sovereign bonds evidenced the investors' preference for dual bonds and dollar-linked bonds to the detriment of debt adjusted by CER.[8,9] In turn, the yields of bonds in dollars in the secondary market have widened since late June, despite the recent improvements seen in prices after the presidential elections' results. The yield curve continued to have a negative slope.

Chart 3 | Interest rates and secondary markets of sovereign bonds



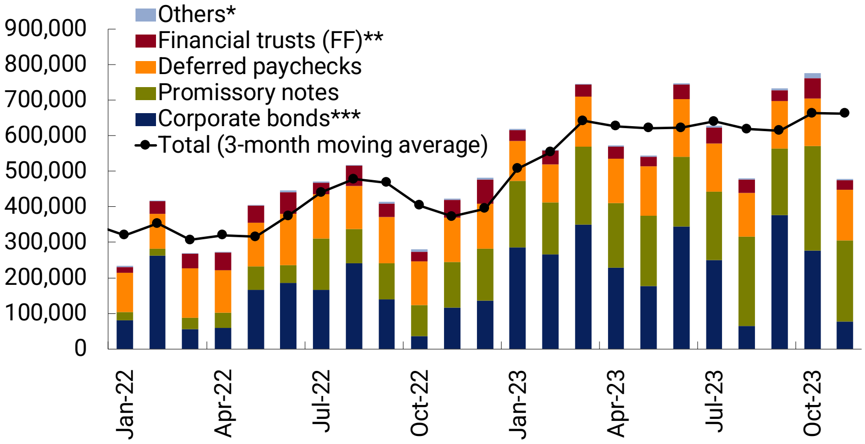
* Boncer yield is calculated based on CER-adjusted capital. ** Dual bond payment at maturitie is the maximum value between CER variation +3% and the applicable exchange rate variation.
Source: BCRA based on Bloomberg and IAMC.

The financing amount to the private sector through the domestic capital market (including, among the main instruments, Corporate Bonds but without considering swaps, deferred payment checks, promissory notes and financial trusts) contracted on the margin in real terms from July to November, against the same number of previous months but it grew 47% y.o.y. in real terms[10] (see Chart 4). Between July and November (against the five preceding months), there was a drop in Corporate Bonds financing and, to a lesser extent, in checks, which was offset by the rise in lending via promissory notes and, to a lesser extent, Financial Trusts. In year-on-year terms, the main driver was the growth of promissory notes and, to a lesser extent, of Corporate Bonds, whereas checks expanded at a slower pace (thus reducing their share in financing to the private sector).

8 In the case of dual and dollar-linked bonds, negative yields deepened from late June to late November. Thus, dual bonds with maturities up to August 2024 went from -73% to -26% while dollar-linked bonds with maturities up to September 2024 went from -64% to -43%. In turn, in the case of CER-adjusted bonds, yields stood at positive values during almost the entire period, even though with the abovementioned volatility, while shorter-term bonds were on the negative ground by late November. Since the end of June, yields accumulated contractions from 17 p.p. to 4.5 p.p. while the curve slope became steeper (from negative values for shorter-term bonds).
9 This evolution occurred within a context of repositioning of institutional investment portfolios, particularly Mutual Funds (see Section 4.2). On the other hand, there was a rise in the open interest of dollar futures contracts from July to October against the four previous months and an increase of devaluation expectations.
10 In terms of GDP, flows account for 0.25% (monthly average).

Chart 4 | Financing through instruments of the domestic capital market

Million $ of Nov-23



* Includes electronic credit notes, stockamarket shares and closed end mutual funds. **Excludes housing and infrastructure financing. *** Excludes swap operations and debt restructurings.
Source: BCRA based on BCBA, CNV and MAVSA.

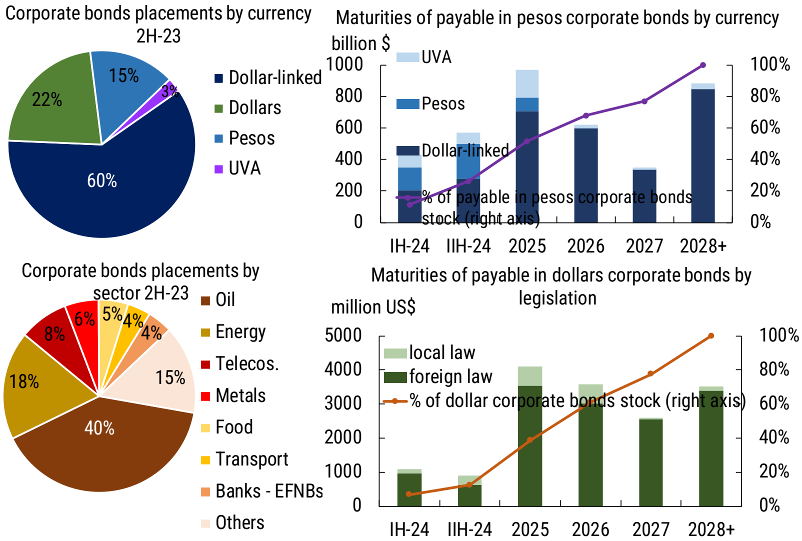
Corporate Bonds have continued to be one of the main financing instruments in the domestic market, accounting for around one third of the flows recorded in the period (standing below the value of the same number of previous months due to the growth of transactions with promissory notes). The Oil & Energy sectors, followed by Telecommunications, jointly explained nearly 70% of the amount issued in these months (see Chart 5). A breakdown analysis by currency reveals that dollar-linked issues accounted for almost 2/3 of the amount of the period with terms that, on average, exceeded 45 months. In turn, there was an increase in the share of the issues in dollars (with longer terms, +30 months on average), which accounted for 22% of total flows. Conversely, transactions in pesos (with terms shortening to an average of 14 months) had a more marginal weight on total flows over this period (14%). As regards the conditions of issue, the yields of the dollar-linked segment contracted around 6 p.p. on average and stood at negative values, while issues in dollars exhibited a more limited reduction.[11,12] On the other hand, in the Corporate Bonds issued in pesos, the cut-off yields widened in a context of rises in the Private Banks BADLAR rate —which is usually taken as basis for the calculation of coupons— and of the spread on such rate.[13]

11 The average monthly yields weighted by amount of issue are considered for each segment (dollar-linked, pesos and dollar) taking into account the benchmark terms.

12 For the 24-to-36-month dollar-linked Corporate Bonds, yields were slightly negative in June and stood at -7.9% in November. For Corporate Bonds in dollars taking into account 24-to-36 month instruments, the expansion stood at 128 bp as from June to around 4.7% in November.

13 12-to-24-month Corporate Bonds are considered. There was an expansion of 35 p.p. from June to November to a level of 134.4% while, in terms of the spread on the benchmark rate, the increase was 201 bp over the same term.

Chart 5 | Corporate Bonds issues by currency, sector and maturity profile



Notes: data up to November 2023. Domestic placements exclude swap operations.
Source: BCRA based on BCBA and CNV.

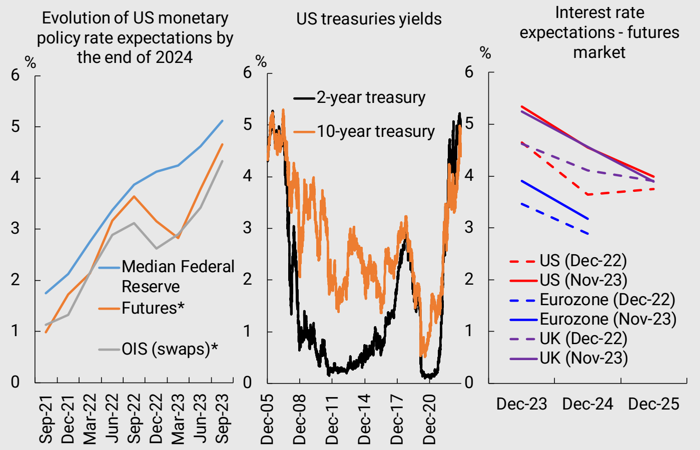
The amortizations of Corporate Bonds in dollars faced by companies will amount to USD1.1 billion (5% of the total stock of Corporate Bonds) in the first half of 2024. [14] These payments are mostly explained by the instruments of a reduced number of large companies and of the oil & energy sectors. As regards the debt payable in pesos, payments amount to ARS430 billion corresponding to dollar-linked Corporate Bonds (48%), Corporate Bonds in nominal pesos (34%) and Corporate Bonds in UVA (19%).

14 Corporate Bonds in dollars account for 59% of the outstanding stock of Corporate Bonds by late November 2023, followed by dollar-linked instruments (3.1% of the total stock).

Box 1 / Expectations about the interest rate rise cycle in advanced economies, the yields of the US Treasuries and the evolution of the US dollar.

The difficulties to reduce Core Inflation in the US gave rise to expectations that anticipate a higher-than-previously estimated monetary policy rate. As a result, this benchmark rate is expected to stand at high levels for a longer time ("higher-for-longer rates"),[15] before the Federal Reserve (FED) decides to start to cut it down. In turn, the forecasts made by the members of the FED's FOMC [16] have been revised upwards for 2024 (see Chart B.1.1). Even though in the last quarter of 2022 a 3.2% monetary policy rate was expected for late 2024, such expectation went up to 4.7% in September 2023. Besides, the median of FOMC's members hiked from 4.1% to 5.1% over the same period of time.

Chart B.1.1 | Evolution of interest rates in the United States



* Futures and OIS values correspond to the rates of those instrumentos on the dates on which the Federal Reserve's FOMC meetings were held. Source: BCRA based on Bloomberg.

The perspectives about interest rates depend heavily on the economic data released. Even though there is a remarkable context of uncertainty, the shift towards expectations of higher-for-longer rates has been underpinned by better-than-expected data about the US economic activity, which translated into a growing perception that the country might avoid a recession, with its economy tending towards a soft landing.[17] If this scenario held true, the FED would have more room for maneuver to decide the appropriate time to start an interest rate reduction path.

The expectations of higher rates impacted on the yields of the US Treasuries, which have exhibited a marked rise from late June to mid-October. This increase mainly concentrated at the midpoint and in the long chord of the curve, resulting in Treasuries' yields that are standing at the maximum values since 2007.[18] In this respect, the recent hike in Treasuries' yields is mainly due to the higher-than-expected interest rates in real terms, against inflation expectations that are below the recent record-high values reached in 2022.

In line with the situation in the United States, futures markets have also mirrored the expectations of increasing rates in the Euro Zone and the United Kingdom even though, especially in the case of Europe, interest rates are expected to be considerably lower than US rates. Within this framework, the US dollar appreciated, and this factor might worsen the financial conditions for emerging markets if such trend continued. Likewise, the materialization of a higher-for-longer rates scenario raises

15 The expected rate for late 2024 in the futures market went up from 4.1% in June to 4.9% by mid-October, and then recorded a partial reversal on the basis of better-than-expected inflation data.
16 Federal Open Market Committee.
17 The one-year probability of recession in the United States contracted from 65% in June to 51% in November in agreement with surveys carried out by Bloomberg.
18 In other developed countries, such as Germany and Japan, there were also important hikes in the yields over the same period, even though with more limited movements.

some concern about the sustainability of the debt assumed by different types of agents against a backdrop of a widespread level of high indebtedness, including emerging economies' companies (see Exhibit 1).

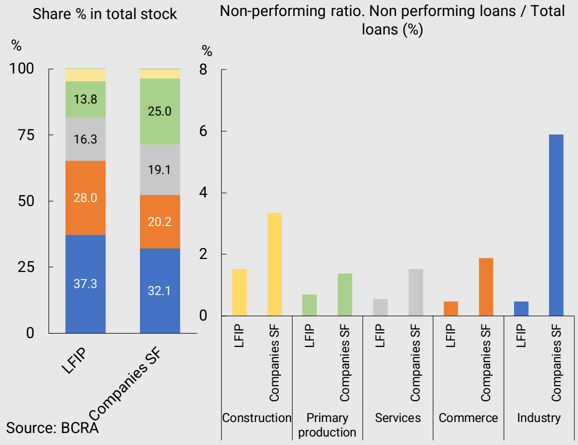
Consequently, this challenging context forces to keep an eye on the evolution of the inflation rate and the activity level, impacting on the expectations about monetary policy decisions, which would affect financial markets in general (including emerging nations).

Box 2 / Credit Line for Productive Investment (LFIP)

Throughout 2023, the BCRA continued supporting credit stimulus focused on productive development by means of a policy whose main pillar is the "Credit Line for Productive Investment (LFIP)". This instrument promotes access to bank credit for companies of a smaller relative size, providing them special conditions.[19] It is estimated that total loans channeled through the LFIP amounted to ARS2 trillion as of September 2023, equivalent to 12.3% of total lending to the private sector, in line with the level observed one year ago. Over 40% of the estimated stock of loans under the LFIP corresponded to investment projects.

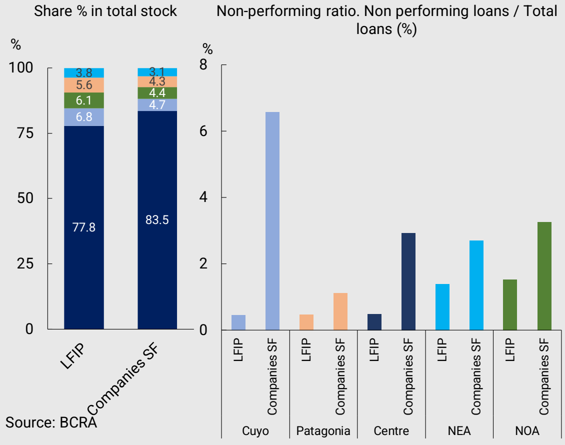
LFIP continued playing a key role in the domestic productive scheme. Considering the various activity sectors, over 65% of the estimated stock of loans under the LFIP would have been channeled to industry and commerce (see Chart B.2.1). This level is actually very high if compared to the share of loans to these two sectors in total bank loans provided to companies (they have jointly accounted for 52.3%). As per geographical distribution, the LFIP exhibited a higher incidence in regions with a lower relative scope of total bank lending to companies (see Chart B.2.2). In particular, the share of the LFIP was higher in virtually all regions (except for the Central region) relative to the geographical distribution of total lending to companies.

Chart B.2.1 | Estimated stock of loans
By economic activity – September 2023



Source: BCRA

Chart B.2.2 | Estimated stock of loans
By region – September 2023



Source: BCRA

The non-performing ratio of LFIP debtors stood at 0.6% in September, in line with the figure recorded in the previous Financial Stability Report (IEF) and well below the values of total credit to the private sector and to companies (3% in both cases). A breakdown analysis by economic sectors reveals that delinquency ratios of total financing to companies under the LFIP were lower in all segments against the figures observed at companies in aggregate terms (see Chart B.2.1).[20]

19 In September 2023, the BCRA renewed the LFIP until the closing date of the first quarter of 2024. For further detail see the Press Release of March 9, 2023 and Communication "A" 7720.
20 The non-performing ratio of total loans corresponding to debtors that gained access to LFIP was 0.5% as of September for the industrial and commercial segments and for service providers (5.9%, 1.9%, 1.5%, respectively, for the aggregate of companies).

It is estimated that, during the last six months, around 3,000 debtors without bank financing were included in the financial system by means of this tool. As a result, there would be a total of around 22,000 new debtors in the financial system as from the launch of the LFIP to September 2023 (accounting for 6% of the total stock of LFIP). For this subgroup of debtors, the non-performing ratio stood at 1.3% (posting no sizable changes against the previous IEF). On the basis of the latest available data, there is a total of 125,700 companies engaged in various activities and of different sizes that are using the LFIP as financing instrument.

As regards the impact on the labor market, the companies participating in the LFIP have over 1.5 million registered employees, which account for 25% of total wage-earning workers in the private sector (+1.1 p.p. against the figure recorded in the previous IEF).[21] In particular, workers involved in the services and industry segments that are employed by companies with LFIP loans accounted for 64% of the total (employment in both segments throughout the country stood at almost 67%). A breakdown analysis by region shows that the North-West (NOA) concentrated 7.1% of the workers employed by companies that have gained access to a LFIP loan, standing above the figure recorded at country level (in NOA, employment accounts for 6.9% of total employment at country level). In turn, in the Central-West Region (Cuyo), this level stood at around 6.4% (6.6% at country level), whereas no significant differences were recorded in the remaining regions of the country.

21 Data as of July 2023 of the Ministry of Labor, Employment and Social Security.

2. Main Strengths of the Financial System Given Current Risks

During 2023, the financial system has had a moderate exposure to risks, with available coverage standing at relatively high levels. The latter represents the main strength feature of the ensemble of financial institutions. In particular, the aggregate margins —in terms of liquidity, provisions and capital— have continued to be sizable if compared to our domestic historical record and to international levels as well. Additionally, the regulation and supervision scheme applicable to financial institutions is consistent, in general, with the best practices recommended internationally (especially those arising from the so-called "Basel Committee"). Below there is a review of the main strengths of the financial system while, in the following section, some of these features will be analyzed in depth, together with other attributes to assess the potential vulnerability sources of the financial system.

Table 1 | Main indicators of the financial system's soundness

	Financial system			State-owned banks			Domestic private banks			Foreign private banks			NBFI		
	Sep-22	Mar-23	Sep-23	Sep-22	Mar-23	Sep-23	Sep-22	Mar-23	Sep-23	Sep-22	Mar-23	Sep-23	Sep-22	Mar-23	Sep-23
Liquidity															
Liquidity Coverage Ratio (1)	1.9	2.2	2.1	1.8	2.1	2.0	1.9	2.1	1.9	2.2	2.5	2.4	-	-	-
Net Stable Funding Ratio (1)	2.0	1.9	1.8	1.9	1.8	1.7	2.1	2.0	1.9	1.9	2.1	2.0	-	-	-
Broad liquidity / Deposits (%)	72.3	77.2	80.9	66.1	74.0	83.8	77.9	79.6	78.1	76.0	79.5	79.3	66.1	72.1	65.9
En $	69.1	75.0	79.8	63.9	72.9	84.0	74.4	76.1	74.4	70.6	75.1	73.7	55.9	63.8	56.6
En US$	91.8	89.1	86.7	77.2	73.5	72.8	100.9	100.1	97.8	101.0	98.1	106.3	246.9	230.7	232.7
Solvency															
Regulatory capital / RWA (%)	28.6	31.2	31.1	25.7	29.3	31.9	32.3	33.2	33.4	29.0	31.7	28.3	20.5	21.2	19.5
Regulatory capital Tier 1 / RWA (%)	27.4	30.1	30.5	25.1	28.8	31.8	30.4	31.6	32.2	27.8	30.6	27.7	18.3	18.7	17.7
Leverage ratio (%) (1)	14.5	16.3	17.4	12.4	13.9	15.2	16.4	18.2	19.0	15.4	18.0	19.3	22.3	17.8	20.2
Capital conservation buffer (% verification)	100	100	100	100	100	100	100	100	100	100	100	100	90	92	91
Domestic systemically important banks buffers (% verification)	100	100	100	100	100	100	100	100	100	100	100	100	-	-	-
Regulatory capital / Credit to private sector net of provisions (%)	55.9	62.3	66.8	51.3	61.0	70.9	65.2	68.6	72.6	55.5	61.0	60.4	21.3	20.4	18.3
(Regulatory capital - Regulatory requirement) / Credit to private sector net of provisions (%)	40.2	46.4	49.6	35.7	45.2	53.9	48.6	51.7	54.8	39.8	45.2	42.9	12.5	12.4	10.5
Profitability															
ROE in homogeneous currency (%a.) (2)	8.9	12.7	17.2	12.6	18.5	22.6	7.3	9.2	14.9	8.3	11.5	14.2	-30.0	-30.9	-23.0
ROA in homogeneous currency (%a.) (2)	1.5	2.3	3.2	1.9	2.9	3.9	1.3	1.7	2.9	1.5	2.2	2.8	-5.7	-5.9	-4.3
Private sector credit															
Private sector exposure / Assets (%)	28.3	27.2	26.1	27.6	25.8	23.6	26.2	25.8	24.9	30.2	29.5	30.0	72.4	65.0	60.8
Non-performing loan ratio (%)	3.1	3.2	3.0	5.1	5.3	5.2	2.1	2.3	2.0	1.4	1.5	1.5	4.9	3.9	3.4
Provisions / Credit to private sector (%)	4.0	4.0	3.7	5.3	5.5	5.3	3.1	3.1	2.7	3.2	3.2	2.8	4.9	3.1	2.7
Public sector credit															
Exposure / Assets (3)	15.6	17.0	17.7	20.0	25.0	24.0	14.8	13.4	15.4	10.7	10.5	11.6	0.8	2.2	2.7
Net exposure / Assets (%) (4)	2.5	6.7	6.2	-6.2	3.9	2.6	6.4	7.6	8.0	9.9	9.8	9.6	0.8	2.2	2.7
Currency risk															
(Assets - Liabilities + Net term purchases in foreign currency) / Regulatory capital (%)	24.6	30.2	39.3	48.3	57.3	60.1	17.3	25.2	34.4	5.8	4.0	17.2	40.5	43.5	54.5
Deposits in US$ / Total deposits - Private sector (%)	14.4	15.2	15.2	12.0	11.3	11.5	13.1	15.0	15.4	18.3	19.7	19.5	5.4	4.9	5.1
Loans in US$ / Total loans - Private sector (%)	8.0	8.5	9.0	8.1	8.8	9.2	6.6	6.4	5.7	9.0	9.7	11.3	6.4	9.8	9.2

(1) Jun-23 latest available information. (2) 12-month accumulated.
(3) Position in government securities (excluding BCRA securities) + Loans to the public sector. (4) Position in government securities (excluding BCRA securities) + Loans to the public sector
RWA: Risk weighted assets
Source: BCRA

i. **Liquidity ratios continued to be high for the aggregate financial system.** By the end of the third quarter of the year, the aggregate financial system's broad liquidity[22] stood at 80.9% of deposits (79.8% in the segment in pesos and 86.7% in foreign currency), going up against the figures recorded in the previous Financial Stability Report (IEF) and in year-on-year terms, and exceeding the average of the last 10 years (55.9%).

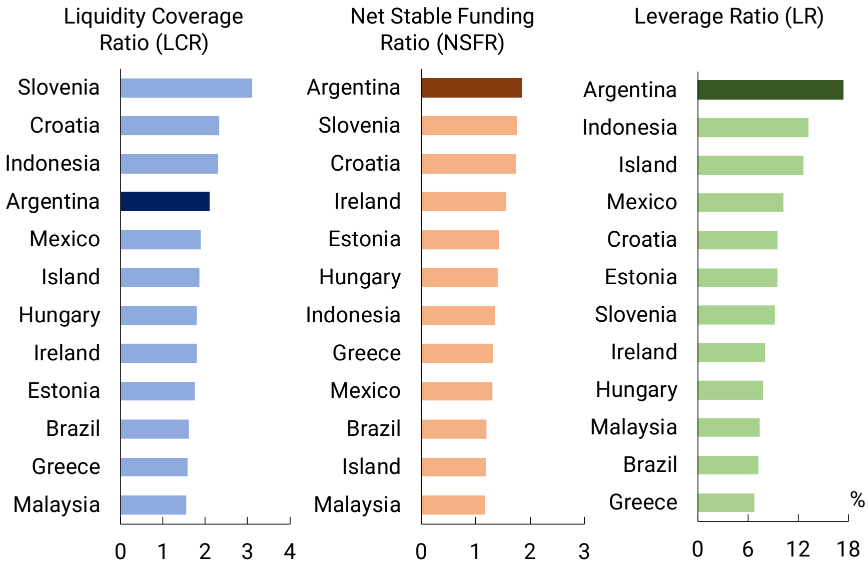
Taking into account the ratios recommended by the Basel Committee on Banking Supervision (BCBS), the liquidity ratios continued to be high for the ensemble of domestic institutions subject to compliance with the regulation (Group A) and continued to sizably exceed the regulatory

22 Considering the stock of liquid assets, the concepts included in the compliance with the minimum cash regime and other BCRA instruments, in both domestic and foreign currency.

minimum values and the average record in international terms (see Chart 6).[23] Moreover, the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR) posted no significant changes against the figures of the previous IEF (see Section 3.3 for further details).

ii. Solvency ratios continued to stand at high levels for the ensemble of financial institutions. The Regulatory Capital (RC) in terms of the risk-weighted assets (RWAs) stood at 31.1% in September 2023, while the capital position (ASE minus the minimum capital regulatory requirement, before considering the additional capital buffers —capital conservation buffer and systemic importance buffer) accounted for 289% of the regulatory requirement (see Section 3.1 for further details). The Common Equity Tier 1 capital stood at 98.2% of ASE (this is the segment with greater capacity to absorb potential losses).

Chart 6 | Basel III Ratios – International comparison



Note: Last available data.

Following the recommendations of the BCBS, the leverage ratio reached 17.4% for the financial system and continued to stand sizably above the minimum requirements and above the average of other countries (see Chart 6). The aggregate financial system has managed to keep positive profitability levels, going up against the figures recorded in the previous IEF (see Section 3.2 for further details).

iii. The financial system has kept a relatively low exposure to private sector credit risk and the non-performing ratio did not post significant changes against the previous IEF, whereas provisioning stood at high levels. The aggregate financial system's exposure to the private sector accounted for 26.1% of total assets by the end of the third quarter, going down against the level recorded in the previous IEF and against the figures observed in September 2022. As a result, the ratio is standing below the average of the last 10 years (39.8%).

23 Financial institutions with a stock of assets equal to or higher than 1% of the financial system's total assets, according to the consolidated text of Financial Institutions Authorities.

In September, the non-performing ratio of loans to the private sector contracted slightly against the previous IEF, to 3%. The aggregate provisioning of the sector accounted for 3.7% of the total portfolio of the private sector and 121.8% of the non-performing portfolio of loans (see Section 3.1 for further details).

Given the abovementioned strengths, the Argentine financial system is expected to be resilient enough to respond to an adverse scenario of greater stress. There follows a summary of the main potential risk factors (exogenous to the ensemble of institutions) that may be faced by the Argentine financial system in the short and medium term. It is estimated that an eventual scenario of materialization of these risk factors should be highly extreme (i.e., an event very low probability) to have a significant impact on the domestic financial stability conditions, based on the monitoring carried out by the BCRA.

Risk of a worsened domestic context, characterized by a weaker-than-expected economic activity and/or heightened volatility in financial markets. After the decreasing economic activity observed in the second quarter of 2023 (due to the effects of the drought), the evolution of the economy will continue to be conditioned by the context in the following months. Even in the absence of an external shock, the effects of the high uncertainty and higher volatility observed at domestic level in recent months might impact on various relevant variables (such as consumption and investment, inflation). In this sense, the BCRA continues monitoring the situation, gauging its policies and adopting any measures necessary to prevent disruptive effects. As it was already mentioned in previous IEF reports, a lower-than-expected economic activity or any new stress episodes in the domestic financial markets might impact on the banks' portfolio quality and on the dynamics of financial intermediation.

Risk of materialization of more adverse external conditions that might trigger a negative and sudden dynamics at global level, amplified by the existence of several vulnerabilities. So far, the economic situation at global level and the evolution of international markets have proved to be resilient against more challenging conditions. Nevertheless, there is a context of caution, focused on the evolution of the main economic variables of advanced nations and their potential impact on the expectations related to the monetary policy bias. The current uncertainty still puts a cap on growth perspectives worldwide, with a potential effect on international trade and commodity prices. The abovementioned scenario combined with the existence of several vulnerabilities[24] entails that various types of factors (adjustment of expectations regarding monetary policies in advanced economies, heightened concerns about the sustainability of the debt in specific sectors or countries and escalation of geopolitical conflicts) may end up triggering patterns of behavior that may abruptly change the financial conditions in the international markets, including key variables for emerging countries, such as portfolio flows and currency markets. In terms of domestic factors, a lower-than-expected global growth scenario would affect the trade channel more directly (impacting on the economic activity and the credit risk faced by banks), while a scenario of volatility in international financial markets

24 Including, for instance, segments of the market with prices that mirror relatively optimistic expectations, increasing debt burden, and a prominent role of investment funds with a procyclical behavior and interconnected with several sectors.

would impact more vigorously on the financial channel (affecting the exchange rate, the interest rates and the context where financial intermediation takes place). [25]

Operational risks and challenges related to technological innovation. The increasing use of digital channels entails a higher exposure of the financial system to fraud and cyberattacks, which might eventually translate into losses or, in cases of a larger scope, might create difficulties for the regular operation of markets. So far, these increasing risks have not triggered problems of a systemic nature. To prevent this type of situations, the BCRA continues implementing a wide agenda consisting in activities related to awareness, prevention and supervision of fraud and cyberattacks. All of the above supplements the ongoing adjustment of the regulations in force.

In the medium and long terms, there are additional risk factors to be taken into account. They include, for instance, the increasing use of crypto-assets at world level. Even though their use has been limited so far, its performance is evidently volatile and involves a sector that has been showing different types of problems in developed nations (giving rise to a widespread debate about these assets, see Box 3). The potential consequences of climate change entail another relevant risk. In this respect, Argentina offered in 2023 a national strategy related to sustainable finance while the BCRA launched a survey on this topic addressed to the financial system (see Exhibit 2).

The next section will provide a detailed description of the results of the financial stability analysis. It includes the main sources of vulnerability identified for the domestic financial system, given its level of exposure to the abovementioned risk factors. These sources of vulnerability will be contrasted with the strengths of the financial system, in order to assess its degree of resilience in the face of any eventual materialization of the risk factors.

25 In both cases, there might be second round effects that may end up affecting other transmission channels (for instance, a lower growth mainly impacts on the trade channel but, if there is a strong and quick adjustment of expectations, it might impact on risk appetite and on the conditions observed in international markets, with repercussions on the financial channel).

Box 3 / Crypto-assets: Relevant risks for emerging economies

Although crypto-assets have been with us for over a decade, there is still a widespread debate about their potential benefits and inherent costs. Most specialized literature tends to indicate that crypto-assets are still self-referential, have scarce contact with the real world and are not as reliable as traditional money.[26] The recent events of collapse at international level have exposed their deficiencies in terms of design and operation, which has led to a loss of confidence by investors and participants of the market[27] and to a higher regulatory supervision at global level.

Against this backdrop, the progress made last year within the framework of the G20 aims at expanding the narrative of crypto-assets beyond the concerns about their financial stability and integrity, seeking to capture the macro-financial implications and the perspective of the emerging market and developing economies (EMDEs)[28]. As a result, a global and coordinated policy approach has been shaped in order to offer a comprehensive analysis of crypto-assets associated risks. This approach, boosted by EMDEs and welcomed, in the first place, by the IMF,[29] seeks to emphasize the macroeconomic effects of a potentially widespread adoption of crypto-assets.

The relevant risks scenario for an EMDE includes new ways for currency substitution,[30] with implications in terms of monetary sovereignty and the traditional role of banks. The anonymity enabled by crypto-assets and the capacity to dissociate the attributes of money (unit of account, means of payment and reserve value) may entail a competition for fiat currencies. Transactions with crypto-assets tend to occur outside the financial system, impacting on the monetary policy transmission. Besides, the onset of new capital flow channels requires the assessment of crypto-assets' impact in terms of the effectiveness of the exchange policy and the capital flow management measures adopted by countries (CFMs[31]). In turn, EMDEs that tend to use these policy tools to keep macroeconomic stability may face new challenges in the event of a widespread adoption of crypto-assets.

In particular, the IMF analysis delves into the macro-financial implications of crypto-assets in key areas for an EMDE: external stability —including capital flow stability and access to an efficient and integrated cross-border payment system— and domestic stability —including the efficiency and sovereignty of the monetary policy and the financial stability.[32]

From the standpoint of external stability, crypto-assets might give rise to higher gross positions of foreign capital and more volatile capital flows. Although stablecoins might integrate the international assets markets more closely, thus facilitating risk diversification, there may be risks of a deeper

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26 For a recent landscape on the risks of crypto-assets see, for instance, BIS (2023a).
27 BCRA (2023).
28 G20 (2023a).
29 IMF (2023a).
30 The potential substitution process of the domestic currency with crypto-assets in EMDEs known as '*cryptoization*' was first developed in IMF (2021), and later extended to the reserve currency in BCRA (2022, 2023) and in BIS (2023c).
31 He et al (2022).
32 This Box does not consider the implications for the financial systems structure, which includes intermediation and market operation, financial inclusion, innovation and environmental sustainability.

contagion and problems in the balance of payments.[33] Besides, capital flows might turn out to be more volatile due to potential mass outflows or to price volatility itself. A sudden outflow (or reversal) of capitals might materialize if stablecoins denominated in foreign currency were accessible for the public in general. Lastly, the adoption of crypto-assets might erode CFMs' efficiency. The potential magnitude of these risks would be relatively more intense in EMDEs due, in general, to the higher intrinsic levels of vulnerability they face.

Regarding the implications for domestic stability, the IMF states that the transmission of the monetary policy would become weaker if households and companies opted to save and invest in crypto-assets. Price volatility of crypto-assets may affect the balance sheet of their holders and pose risks for stability in the event of a widespread adoption. Financial institutions might be directly exposed through their participation in trading, custody or market-making activities. There might also be indirect links if financial institutions granted loans or other financial services to crypto-asset service providers (such as, exchanges) or if they accepted crypto-assets as loan collaterals. Any potential mass withdrawal of stablecoins during stress episodes in the crypto-assets markets may give rise to large-scale sales of assets and affect the prices of the traditional financial assets market. The widespread adoption of stablecoins may result in the disintermediation of bank deposits, and this might divert savings and weaken the role of banks in financial intermediation.

The IMF's vision on the explicit consideration of crypto-assets' macro-financial implications has been considered as a fundamental input for the work entrusted by the Indian Presidency of the G20. Within this framework, the IMF and the FSB have recently published a jointly-drafted summary[34] that, on the one hand, summarizes the recommendations and standards developed by the standard-setting bodies (SSBs) so far.[35] On the other hand, it contains a roadmap for the implementation of a global policy framework to address the macroeconomic and financial stability risks posed by crypto-assets activities and markets, including specific risks for the EMDEs.[36] The roadmap recently approved by the G20 leaders includes actions for the implementation of policy frameworks, as well as the coordination, cooperation and exchange of information at global level and the approach to deal with missing information.

The BCRA performs monitoring activities so as to gain knowledge about the use cases involving crypto-assets at domestic level, with a special emphasis on the risks for individual users and the aggregate financial system.[37] Likewise, the BCRA is contributing to consolidate a global vision on crypto-assets that explicitly addresses the specific risks for EMDEs.[38]

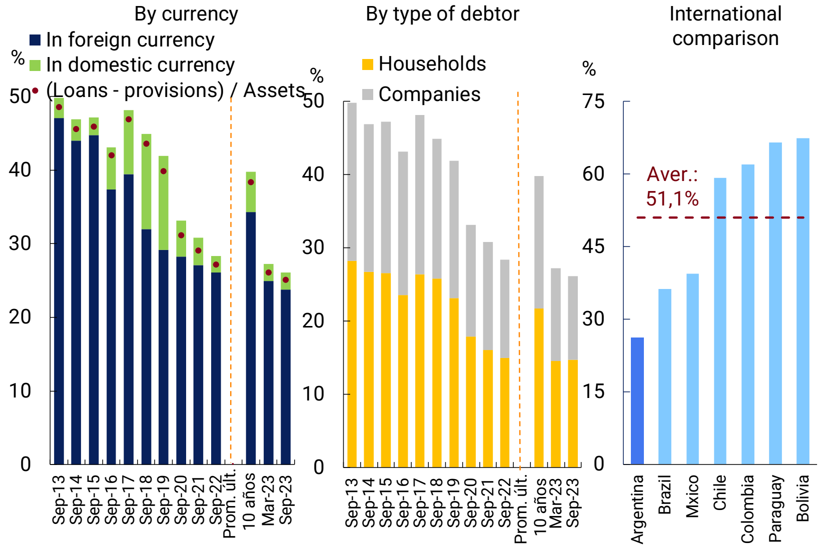
33 For a summary of the risks of stablecoins in EMDEs see, for instance, BCRA (2019).
34 IMF-FSB (2023).
35 For a summary of the recent regulatory developments, see, for instance, FSB (2023a).
36 G20 (2023b) and G20 (2023c).
37 See BCRA (2023) for an example of monitoring activities. For further information about publications and measures of the BCRA, see https://www.bcra.gob.ar/PublicacionesEstadisticas/Advertencia-sobre-criptoactivos.asp.
38 In this respect, see FSB (2023b).

3. Sources of Vulnerability and Specific Resilience Factors of the Financial System

3.1. Balance Sheet Exposure to Credit Risk

The financial system's credit exposure to the private sector continued to keep a decreasing path in recent months. As of September 2023, the total stock of loans to the private sector arranged by the ensemble of financial institutions stood at 26.1% of assets, down 1.1 p.p. against the value recorded in the previous Financial Stability Report (IEF) and down 2.2 p.p. against the value recorded one year ago (see Chart 7). This decline was mainly due to the performance of the segment of credit in pesos. This ratio is still standing below the average of the last 10 years (39.8%), and also below the figures recorded in other economies of the region (average of 51.1%).

Chart 7 | Stock of loans to the private sector in terms of assets
Financial System

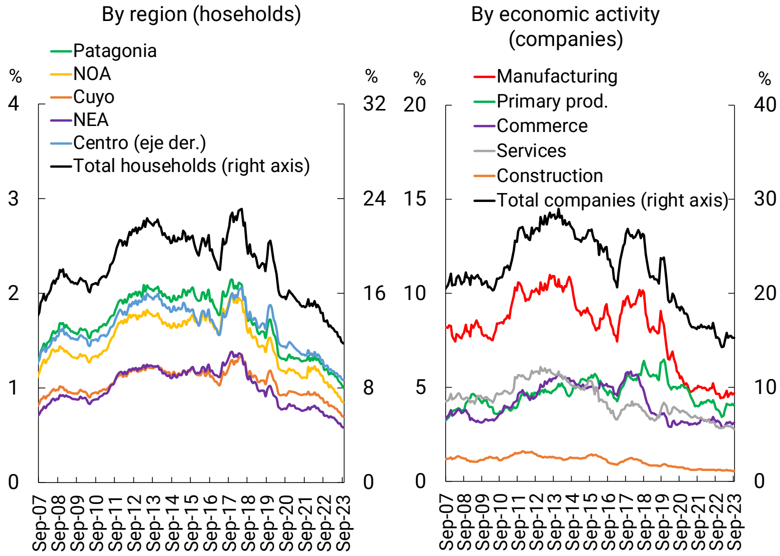


Source: IFS (IMF) and BCRA

A breakdown by type of debtor shows that the drop of the financial system's exposure to the private sector was mainly driven by the segment of households. In this respect, loans to households accounted for 11.8% of total assets, posting a contraction in year-on-year and half-year terms. The decline observed in this ratio was widespread across all regions of the country (see Chart 8).[39] In turn, the relative share of the loans provided to companies went up slightly in the last six months in the total figure, and stood close to 15% of assets. This performance was mainly accounted for by the primary production sector and, to a lesser extent, by trade, within the framework of the credit stimulus programs adopted by the BCRA and mainly intended for Micro, Small and Medium-Sized Enterprises (MSMEs) (see Box 2).

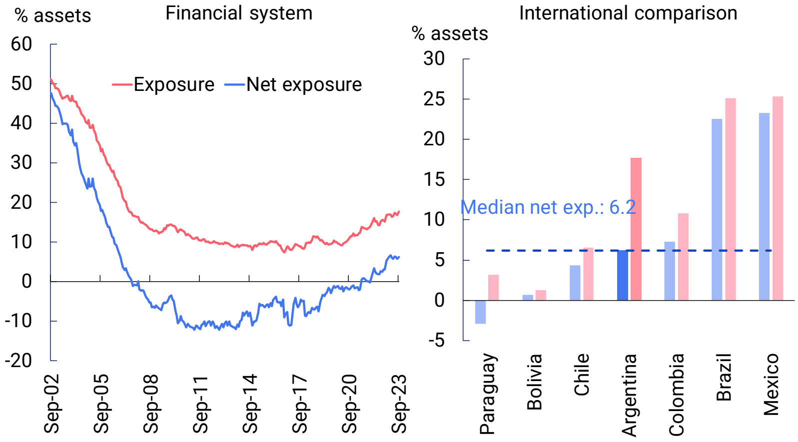
39 For the grouping process by region, the tax domicile is considered according to the Registry of the Federal Administration of Public Revenue (AFIP).

Chart 8 | Exposure to the private sector by segment – In terms of assets



Source: BCRA

Chart 9 | Stock of credit to public sector and deposits from public sector in terms of financial system assets



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).
Note: Data to Dec-22, except Argentina as of Sep-23. Source: IFS (IMF) and BCRA

As of September, the ensemble of financial institutions' exposure to the non-financial public sector has accounted for 17.7% of total assets,[40] up 0.7 p.p. since the publication of the previous IEF, and up 2.2 p.p. in a year-on-year comparison. Upon considering the funding obtained by the financial system from the public sector (via deposits), this ratio stood at 6.2% of total assets in September at an aggregate level (-0.5 p.p. against March and +3.7 p.p. y.o.y.). The current level of this ratio was in line with the average value observed in the economies of the region (6.2% for the median

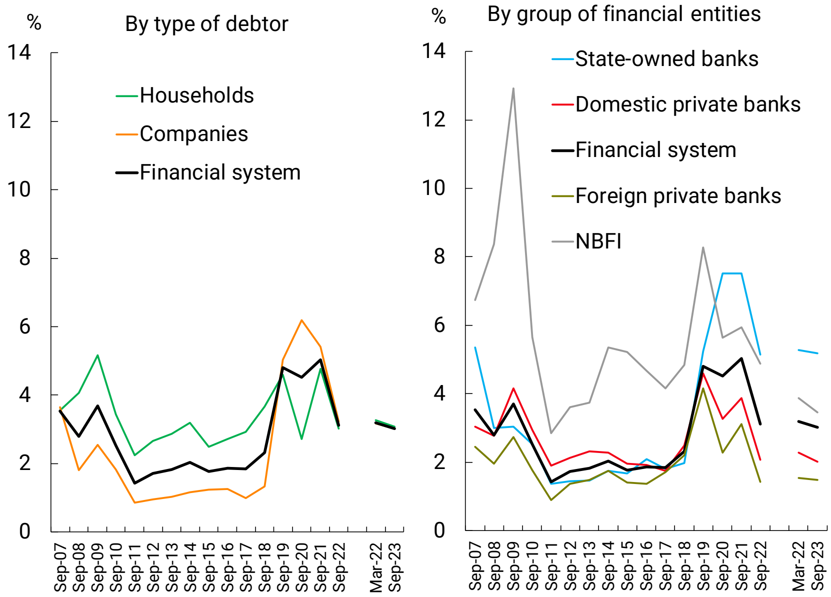
40 A breakdown of the exposure to the public sector by type of currency shows that nearly one half (8.6% of assets) corresponded to instruments in pesos adjusted by CER (+1.3 p.p. above the level stated in the previous IEF), while 5.6% of assets consisted in dual bonds (+1.4 p.p. from March to September), 2.1% of assets corresponded to instruments in pesos without CER adjustment clause (-1.8 p.p. in the last six months) and 1.4% consisted in instruments in foreign currency (posting no significant changes in the last six months).

and 8.8% for the simple average, see Chart 9). Since the domestic crisis of 2001/2002, all financial institutions are subject to regulatory limits in terms of financing to the non-financial public sector (applicable to each governmental level and to the total value), which have been set according to the institution's Regulatory Capital (RC) and stock of total assets.

In this context, total loans (including the non-financial private and public sectors) stood at 43.9% of the financial system's assets at aggregate level in September, dropping slightly in the last six months (-0.4 p.p.) and posting no significant changes in year-on-year terms.

The non-performing ratio of loans to the private sector contracted slightly against the value recorded in the previous IEF (-0.2 p.p.), standing at around 3% (and posting no significant changes in a year-on-year comparison, see Chart 10).[41] This level is consistent with the average value recorded by other countries of the region (2.9%).[42]

Chart 10 | Non-performing ratio of loans to the private sector - Non-performing financing / Total financing – As %



A breakdown by debtor type shows that the delinquency ratio of financing to households accounted for 3.1% of such portfolio (-0.2 p.p. between March and September), with slight drops in the non-performing ratios of nearly all regions (except for the North-East region). In particular, the delinquency ratio of Patagonia and the North-West region recorded deeper relative drops in the last

41 In line with the evolution of the non-performing ratio, the estimated default probability (EDP) of total financing to the private sector — a ratio that provides information on the transition in the credit classification of debtors— did not post significant changes in the last six months and continued to stand at 0,7%. The level of this indicator stood slightly below the average value of the last ten years (0.8%). In this estimate, EDP is defined as the proportion of the credit stock that was initially in categories 1 and 2 of the credit classification of debtors (performing), and then passed to categories 3, 4, 5 and 6 of this credit classification (non-performing) by the end of the period under analysis (in this case, a three-month comparison is considered). To calculate the average value of the estimated default probability, the period impacted by the financial relief measures adopted by the BCRA due to the COVID 19 pandemic is excluded.
42 The estimate has considered the simple average for the financial information available in the Financial Soundness Indicators (FSI, from the IMF) of the non-performing ratio of loans to the private sector of the following countries: Bolivia, Brazil, Chile, Colombia, Mexico, Paraguay and Peru.

six months. The non-performing ratio of loans to households contracted in nearly all credit lines, except for pledge-backed loans.[43]

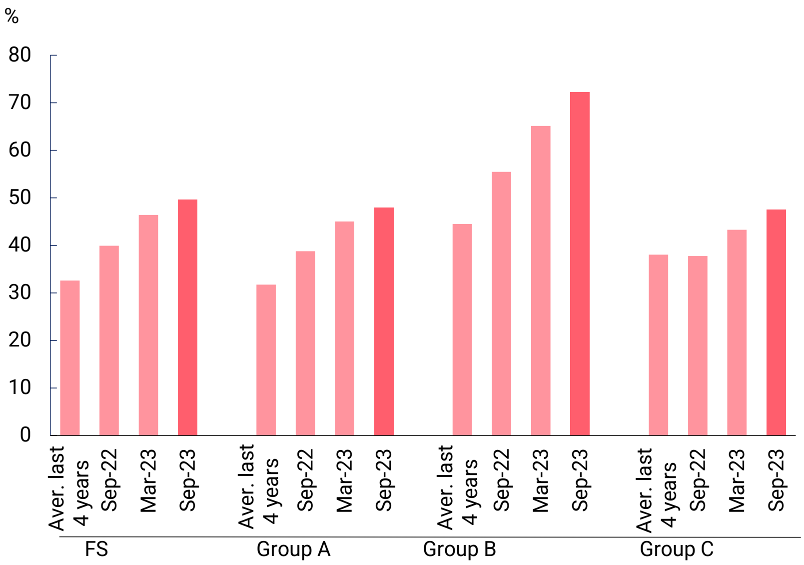
In turn, the non-performing ratio of loans to companies reached 3% in September, posting no significant changes in the last six months. The delinquency ratio of lending to the industrial sector, the construction business and, to a lesser extent, the primary production sector contracted slightly against the figures reported in the previous IEF, while the remaining sectors did not exhibit significant changes.[44]

Against this backdrop, an eventual materialization of the risk factors described above might impact on the payment capacity of the financial system's debtors, thus endangering the evolution of lending and some components of the sector's results.

3.1.1. Elements of Resilience and Mitigating Measures:

High aggregate levels of provisioning and solvency. The stock of the financial system's provisions accounted for 3.7% of the total credit to the private sector in September and it went down slightly against the level recorded six months ago and against the level observed one year ago (-0.3 p.p.). In turn, provisions accounted for 122% of the private sector non-performing portfolio of loans, exceeding 100% in all groups of banks. Over the period, the excess of regulatory capital of the ensemble of financial institutions (on top of the minimum required) was equivalent to 49.6% of the loans to the private sector net of provisions, and this value exceeds the level observed one year ago (39.9%) and is standing quite above the average of the last four years (32.6%). This ratio has shown increasing and relatively high values in all groups of financial institutions (see Chart 11).

Chart 11 | Regulatory capital position (ASE - requirement) in terms of the stock of loans to the private sector net of provisions



Source: BCRA

43 The EDP (see footnote 41) in the segment of households contracted slightly between March and September, and stood in line with the average value of the last 10 years (1.2%).

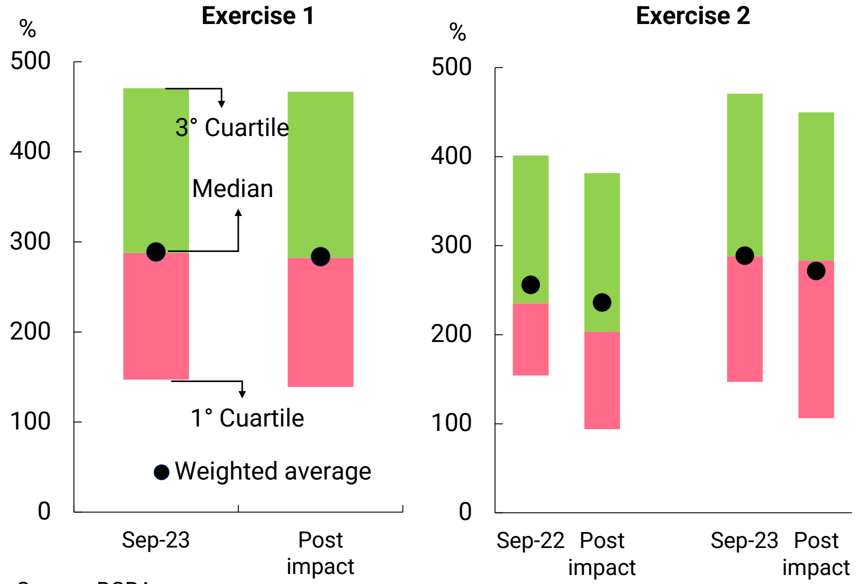
44 In the case of companies, the EDP (see footnote 41) increased slightly over the period, even though it continued to stand below the average of the last 10 years (0.3% in September and 0.5% for the historical average).

Like in the latest issues of the IEF, this report includes below the results of two sensitivity exercises (hypothetical, extreme and very unlikely to occur) in order to graphically show the high degree of resilience of the financial system in the face of any eventual materialization of adverse situations in terms of credit risk.[45]

Exercise 1: It assumes the non-payment of the non-performing loans of debtors, as well as the performing debt of credit holders who, in addition, have a non-performing loan with one or several institutions. The impact of this hypothetical shock is lessened by the provisions made (net of the theoretical provisions for the portfolio that would continue to stand in a performing condition). It is estimated that, even after the shock, the financial system would preserve a sizable regulatory capital. The weighted average of the regulatory capital position —Regulatory Capital (RC) minus the requirement, in terms of the latter— would go from 289% in September to 283% at aggregate level (median from 288% down to 282%).

Exercise 2: It assumes that the non-performing ratio of loans to the private sector increases in each one of the institutions up to their maximum individual value reached in the last 15 years.[46] Then, the exercise assumes the non-payment of this new non-performing stock (even though this impact is lessened by the provisions — net of the theoretical provisions for the portfolio that would continue to stand in a performing condition). Against this shock, the ensemble of financial institutions would keep high solvency levels, which would be even higher than the values observed when performing this exercise one year ago. The weighted average of the financial system's regulatory capital position would go from 289% to 272% (median from 288% down to 283%, see Chart 12).[47]

Chart 12 | Exercises of sensitivity on the financial system's capital position



Source: BCRA.

45 For further detail, see IEF I-23.

46 In this hypothetical exercise, the non-performing ratio of loans to the private sector would go from 3.1% to 7.1% at the aggregate financial system level.

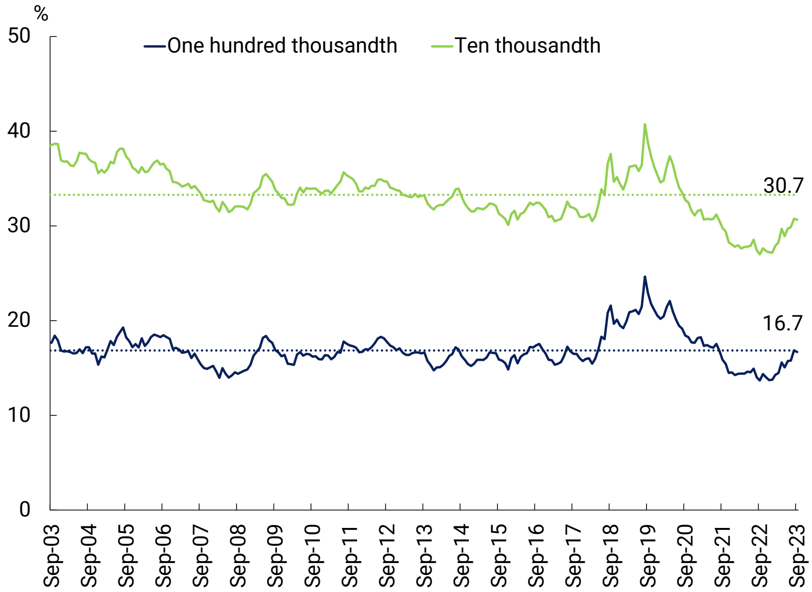
47 In the exercise of the same characteristics made with data as of September 2022, the weighted average of the financial system's capital position went from 256% to 236% (median from 235% down to 203%).

These exercises illustrate a combination of low exposure and delinquency in terms of the loans granted to the private sector, together with high coverages (provisions and capital) for the domestic financial system. In addition, there has also been observed a limited exposure of the system to risks involving natural persons, who tend to take on credit lines provided by non-financial credit providers (which add up to their traditional bank borrowing) (see Exhibit 3). On the other hand, there is also a limited exposure to credit risks originated in the exposure of the ensemble of banks to companies financing agricultural activities, which are potentially vulnerable to scenarios that may be affected by climate factors, such as a drought (See Exhibit 4).

Moderate concentration levels of private sector debtors. The share of the top 100 and top 50 debtors in total loans to the private sector (considering the total stock in the aggregate financial system) continued to stand below the average value of the last 20 years, despite the slight increase recorded in recent months.[48]

Given the increase in the number of debtors of the financial system (from 3.7 million in 2003 to 13.8 million in 2023), the abovementioned ratios may be refined by analyzing the relative share of a uniform fraction of debtors in the total number of borrowers: in September, the first one-hundred thousandth part[49] of debtors (with the highest stock of debt) accounted for 16.7% of the total stock (a figure similar to the average of the last 20 years (16.9%), see Chart 13), while the first ten-thousandth part[50] stood at 30.7% (below the historical average of 33.3%).

Chart 13 | Concentration of debtors
As % of the total stock of loans to the private sector



Source: BCRA.

48 The share of the top 50 and top 100 debtors accounted for 11.9% and 15% of loans to the private sector, respectively, in September 2023 (13.4% and 17.8% for the average of the last 20 years).
49 Total number of debtors divided in 100,000 equal parts.
50 Total number of debtors divided in 10,000 equal parts.

The moderate concentration level of debtors is consistent with the regulation that seeks to limit the potential losses derived from large exposures to credit risk. In particular, the large exposures of the financial system (defined as any exposure equivalent to 10% or more of the institution's Tier 1 capital) were equivalent to 3.5% of Tier 1 capital at aggregate level. Even though this record was slightly higher than the value observed in March, it continued to stand quite below the average of the last four years (15.5%).

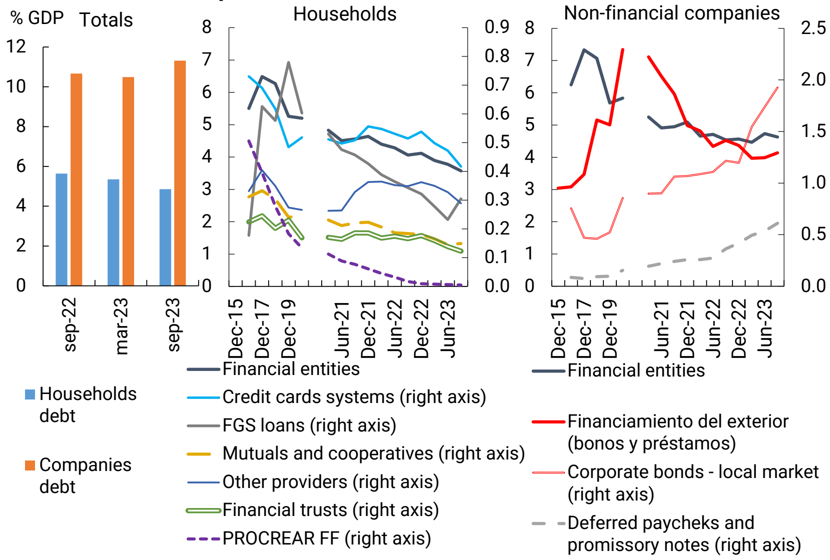
The standards on credit origination (EOC) have remained relatively stable in the last two years. Based on the answers received from the banks participating in the Survey on Credit Conditions (ECC), the standards on credit origination for loans to companies have not posted significant changes in the last eight quarters. In the segment of loans to households, the EOCs have exhibited a bias towards easing —from slight to moderate— in the case of cards and other loans for consumption during the last two quarters; nevertheless, if a longer period is considered (the last two years), the changes observed in the EOCs of the credit lines for households were not significant.

Companies and households are keeping a relatively low indebtedness level in aggregate terms, but have recorded a mixed performance against the trend observed six months ago. The analysis of data about credit in a broad sense[51] shows that, as of September, their estimated stock amounted to a figure equivalent to 11.3% and 4.9% of GDP for companies and households, respectively. These levels are signaling an increase in the case of companies and a slight decrease in the case of households if compared to the values recorded six months ago (see Chart 14 and Exhibit 5) while, in both cases, there has been a reduction against the average observed by the end of each of the last five years. Regarding companies' debt, the increase against the figure recorded six months ago was due to a combination of rises in real terms in the stocks associated to capital market instruments (both Corporate Bonds[52] and promissory notes) and more marginal increases in the stock of the main components (credits from banks to companies and financing from abroad —in this last case, the rise was due to a revaluation of the stocks in dollars). It is worth pointing out that in the specific case of publicly-traded companies (see Box 4), based on data as of the second quarter of 2023, there has been a slight reduction in the median of total leverage against the value recorded six months ago (and a drop in the financial debt-to-results ratio). In turn, the downward trend observed in credit to households from March to September was widespread across the various components (even though the reduction in bank loans —the component with the highest weight— stood out). The only exception was lending granted by the Sustainability Guarantee Fund

51 Stocks as of September 2023 as percentage of GDP and estimated as of the third quarter of 2023, seasonally-adjusted. In addition to the loans provided by the ensemble of financial institutions regulated by the BCRA, this stock includes: financing via the credit card systems, loans granted by mutuals and cooperatives (based on the National Institute of Associations and Social Economy —INAES), lending from other non-banking credit providers registered with the BCRA, financing held in the portfolio of financial trusts not related to infrastructure, loans from the Sustainability Guarantee Fund (FGS) (including the PRO.CRE.AR portfolio), corporate bonds issued by the non-financial private sector under domestic legislation, promissory notes, deferred payment checks, and external financing (based on INDEC) via bonds and loans (excluding credit and commercial advances). For data about external financing (INDEC), the latest data published (June 2023) are used and an adjustment is made on the basis of the exchange rate observed as of September. For mutuals and cooperatives, the analysis has used the information as of June turned into pesos of September using the CPI.
52 A little over one half of the increase in the domestic stock of Corporate Bonds over the period resulted from net issues, while the rest was explained by valuation adjustments. As of September, over 70% of the abovementioned stock of Corporate Bonds consisted in dollar-linked instruments and a little over 10% in securities in dollars.

(FGS), which has posted an increase in real terms in its stock during the abovementioned period. In addition, it is estimated that households have managed to keep a moderate burden of their bank debt service, which was slightly lower than the burden reported in the previous IEF.[53]

Chart 14 | Financing in a broad sense to households and companies
Stock of the main components. As % of GDP



Source: BCRA based on a INDEC, CNV, MAE, MAV, ANSES e INAES

The share of loans to the private sector in foreign currency in total assets continues to stand at relatively low levels. The stock of financing in foreign currency to the private sector accounted for 9.7% of total loans to this sector (in currency of origin), up 1.2 p.p. against the value observed in the previous IEF.[54] However, this level has continued to stand below the average value of the last 20 years (13.9%). The credit risk faced by the ensemble of financial institutions due to their exposure to debtors in foreign currency is limited by the macroprudential regulations.[55]

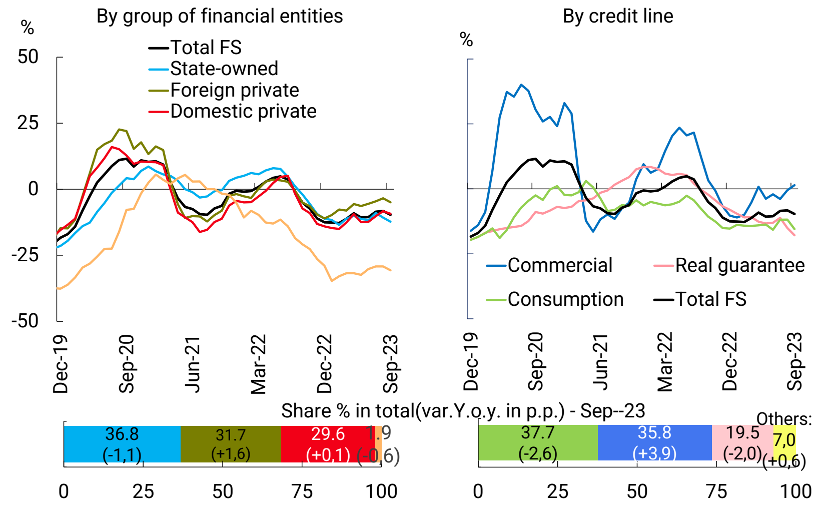
3.2. Evolution of the Financial Intermediation Activity

In the context of a decreasing economic activity at domestic level in the second quarter of the year, due in part to the impact of the draught in late 2022 and early 2023, a higher volatility in the financial markets was observed during the third quarter, characterized by the beginning of the electoral process.[56] In this operational context, there has been a contraction in the financial intermediation activity of the ensemble of financial institutions with the private sector since the publication of the previous IEF and in a year-on year comparison, which resulted in a drop of the stock of credits and deposits in real terms.

53 It is estimated that the bank debt service burden of households stood at 9.4% of the wage bill, slightly below the figure recorded in the previous IEF and in a year-on-year comparison.
54 This increase occurred in a context where the stock of loans expressed in currency of origin has gone up slightly in the last six months (0.6%).
55 In particular, the financial institutions may grant loans in foreign currency exclusively to debtors whose income has a correlation with the exchange rate.
56 For further detail, see the Monetary Policy Report (IPOM).

The stock of loans in pesos to the private sector contracted 5.4% in real terms between March and September of the current year, dropping 9.7% in real terms in a year-on-year comparison. The performance observed in recent months has been widespread across all groups of financial institutions, but it has been mixed across all credit lines. In particular, the stock of commercial loans has posted a slight increase over the period (1.3% in real terms against March and 1.4% y.o.y. in real terms), resulting in a slight rise of their share in the total stock of lending in pesos to the private sector (see Chart 15), supported by the stimulus measures adopted by the BCRA (see Box 2).

Chart 15 | Stock of loans in pesos to the private sector – Year-on-year % changes in real terms*- Financial system



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

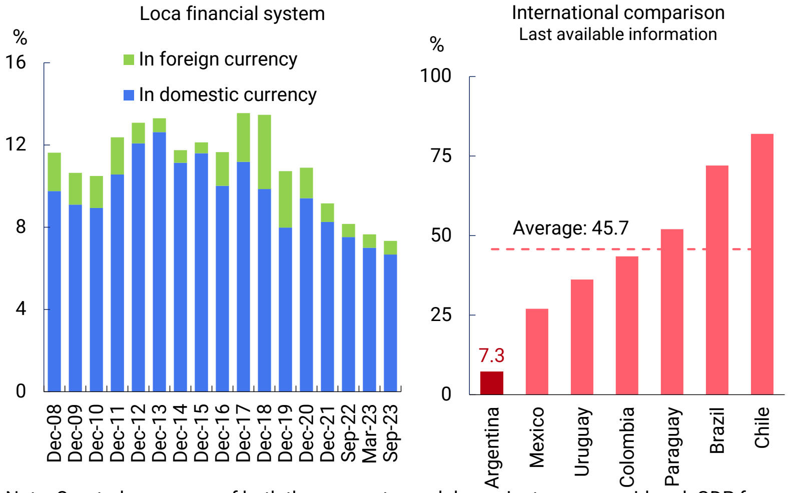
Throughout 2023, bank loans have exhibited a limited depth in the economy. The financial system's stock of loans to the private sector stood at 7.3% of GDP (6.7% in domestic currency, see Chart 16), and it has dropped slightly in the last six months and also in year-on-year terms. These levels are standing below the domestic average value of recent years (11.4% in the last 15 years), and they are relatively lower than the values of other economies of the region (average of 45.7%).

Regarding the sector's funding in domestic currency, the stock of private sector deposits in pesos contracted 6.7% in real terms from March to September, down 6.2% in real terms in a year-on-year comparison. This performance was mainly observed in time deposits and, to a lesser extent, in sight accounts (for further detail, see Section 3.3).[57]

Regarding the segment in foreign currency and considering data available as of September, the stock of loans to the private sector did not post significant changes against the previous IEF, but it has gone up in year-on-year terms (3.5% y.o.y. in currency of origin). In turn, the stock of private sector deposits in the same denomination dropped 7% in the aggregate of the last six months up to September, posting no significant changes in year-on-year terms.[58]

57 This performance of the private sector deposits in pesos continued in October. For further detail, see the Monthly Monetary Report .
58 In October, private sector deposits in foreign currency dropped again, while lending in the same denomination remained stable. For further detail, see the Monthly Monetary Report .

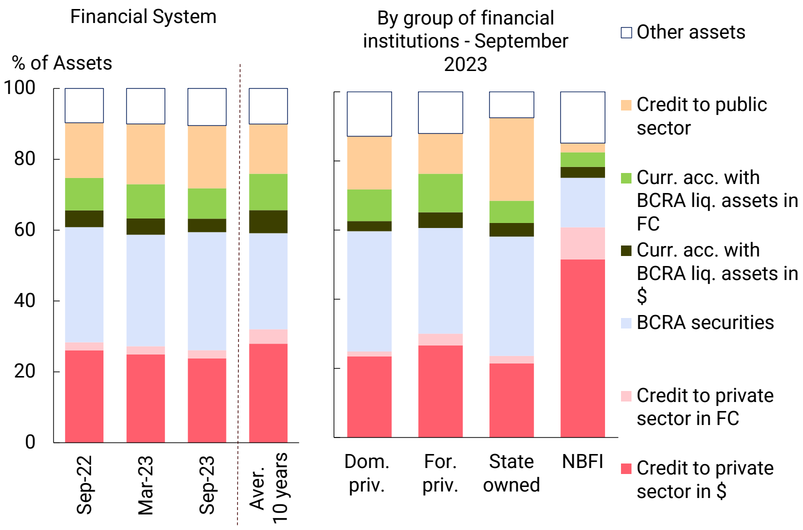
Chart 16 | Stock of bank loans to the private sector in GDP terms



Note: Quarterly averages of both the numerator and denominator are considered. GDP for September 2023 estimated. Source: INDEC, IMF (IFS y FSI) and BCRA.

The size of the financial system's balance sheet at aggregate level has not posted significant changes since the publication of the previous IEF (considering the stock of total assets in real terms) and in year-on-year terms (-0.7% in real terms and -0.9% in real terms, respectively). Regarding the components of assets, there has been an increase in the share of BCRA's instrument holdings and, to a lesser extent, of the stock of loans to the public sector (see Chart 17). BCRA's instruments were used to sterilize the surplus of liquidity within a context of higher financing from the BCRA to the National Treasury, associated to the various social aid programs implemented by the Executive Branch. In turn, there was a lower share of the remaining items making up the financial system's total stock of assets.

Chart 17 | Composition of total assets by items



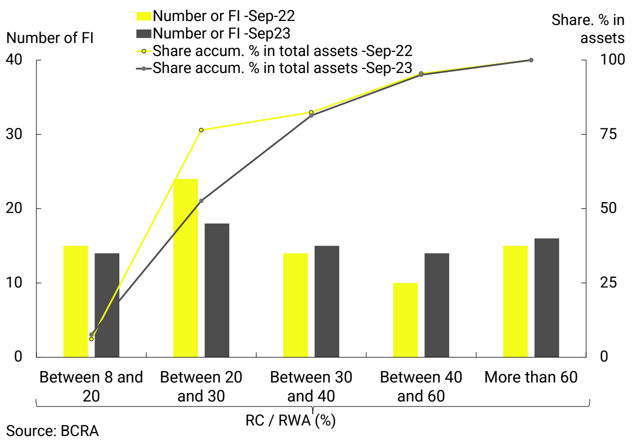
Source: BCRA

In early 2024, the ensemble of financial institutions would continue operating in a challenging scenario, and the likelihood that stress episodes might impact on the financial markets and on the economic activity level, at both domestic and international level, cannot be disregarded. Thus, the performance of the financial intermediation activity will continue to be conditioned by the eventual materialization of the abovementioned risk factors, with a potential impact on some components of the financial system's results and solvency.

3.2.1. Elements of Resilience and Mitigating Measures:

Positive profitability ratios at aggregate level. In the aggregate of the last 12 months up to September, the financial system has accrued a total comprehensive income —measured in homogeneous currency— equivalent to 3.2% of assets (ROA) and to 17.2% of equity (ROE). These levels have stood above the levels recorded in the previous IEF and also above the levels observed in the same period of 2022 (see Table 2). The year-on-year increase of profitability resulted from a higher financial margin, lessened by increasing losses due to exposure to monetary items and to expenditures for tax burdens, among other factors. Upon considering all groups of financial institutions and within a context characterized by high solvency indicators across the board, there was some heterogeneity in the profitability levels throughout 2023 (which were positive for all bank groups and negative for non-banking financial institutions; see Chart 18).

Chart 18 | Financial system's solvency
Distribution of the Regulatory Capital (RC)-to-Risk-Weighted Assets (RWAs) ratio across financial institutions



Source: BCRA

Table 2 – Financial system's profitability chart

	12 months accumulated to...		
In %a. of netted assets	Sep-22	Mar-23	Sep-23
Financial margin	**15.1**	**18.5**	**23.2**
Interest income	8.8	10.2	11.9
CER and CVS adjustments	1.6	1.9	2.5
Foreign exchange price adjustments	1.0	2.3	4.4
Gains on securities	14.9	22.0	27.7
Returns on repo	2.8	3.2	6.1
Interest expense	-14.1	-21.0	-29.3
Service income margin	**1.9**	**1.8**	**1.6**
Loan loss provisions	**-0.8**	**-0.9**	**-0.9**
Operating costs	**-6.6**	**-6.8**	**-7.0**
Net Monetary Position	**-6.1**	**-7.8**	**-10.1**
Tax charges	**-1.9**	**-2.5**	**-3.7**
Other Comprehensive Income (OCI)	**-0.2**	**-0.1**	**0.0**
Return on assets (ROA)	**1.5**	**2.3**	**3.2**
Return on equity (ROE)	**8.9**	**12.7**	**17.2**

Source: BCRA

Micro and macroprudential regulation and supervision in line with the international recommendations. Throughout 2023, the BCRA has continued to be focused on the identification and follow-up of the risks faced by the aggregate financial system and the sector's vulnerability sources. Simultaneously, the monetary authority has kept on assessing the impact of potential adverse scenarios and designing alternatives to deal with them. On a supplementary basis, the Superintendence of Financial and Exchange Institutions (SEFyC) has strengthened its focus on the supervision of the financial institutions' risks.

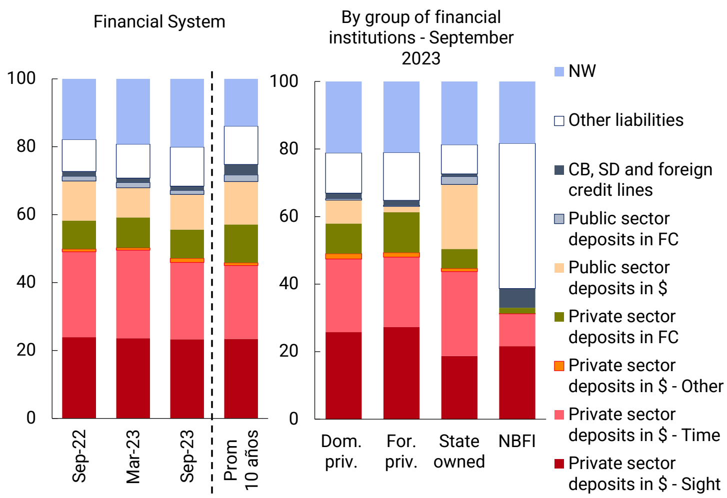
Credit policy focused on providing special assistance for the development of Micro, Small and Medium-Sized Enterprises (MSMEs). In recent years, the "Credit Line for Productive Investment (LFIP)" became the main tool to channel bank loans to MSMEs. In October, in order to continue supporting the development of these enterprises, the BCRA extended the LFIP up to the closing date of the first quarter of 2024, keeping conditions similar to the ones currently in force (see Box 2).

3.3. Financial System's Funding and Liquidity

As mentioned at the beginning of this Section, the private sector stock of deposits in pesos in real terms contracted against the previous IEF (-6.7% between March and September), mainly due to the performance of time deposits (-13.5% in real terms) and, to a lesser extent, of sight accounts (-2% in real terms).

As a result of the abovementioned changes, there was a decrease in the relative share of private sector deposits in pesos in the aggregate total funding structure of the financial system (liabilities and net worth) against the values recorded in the previous IEF, accounting for little less than one half of the total as of September. Despite this decrease, private sector deposits in pesos continued to be the most relevant funding source of the ensemble of financial institutions —a typical characteristic of this sector (see Chart 19). In addition, and against March 2023, there was an increase in the relative share of public sector deposits in domestic currency and of net worth in the financial system's total funding.

Chart 19 | Composition of the financial system's funding
As % of total funding (liabilities + net worth)



Source: BCRA

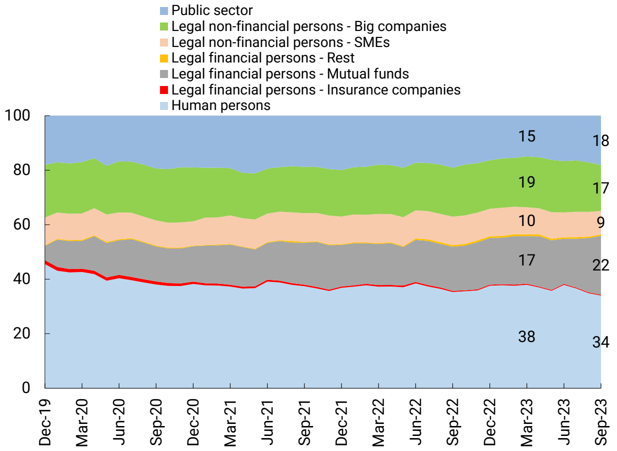
In the framework of the evolution of the ratios subject to monitoring, there has been a slight upward bias towards an increase in the exposure to the aggregate liquidity risk taken by the institutions as a whole in recent months. On the one hand, the average volatility of deposits in pesos went up,[59] as evidenced by the reduction in the share of deposits made by retail natural persons —the depositors whose aggregate stock is relatively more stable— in the total stock of deposits during the last six months (see Chart 20). Conversely, there was an increase in the relative share of large institutional investors (such as Mutual Funds), in line with a slight bias towards a higher concentration of deposits.

On the other hand, an additional signal of a higher exposure to the aggregate liquidity risk came from a slight shortening of the maturity term of deposits in domestic currency (see Chart 21), in

59 The ratio that summarizes this aspect is built by weighting the coefficient of variation of each group of depositors' stock in real terms against the relative weight of each stock.

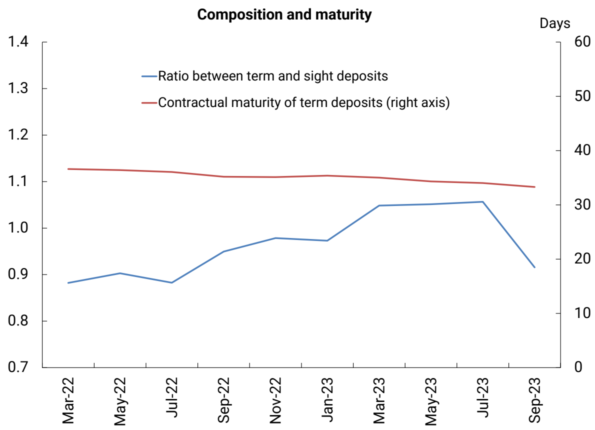
line with a relatively weaker performance of private sector time deposits in pesos in recent months, if compared to the evolution observed in sight accounts.

Chart 20 | Deposits in domestic currency
Share % by type of depositor – Financial system



Source: BCRA

Chart 21 | Deposits in domestic currency
Financial system



Source: BCRA

An eventual materialization of the risk factors mentioned in Section 2 might adversely affect both the level and the composition of the financial institutions' funding. The specific elements of the financial system's resilience to respond to such eventual stress episodes are described below.

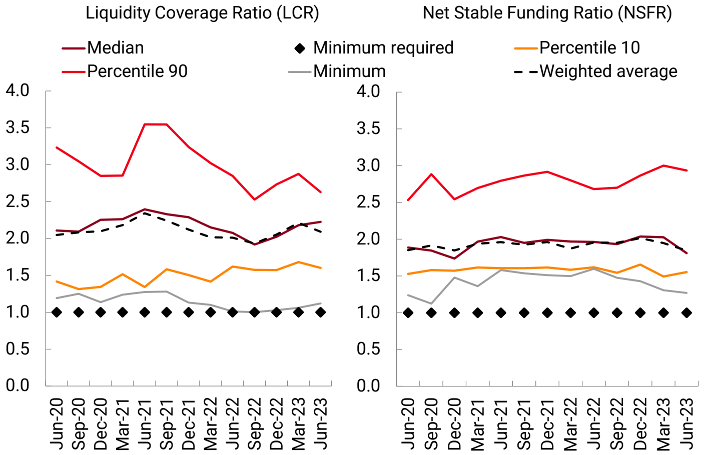
3.3.1. Elements of Resilience and Mitigating Measures:

High aggregate ratios in terms of liquidity coverage. The current liquidity coverage in a broad sense for the financial system (80.9% of total deposits) continued exceeding the average value of recent years,[60] and also the records of other economies of the region.[61] The coverages of deposits with liquid assets continued to be sizable in the segments of both domestic and foreign currency.[62] Against the previous IEF, the broad liquidity ratio went up due to the items in domestic currency — mainly because of the higher share of net repo transactions with the BCRA and of sovereign bonds admitted for compliance with the minimum cash requirement.

Liquidity ratios resulting from the prudential regulatory framework, in line with the recommendations of the Basel Committee, stood at sizable levels across the ensemble of domestic financial institutions subject to compliance with such requirements (see Chart 22). In particular, the current figures of both the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR) have virtually doubled the minimum values required at local level (set at 1 for both ratios), in a context where all institutions have stood above such regulatory minimum threshold.

60 It considers liquid assets, BCRA's instruments in domestic and foreign currency and all sovereign bonds admitted for compliance with the minimum cash requirement. This ratio stood at 55.9% in the average of the last 10 years and reached 51% in terms of the median of the last 15 years.
61 The liquidity-to-deposits ratio for the average of the regional financial systems (Peru, Mexico, Brazil and Colombia) stood at around 33.5% (median of 31.3%), according to the latest information available (IMF).
62 The liquidity ratio for the items in pesos totaled 79.8% and the ratio for the items in foreign currency stood at 86.7%.

Chart 22 | Basel liquidity ratios
Institutions belonging to Group A

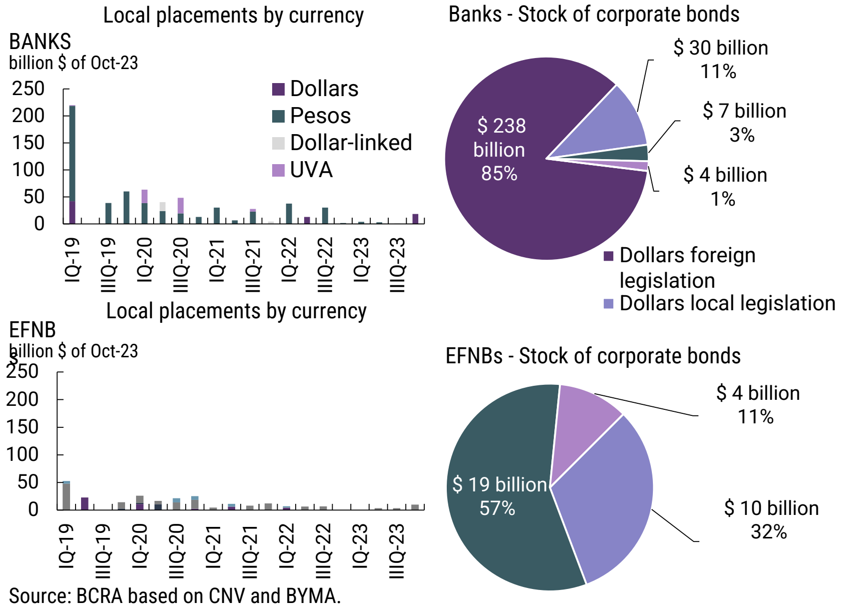


Note: The regulated entities belong to group A (Communication "A" 7651) and represented 89.1% of assets in Jun-23. Source: BCRA

There were limited financing transactions through the capital market by the financial system's agents in recent months, resulting in a decreasing share in total funding in aggregate terms. As of September, the stock of publicly-traded Corporate Bonds has accounted for 0.65% of the financial system's total funding, standing slightly above the value observed in the previous IEF (0.5%). As of October, the stock of outstanding bonds issued by the institutions subject to the regulatory scope of the BCRA is estimated to be equivalent to ARS312.8 billion.[63] From July to October, the issues of Corporate Bonds in the domestic market amounted to ARS33 billion (during a period with maturities for ARS14.1 billion, corresponding in all cases to domestic bonds) via four transactions, while the highest part of the amount corresponded to a bond in dollars equivalent to ARS19 billion[64] (see Chart 23). The amount issued entailed an increase against the previous four-month period of ARS22.1 billion in constant currency and a year-on-year drop of over 10% in the same currency, in line with the downward trend observed since 2019. For the first half of 2024, amortizations for ARS23.5 billion are currently expected (equivalent to 8% of the Corporate Bonds stock), consisting in four domestic payments in dollars (76% of the amortizations estimated for the six-month period), followed by payments in pesos. Even though the financial system's stock of Corporate Bonds is largely denominated in dollars, the most relevant payments in this currency will largely occur in the second half of 2026.[65] Lastly, regarding financing via securitizations, there were no issues of Financial Trusts (FF) by banks from July to October, compared to issues for ARS1.23 billion in the first half of the year and for ARS1.7 billion in the second half of 2022.

63 Out of a total of 77 institutions, 8 banks (in general, large or medium-sized institutions) and 6 non-banking financial institutions (EFNBs) have outstanding publicly-traded Corporate Bonds. In addition, two banks currently have Corporate Bonds in their liabilities issued privately for an amount of USD260 million.
64 The issues consisted in two Corporate Bonds from EFNBs for ARS13.68 billion and two Corporate Bonds of banks for ARS585 million and USD53 million, respectively (the latest Corporate Bond issued by institutions of the financial system occurred in May 2022). Only two institutions that issue new bonds had payments in the same period (11 institutions had maturities from July to October).
65 These bonds correspond to transactions subject to international law carried out in 2016, with an outstanding stock pertaining to two institutions.

Chart 23 | Genuine Corporate Bonds (domestic and foreign legislation) of Banks and EFNBs as of October 2023



Source: BCRA based on CNV and BYMA.

Lastly, **the effective role of the BCRA as lender of last resort in domestic currency in the face of specific cases** is an additional feature to be highlighted against the liquidity risk.

Box 4 / Financial Situation of Publicly-Traded Companies

Upon analyzing the balance sheets of publicly-traded companies,[66] it is observed that the medians of the main financial ratios have tended to improve as of the second quarter of 2023 (even though with some exceptions) in year-to-date terms (compared to the values recorded six months ago) and in year-on-year terms. The final profitability measured in terms of equity (ROE) went up against the fourth quarter of 2022 (see Table B.4.1), keeping a largely positive trend since mid-2021. If compared to the values recorded six months ago, the increase observed in the ROE occurred in a context of improvement of two of its main components (the final profitability margin and the assets turnover), simultaneously with a decline in total leverage (during a period when the short-term debt burden dropped relative to the total financial debt).[67] Even though there was an improvement in the final profitability margin, the operating margin contracted and resulted, in turn, in a deterioration of the interest coverage using earnings (this ratio is usually associated with the credit risk). In turn, there was a slight improvement in the liquidity acid-test ratio (current assets to current liabilities net of stocks) against the fourth quarter of 2022. Lastly, a decline has been observed in foreign currency mismatch (assets minus liabilities in such currency), expressed as percentage of total assets.

Table B.4.1 | Publicly-traded companies – Selected ratios

	Quarters											
Selected indicators (median values):	**IV-19**	**IV-20**	**I-21**	**II-21**	**III-21**	**IV-21**	**I-22**	**II-22**	**III-22**	**IV-22**	**I-23**	**II-23**
ROE: final results / net worth (%)	4.4	6.1	7.5	3.6	2.9	8.3	8.0	13.1	13.3	13.4	10.6	14.7
Net profits margin: final results / sales (%)	2.3	4.9	7.1	2.5	2.0	3.6	4.6	7.3	6.7	8.9	9.1	12.2
Net operating margin: operating results / sales (%)	7.8	10.2	10.7	10.0	10.0	11.3	10.2	11.7	12.1	10.7	11.7	9.3
Assets turnover: sales / assets	65.3	46.6	46.3	46.2	47.5	48.6	49.2	48.7	48.4	44.5	46.2	45.4
Leverage: assets / net worth (%)	237.7	233.9	223.1	243.2	232.9	227.5	217.9	218.3	208.4	212.6	201.2	199.6
Acid test: (current assets - inventory) / current liabilities (%)	87.0	87.1	87.8	90.2	92.3	87.3	92.1	85.9	83.2	84.5	92.0	85.3
Interest coverage: operational results / paid interests	1.5	1.4	1.5	1.4	1.5	1.9	1.9	2.2	2.3	1.8	1.9	1.1
Financial debt term: short-term financial debt / total financial debt (%)	50.2	48.6	48.1	37.5	35.5	36.0	38.7	42.8	40.3	46.3	38.2	42.6
Currency mismatch: (foreign currency assets - foreign currency liabilities) / total assets (%)	-9.2	-8.5	-8.3	-8.7	-8.5	-7.4	-6.2	-5.5	-5.9	-10.0	-5.4	-8.1
Number of companies observed	**130**	**126**	**125**	**125**	**124**	**125**	**124**	**127**	**125**	**126**	**125**	**124**

Note: for those indicators that contain flow and stock variables, flow variables are taken as the sum of the last 4 quarters, while stock variables are taken as the average of those same quarters. For the remaining indicators, the value at the end of the quarter is considered.

Source: BCRA based on CNV/BCBA.

Using a simplified methodology based on three ratios (leverage, liquidity acid test and interest coverage),[68] it is possible to proxy the companies' condition for the purpose of identifying firms in a potentially vulnerable situation and analyzing their connectedness with the financial system in aggregate terms. The number of companies in such potential vulnerability estimated according to this method (15 out of a total of 124 firms) has posted no changes against the values recorded six

66 Even though these data are taken as a first proxy to the situation of the corporate sector, it must be considered that publicly-traded companies are usually characterized by a large/medium relative size (in terms of their assets and in relative terms at domestic level). For further detail about coverage and methodology, see the sections on "Financial Situation of the Corporate Sector" in IEF I-17, and "Financial Situation of Publicly-Traded Companies" in IEF I-19.
67 The ROE may be analyzed on the basis of three components: profitability margin, assets turnover and leverage. It is worth mentioning that, as of the second quarter of 2023, the financial debt-to-results ratio has also dropped against the ratio observed six months ago.
68 For further detail, see the "Financial Situation of Publicly-Traded Companies" in IEF I-19.

months ago, while the financial system's exposure to these companies continues to be limited (only 2.7% of the total stock of loans granted by the financial system is intended for potentially vulnerable firms).

4. Other Matters of the Financial System Stability

4.1 Domestic Systemically Important Banks (DSIBs)

Based on a risk macroprudential approach, the BCRA has implemented in recent years a distinctive monitoring on some financial institutions, taking into account their higher relative importance. In order to define these financial institutions, which are domestic systemically important banks (DSIBs), a methodology was timely adopted that addresses various dimensions of these institutions in order to capture their distinctive characteristics in terms of size, interconnectedness, complexity and degree of substitutability of the activities they are involved in.[69] In addition, DSIBs are required to comply with a higher capital conservation buffer than the remaining institutions, amounting to 1% of the risk-weighted assets (RWAs) above the percentage required to the other institutions (2.5% of the RWAs).

Considering the relative size, the total stock of assets of the DSIBs group accounted for 54.4% of the financial system's total assets as of September 2023, and this share has not changed significantly since the publication of the previous IEF.

In turn, taking into consideration the soundness ratios for the group of DSIBs, the broad liquidity ratios went up against the values reported in the previous IEF and in a year-on-year comparison (see Table 3), starting from slightly lower levels than those recorded for the rest of the financial system. In turn, the solvency and profitability ratios for the ensemble of DSIBs have also gone up slightly since the publication of the previous IEF and in year-on-year terms.

Table 3 | Main ratios of DSIBs soundness

	Sep-22	Mar-23	Sep-23
Liquidity			
Broad liquidity (%)	65.9	72.2	76.8
In $	61.4	68.6	73.5
In US$	94.1	91.6	95.8
Liquidity Coverage Ratio (1)	1.9	2.1	2.0
Net Stable Funding Ratio (1)	1.8	1.8	1.6
Solvency			
Regulatory capital / RWA (%)	27.2	29.5	30.6
Regulatory capital / Loans net of provisions (%)	54.3	60.0	65.8
Excess regulatory capital / Loans net of provisions (%)	38.6	44.2	49.0
Leverage ratio (1)	15.4	16.3	17.7
Profitability			
ROE in homogeneous currency (%a.) (2)	13.3	15.4	20.4
Private sector credit			
Exposure / Assets (%)	30.8	29.9	28.5
Non-performing loan ratio (%)	3.5	3.9	4.0
Provisions / Loans to the private sector (%)	4.6	4.9	4.6
Public sector credit			
Exposure / Assets (%) (3)	19.9	21.5	24.3
Foreign currency position			
(Assets - Liabilities + Net undelivered purchases in foreign currency) / Regulatory capital (%)	36.5	44.3	51.0

(1) Jun-23 last available data. (2) 12-month accumulated. (3) Position in government securities (excluding BCRA securities) + Loans to the public sector.

RWA: Risk weighted assets

Source: BCRA

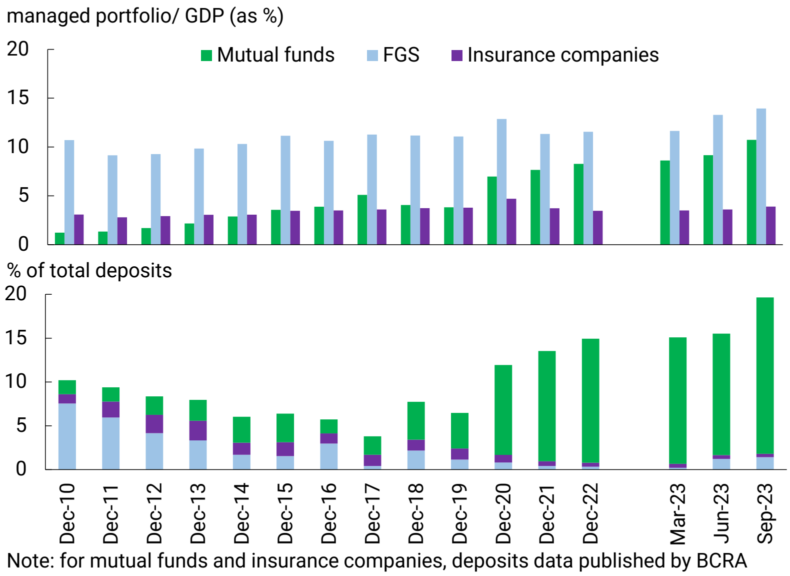
69 For further detail about the methodology following the international guidelines, see here.

Credit exposure of the DSIBs group to the private sector has dropped if compared to the previous IEF and in year-on-year terms, starting from slightly higher levels than the rest of the system. The non-performing ratio has gone up slightly in a year-on-year comparison (posting no significant changes against the previous IEF), standing at slightly higher levels than those observed in the rest of the financial system. However, for this group of banks, the capital position in terms of loans to the private sector (net of provisions) went up in a year-on-year comparison, standing within a range of values above the average of the last 10 years.

4.2 Interconnectedness in the Financial System

The call money market (unsecured inter-financial loans) is one of the spaces whereby financial institutions interconnect with one another in a direct way. The amounts traded in this market on a daily basis continued to drop in real terms in recent months (-14% if the monthly average traded from July to October is compared to the average value of the previous four months), a decline that is also observed, in comparative terms, in the financial system's private sector deposits (within a context of increasing monetary policy rates and time deposits). The relative size of this market has continued to shrink, in line with what has been observed in recent years. The ratios surveyed in the framework of the network analysis estimated for the call market give rise to dissimilar results. On the one hand, there has been a reduction in the number of nodes (financial institutions participanting in the market) which has gone from 43 to 39 (on average) if we compare the March-June period against the July-October period of 2023, but the diameter and the average distance have increased (from 196 to 225 and from 52 to 58, respectively). Nevertheless, even though the number of linkages has dropped (from 599 to 566), this entails a higher average degree in the network (it goes from 1.8 to 2), given the drop in the number of nodes. All of the above, added to the increasing density and the reciprocity of the network (from 32.3% to 32.9% and from 6.7% to 7.1%, respectively), gives rise to movements associated, in general, with stress episodes in the market. Similar performances are observed in the year-on-year comparison.

Chart 24 | Portfolio of institutional investors and share of their depostis in the financial system's funding



Note: for mutual funds and insurance companies, deposits data published by BCRA are used. Source: BCRA based on FGS, SSN and CAFCI.

Regarding the direct interconnectedness between the financial system and the main institutional investors, the main source of interconnectedness derives from the deposits made by institutional investors in financial institutions (sight accounts and time deposits). These deposits have been showing an upward trend for several years but this trend has intensified in recent months. Proof of this is that the institutional investors' deposits in the domestic financial system that accounted for 15.5% of total deposits in June 2023 ended up accounting for 19.7% in September 2023 (see Chart 24). Considering a longer-term evolution, the value of this ratio must be compared against values of 8.5% on average by the end of the year in the last 10-year period. This evolution has been mainly explained by the growth of the Mutual Funds portfolio since 2020, especially with reference to Money Market Mutual Funds (FCI MMs), with investments focused on sight accounts and time deposits.

Regarding the most recent performance of the Money Market Mutual Funds, the portfolio under management has grown 77.8% in nominal terms and 21.8% in real terms from the end of June to the closing date of October 2023, exceeding the net worth growth of the industry as a whole (70.0% in nominal terms and 16.4% in real terms, respectively). Consequently, there has been a 2.1 p.p. increase in the share of the Money Market Mutual Funds in the industry, which is now accounting for 53.4% of the total. The new underwritings (net of redemptions) of the Money Market Mutual Funds have accounted for 70% of the industry's income in a period that, as mentioned above, was characterized by volatility in the financial markets due to the ongoing electoral process. Investments of the Money Market Mutual Funds have shifted towards more liquid instruments over the period, especially sight deposits (mostly remunerated deposits), which have grown more than time deposits and accounted for 80% and 17% of the net worth increase, respectively.

Using granular information on these investments and based on the analysis of the network and concentration indicators, a study was performed on the direct interconnectedness in relation with the deposits of the Money Market Mutual Funds in the financial institutions, grouped by management company (SG) (see Table 4). Based on the indicators under analysis, a dissimilar performance has been observed during the last quarter. That notwithstanding, the interconnectedness has tended to go up since December 2019. Global indicators lead to conclusions in line with the abovementioned, signaling a quarterly rise in the weight of deposits grouped by management company in the industry's net worth (from 44% in June to 49% in September) and in the Money Market Mutual Funds' net worth in particular (from 88% to 91%). If total deposits of the Non-Financial Private Sector (SPNF) are taken as denominator, the deposits of management companies accounted for 23% in September, from 18% in June. Over the same period, there has been slight increase in the number of financial institutions (EF) with deposits from at least one management company (from 41 to 43), while the number of management companies has remained constant (40). At the same time, there was a reduction in the number of linkages (from 551 to 536) which, on average, have a larger size (ARS14.5 billion in September against ARS11.7 billion in June at constant currency of September 2023). This would entail a slightly less dense network (the links observed against the potential links have fallen from 34% to 31%). There is also a higher concentration measured as the share of the top 10 management companies' deposits in the SPNF's total deposits (from 14% to 17%) and also on the basis of the Herfindahl

Index (from 8% to 10%). The number of financial institutions with which each management company operates has remained stable at 15 (the median is considered in this case), even though the relevance of the management companies' funding in each financial institution has contracted slightly at aggregate level, going from 19% to 18%, relative to SPNF's total deposits.

Table 4 | Direct interconnectedness indicators between deposits of Money Market Mutual Funds grouped by management company and the financial institutions
Amounts expressed in ARS billions of September 2023

Indicator description	Dec-19	Dec-20	Dec-21	Dec-22	Mar-23	Jun-23	Sep-23
Deposits of fund management companies / total balance of mutual funds	20%	41%	43%	45%	47%	44%	49%
Deposits of fund management companies / total balance of MM mutual funds	48%	89%	92%	88%	90%	88%	91%
Deposits of fund management companies / total deposits non-financial private sector	4%	12%	16%	17%	18%	18%	23%
Quantity of financial entities with deposits of at least one fund management company (a)	31	34	40	43	42	41	43
Quantity of fund management companies (b)	24	31	35	37	39	40	40
Total observed links (higher than $100 thousand) (c)	213	396	488	541	546	551	536
Observed links/ possible (c)/((a)*(b))	29%	38%	35%	34%	33%	34%	31%
Average deposit amount (link)	$ 6.6	$ 12.1	$ 12.6	$ 11.9	$ 12.2	$ 11.7	$ 14.5
% of top 10 fund management companies / total deposits non-financial private sector	3%	9%	12%	13%	14%	14%	17%
Herfindahl index*	15%	8%	8%	9%	10%	8%	10%
Quantity of financial entities for each fund management company, median	9	13	15	15	14	15	15
Deposits of fund management companies / deposits of non-financial private sector for each financial entity**, median	5%	13%	16%	19%	20%	19%	18%
Size of each link / deposits of non-financial private sector for each financial entity***, median	0.37%	0.75%	0.82%	0.69%	0.75%	0.70%	0.73%

Note: sight deposits and term operations (only time deposits, excluding BCRA swaps and guaranteed securities). *The Herfindahl-Hirschman index is calculated as the sum of the square of the participation of each entity in the total Money Market mutual funds deposits, indicating greater concentration the higher the value obtained. **For each entity: sum of deposits of all fund management companies as % of deposits from non-financial private sector in that entity. ***Amount of deposits of each fund management company (individually) as % of deposits from non-financial private sector in that entity . Note: Observed links (c): number of deposits of Money Market mutual funds grouped by fund management companies in financial entities. Possible links: product between number of financial entities with deposits of at least one fund management company and number of fund management companies of Money Market mutual funds ((a)*(b)).

Source: BCRA based on CAFCI and BCRA.

5. Main Macroprudential Policy Measures

In the second part of 2023, the BCRA has continued monitoring the performance of the financial system and implementing micro and macroprudential policy measures. The main measures adopted since the publication of the previous IEF have been intended to:

i. Continue fostering the credit policy focused on productive development by means of resources mainly channeled to companies of a smaller relative size through the Credit Line for Productive Investment (LFIP) of Micro, Small and Medium-Sized Enterprises (MSMEs). In October, a new quota of the LFIP was launched (Quota 2023/2024), keeping conditions similar to the ones currently in force.

ii. Strengthen the incentive for saving in pesos in the system. The minimum guaranteed interest rates on time deposits in domestic currency were raised. In addition, new uses of saving accounts were launched for authorized underaged (see Regulatory Annex).

iii. Continue managing the financial system's liquidity and keeping adequate solvency levels, allowing for a regular operation of the intermediation activities and the supply of payment services.

iv. Gauge the exchange rate regulatory scheme in order to favor an efficient allocation of international reserves. In particular, the BCRA promoted the opening of dollar-link accounts for exporters and importing MSMEs.

v. Reinforce and improve the use of electronic means of payment. The BCRA established that the Payment Service Providers Offering Payment Accounts (PSPOCPs) are required to transfer to their clients the compensations received for the balances in pesos of sight accounts held at financial institutions. Some changes were introduced to recurrent Immediate Debit Transfers (DEBINs) in order to improve users' adherence to the process (see Regulatory Annex). At the same time, the process for the implementation of standards to improve the financial system's cyber resilience is currently in progress.

vi. Move gradually forward in the identification and assessment of climate risk impacts at the level of individual institutions and for the financial system as a whole (see Exhibit 2).

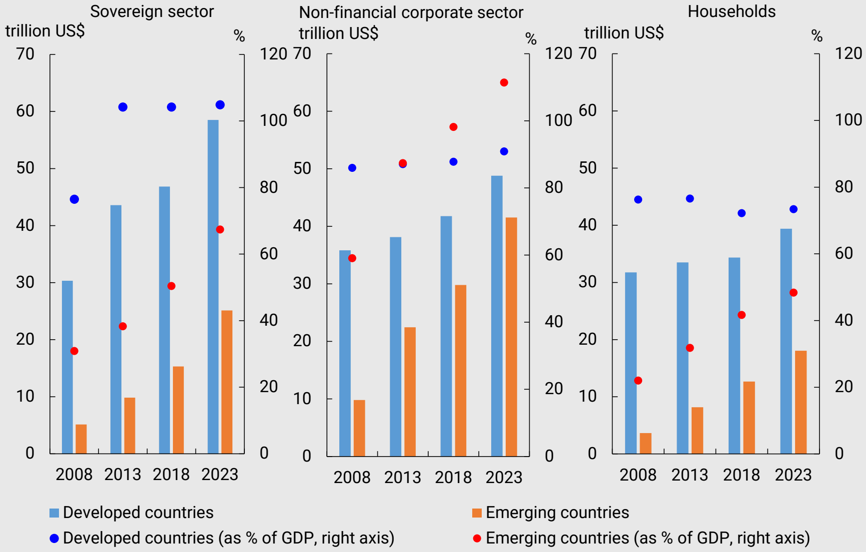
vii. Continue advancing in the monitoring of crypto-assets use, with a special emphasis on the implications and risks they involve for both users and the financial system as a whole (see Box 3).

viii. In a context of declining credit to the private sector (see Section 3), no changes were introduced to the level of Countercyclical Capital Buffer to be complied by financial institutions (at 0%).

Exhibit 1 / Increasing Indebtedness and Interest Rate Rises in International Markets: The Case of Emerging Economies' Corporate Debt

The increase of aggregate indebtedness to levels considered to be historically high in general is one of the main sources of vulnerability at global level after the international financial crisis of 2008-2009.[70] Even though with some heterogeneity across countries and regions, a higher level of indebtedness was observed in both developed and emerging economies and across all sectors. Even though starting from more limited stocks of debt, the growth of emerging economies' debt in aggregate terms is especially remarkable, mainly in relation to the corporate segment (which has the highest volume for these countries, see Chart E.1.1). The abovementioned trend coincides with the boom of bond issue by emerging economies' companies in the international markets during the 2012-2021 period (especially in Asia, which accounts for around 60% of total bonds issued over this period). In general, the increasing indebtedness has been accompanied by a higher leverage,[71] rendering enterprises more vulnerable in the face of a shock. In the specific case of emerging economies, there are also additional considerations given the existence, in some cases, of currency mismatches (being the US dollar the prevailing currency across the international issues made by companies[72]) and the increasing relevance of the conditions of access to the international market in order to refinance the existing bonds (given the higher weight of the debt via bonds).[73]

Chart E.1.1 | Indebtedness level by sector



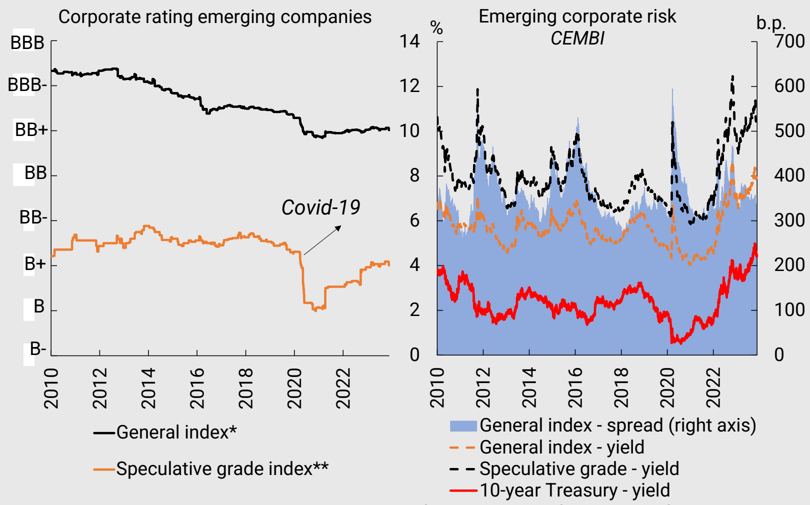
Note: debt level includes both bank and non-bank debt, as well as both local and international debt.
Source: BCRA based on BIS.

70 These sources of vulnerability have worsened in a context of abundant liquidity in the international markets and historically-low interest rates. This configuration of vulnerability factors gained special relevance after the shock caused by the onset of the COVID-19 pandemic. See Exhibit on "COVID-19 and risks to financial stability in emerging economies" in IEF II-20 and Box on "Main vulnerabilities of the global economy" in IEF I-22.
71 See, for example, "*Growth of global corporate debt: main facts and policy challenges*" (World Bank, 2020) or "*Corporate leverage in EMEs: Did the global financial crisis change the determinants?*" (BIS, 2017).
72 Issues in dollars account for around 90% of the amount issued in such period. It is worth mentioning that issues by the non-financial private sector were mainly explained by the oil & gas sector, the real estate business and the basic materials segment.
73 Even though, in general, corporate debt issues in international markets have been made for the medium and long term. In the past decade, corporate issues had an average term of 8 years; the terms have shortened from an average of 10 years in 2013-2015 to an average of 7.5 years in 2020-2022.

This source of vulnerability has worsened in recent years, within a context of interest rate rises in the international markets (considering also the degree of uncertainty about the duration and intensity of this cycle of monetary policy interest rate rises in developed economies), appreciation of the US dollar and focus on deteriorated growth expectations worldwide (impacting on both the activity level of emerging economies —and the profitability of their companies— and on commodity prices).[74] In addition, investment funds have been playing an increasing role in international markets (which coincides with the boom of emerging economies' debt issues).[75] These funds create a greater interconnectedness across sectors and regions, affecting portfolio flows and amplifying the financial cycle at global level, which limits the possibility of refinancing the emerging countries' debts in more uncertain contexts (especially for countries not rated as *investment grade*).

Consequently, the overspread of emerging countries' corporate bonds issued in dollars in the international markets shows a variable behavior, within a context of a higher expected volatility for the US Treasuries. The overspread of the Corporate Emerging Markets Bond Index (CEMBI) in aggregate terms has tended to go up since the second half of 2021 (in line with the rise in the yields of the 10-year Treasuries) even though, by the end of 2022, it exhibited a downward trend to a level slightly below the average of the last 20 years (see Chart E.1.2). In turn, the outlook about the counterparty risk of the emerging economies' corporate debt, measured via their rating, has deteriorated since 2012, even though posting some improvement on the margin after the end of the restrictions imposed by the COVID-19 pandemic.

Chart E.2.2 | Evolution of the emerging countries' corporate risk



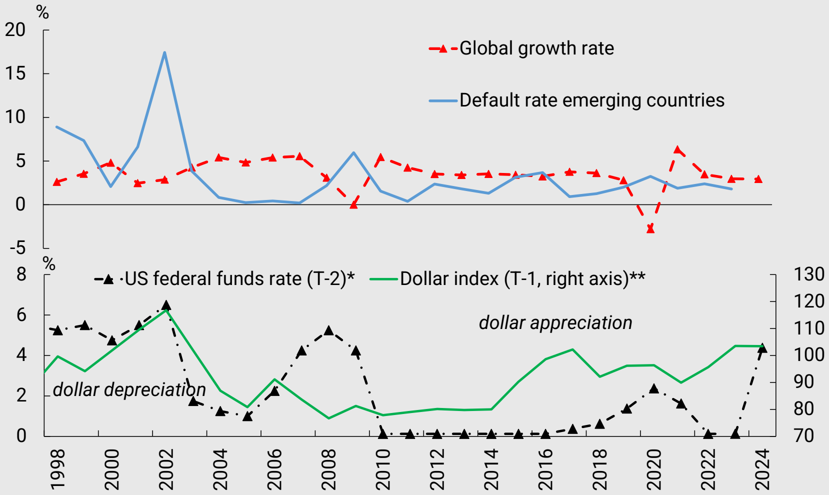
*Dataset constructed based on a simple average of credit ratings of companies from 36 countries. **Dataset constructed based on a simple average of credit ratings of speculative grade companies from 18 countries.
Source: BCRA based on Bloomberg.

Despite this, there has not been a noticeable increase in default rates for bonds of emerging economies' companies (see Chart E.1.3) which, in aggregate terms, are standing below their historical average and are clearly lower than the rates observed in the relative peaks of the last two decades (for example, in 2001, 2009 or 2020, coinciding with the relative peaks in the cases of debt default at global level). In historical terms, the highest increase in credit events usually occurs in

74 See Exhibit on "Monetary Policy Interest Rate Rises in Developed Economies and the Impact on Financial Markets of Emerging Economies" in IEF II-22.
75 Based on data by EPFR, managed assets of funds specializing in emerging countries went up over 60% between 2016 and 2023.

contexts of a declining growth rate at global level, but with a lag if compared to the interest rate rises in international markets and the widespread appreciation of the dollar. In particular, the peaks observed in the default rates of emerging corporate debt of speculative grade in the last 20 years took place from two to three years after a maximum relative value in the US interest rates (after cycles of interest rate rises of two to four years and nearly a year after the emergence of a relative peak in the valuation of the dollar against the remaining currencies (in this last case, the correlation between both variables is weaker).

Chart E.3.3 | Evolution of the default rate of enmerging countries' companies with speculative grade and economic variables



* A lag of 2 years is considered for the variable. ** A lag of 1 year is considered for the variable.
Source: BCRA based on Bloomberg, FMI and S&P Global Ratings.

Therefore, the situation of the debt (for both emerging and developed economies) plays a crucial role in the current global context, marked by a significant uncertainty. In the first place, it is worth pointing out that, depending on the evolution of the various economies, the cycle of relatively high interest rates in the main developed economies could be longer than expected and affect growth expectations, with a progressive impact on companies' cash flow (in the case of the corporate debt). In the second place, and given the increasing debt issues in international markets, the needs for refinancing will be increasingly urgent as time goes by. Besides, this is occurring in a context where market conditions may turn out to be even more challenging. Due to the coexistence of several vulnerability factors at global level, a rise in the perceived counterparty risk (increase of corporate debt defaults or widespread downgrading of ratings) may eventually result in an abrupt change in expectations worldwide, triggering a dynamic of high volatility with risk of contagion to the prices of most emerging countries[76] (regardless of each country's macroeconomic fundamentals), and amplifying the impact on the conditions of global financial stability, with potentially significant second-round effects.

76 It might also potentially affect the perceived risk regarding the portfolio of loans of banks (and other non-banking agents who perform financial intermediation activities) intended for the private sector.

Exhibit 2 / Sustainable Finance: Evolution and Progress

Argentina is part of the international consensus on an economic development that may include the values of “sustainability”, consisting in giving priority to the mitigation and adaptation to the effect of “climate change”, while tending to reduce economic inequalities among social strata. The challenge lies in how to organize and finance an orderly transition towards an economy based on these values.

Sustainable finance helps achieve such objective by promoting the development of initiatives intended to refocus financing on sustainable investments. In this respect, in Argentina, the Technical Group for Sustainable Finance (*Mesa Técnica de Finanzas Sostenibles* - MTFS),[77] which includes the BCRA, published the National Strategy for Sustainable Finance (*Estrategia Nacional de Finanzas Sostenibles* - ENFS)[78] which was adopted by the Board of Directors of the BCRA in June 2023.

The objective of the ENFS is “to identify alternatives to mobilize in a scalable manner the resources required to catalyze public and private investments that may contribute to attain the economic and social objectives under the framework of the Sustainable Development Goals (SDGs), including the country’s goals on mitigation and adaptation to climate change”.

In turn, climate change is seen, at global level, as an additional risk to the stability of the financial systems and the economy at large. Its consequences are visible not only in the economic impact of climate and geological phenomena and the alterations of the ecosystems’ balance (physical risks) but also in the risk of assets value deterioration due to changes in the economic policy / regulatory / technological and/or legal contexts related to the decisions and measures adopted to face such climate change (transition risk).[79] For this reason, the ENFS strategy also focuses on “the process of identifying risks related to climate change to which the various participants of the financial sector are exposed, and of transversally strengthening the capacities of both the public and the private sectors, seeking to increase the financial system’s resilience and to consolidate its contribution to sustainable finance”.

The National Strategy for Sustainable Finance (ENFS) presents five main strategic pillars, as well as specific courses of action, including both financial and non-financial aspects. The first pillar refers to the development of a Regulatory framework. The domestic regulations must be designed to incorporate the territorial dimension (national, provincial and municipal) and the characteristics of companies (SMEs and large enterprises), and must be accompanied by an adequate task of information spreading and training of the Argentine financial and corporate system’s players. The second pillar focuses on a Common language or taxonomy. It is critical to create a common system not only to identify but also to classify the degree of sustainability of investments and economic activities. The ENFS proposes that this taxonomy is adopted gradually (it will be first voluntary and then mandatory) to facilitate the adjustment to, and use of, this taxonomy by the

77 For further detail, see https://www.bcra.gob.ar/Pdfs/Noticias/Declaracion-conjunta-finanzas-sostenibles.pdf Exhibit 3 IEF I-23
78 https://www.bcra.gob.ar/Noticias/BCRA-apoyo-finanzas-sostenibles.asp
79 For further detail, see Exhibit 3 IEF I-21, Box 1 IEF II-21, Box 3 IEF I-22, Exhibit 2 IEF I-23

domestic players. The third pillar refers to the Creation of information, transparency, reporting, indicators and data analysis for decision-making. Sustainable financing requires the creation of reliable and comparable information that may allow for identifying the opportunities and managing the financial risks involved in the transition process. In this respect, the ENFS suggests the development of methodologies for the assessment, analysis, indicators and reports in common, as a fundamental step for the consolidation of the Argentine sustainable finance market. The fourth pillar refers to the creation of a framework that may provide the Incentives required to attract domestic and international funds and to refocus finance on sustainable investments. The fifth and last pillar entails the development of Sustainable financial instruments. The design and implementation of sustainable and innovative financial instruments facilitates and channels capital flows towards sustainable investments.

In line with the ENFS, the BCRA is tackling climate change problems from several perspectives in the context of its mandate to promote financial stability, employment and economic development with social equity established in the Charter of the Central Bank of Argentina. To this effect, it takes part in international organizations and forums, where it highlights the challenge of climate neutrality for Emerging Market and Developing Economies (EMDEs) since the strategy about how to face the problem of climate change adds up to the long-term policies focused on the improvement of the living conditions of the population and economic development.

In the second place, the BCRA will promote capacity-building in order to identify and measure the impact of climate change while, in the third place, it will seek to know the situation in which it is involved. Its participation in the National Survey on Sustainable Development and Climate Change in Argentina 2022 for the banks, insurance companies and the capital market has helped the BCRA make a diagnosis of the financial institutions' degree of knowledge, relevance and approach in terms of sustainability and the financial effects related to climate change with reference to both risks and opportunities.[80]

Lastly, it is also relevant to gradually move forward in the process of identification and assessment of climate change risks not only from the standpoint of the individual institutions but also in terms of the aggregate financial stability. Considering the challenges to be faced as to methodology and gap in data about climate-related risks, the BCRA has promoted an information survey in order to assess the level of exposure and resilience to risks related to climate change for a specific group of institutions. The first stage of the survey on physical risks includes the main 100 debtors of the domestic financial system's largest institutions (the 18 financial institutions belonging to the so-called Group "A"). It consists in information about the geolocation of the core activities of the main debtor companies, which will be useful to analyze their proximity to Argentine regions exposed to domestic physical risk factors. Then, the information to be reported will consist in such companies' level of emission of greenhouse gases in order to start analyzing the transition risks.

In line with the provisions of the National Strategy for Sustainable Finance (ENFS), the BCRA will continue with its holistic implementation process in terms of management and monitoring of these risks.

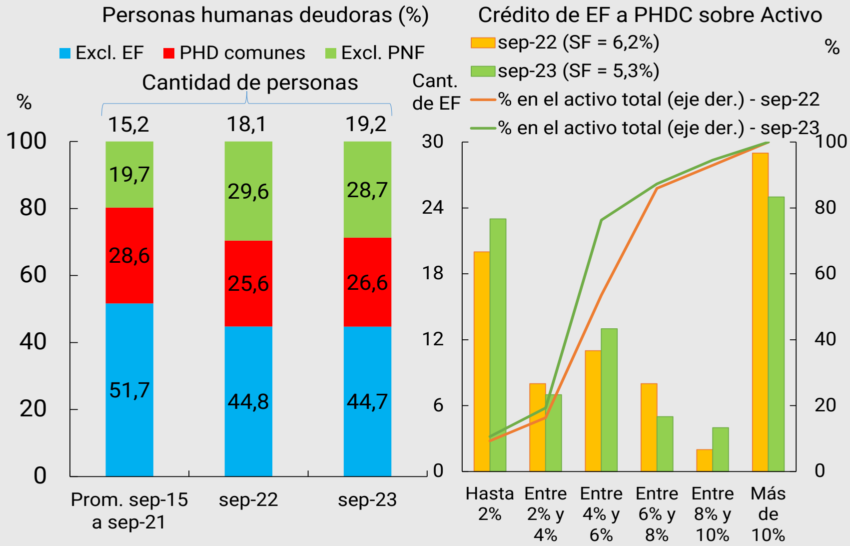
80 https://www.bcra.gob.ar/noticias/Primera-encuesta-de-finanzas-sostenibles.asp

Exhibit 3 / Exposure to Credit Risk Originated in Natural Person Debtors both of Financial Institutions and of Non-Financial Credit Providers

In line with the macroprudential monitoring outlined in previous issues of the Financial Stability Report (IEF),[81] this Exhibit focuses on the analysis of the potential source of vulnerability faced by the ensemble of financial institutions (EF) in the context of their exposure to natural person debtors (PHD) who, at the same time, receive financing from non-financial credit providers (PNFC).[82] As in previous issues of the IEF, these credit holders are characterized as natural person debtors in common (PHDC), to differentiate them from debtors receiving financing exclusively from one of the two groups: Natural Person Debtors Exclusive of Financial Institutions (PHDE of EF) or PHDEs of Non-Financial Credit Providers (PHDE of PNFC).

By the third quarter of the year, EFs and PNFCs granted financing to over 19.2 million natural person debtors, 1.1 million above the value recorded the year before, thus evidencing a sustained growth against the average of the last seven years (see the left panel of Chart E.3.1). In this context, natural person debtors in common (PHDCs) (5.1 million) accounted for 26.6% of the total natural person debtors (PHDs), up 0.9 p.p. against September 2022 (when the records showed 4.6 million of PHDCs), even though this percentage stood below the average of seven years to 2021 (28.6%).[83]

Chart E.3.1 | Composition of natural person debtors – Exposure of EFs to PHDCs



Fuente: BCRA. EF: entidades financieras. PNF: proveedores no financieros de crédito.

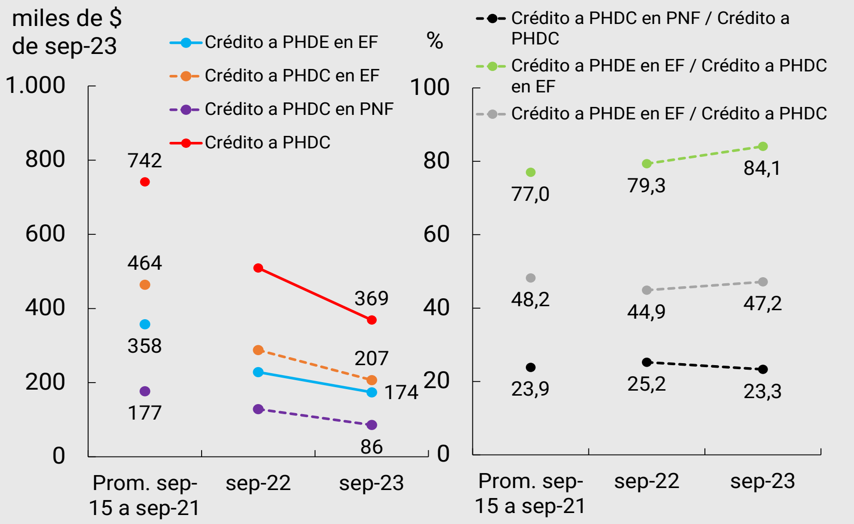
As of the September 2023, when considering the aggregate stock of the ensemble of financial institutions (EFs), the stock of loans from EFs to natural person debtors in common accounted for 5.3% of total assets, down 0.9 p.p. against one year ago, an evolution which was widespread across

81 See Exhibit 4 of IEF I-21 and Exhibit 2 of IEF I-22.
82 For further information, see the Report on Non-Financial Credit Providers and the Report on Financial Inclusion.
83 As of September, the natural person debtors in common (PHDCs) accounted for 34.5% of the total credit granted to natural persons by both financial institutions (EFs) and non-financial credit providers (PNFCs), in line with the value recorded in September 2022.

financial institutions (see right panel of Chart E.3.1).[84] In total, 70 financial institutions out of the 77 active EFs granted loans to natural person debtors in common (PHDCs). Nevertheless, as to the distribution of the credit ratio to PHDCs in terms of the assets of each EF, this ratio exceeded 10% only in a group of 25 EFs as of September 2023 (down 4% against the previous year), institutions which are relatively small and explained only 5.5% of the sector's assets by the end of the third quarter. Thus, even though last year the number of PHDCs went up (and so did the relevance in the total of natural person debtors (PHDs), the credit exposure contracted in terms of the assets of the ensemble of EFs to this segment.

In order to explore the effects of potential changes on the payment capacity of natural person debtors in common (PHDCs) (differentials with Natural Person Debtors Exclusive of Financial Institutions —PHDEs), it is relevant to monitor their level of debt per capita, seeking to identify whether getting additional sources of financing generates indebtedness or not, which may be high from a certain standpoint. In this regard, in recent years, the median of the stock of debt per capita of PHDCs with EFs turned out to be higher than the median for PHDEs with EFs (see Chart E.3.2). Thus, as of September, the median of the stock of debt per capita of PHDEs with EFs stood at around ARS174,000, whereas the median of the stock of debt per capital of PHDCs with EFs amounted to ARS207,000; both levels contracted in real terms over the last year, with a slightly more marked relative decrease in the stock per capital of PHDCs. Therefore, when observing the evolution of natural person debtors with debt in EFs, the indebtedness of natural person debtors in common would be shrinking in relative terms against that of natural person debtors exclusive of financial institutions, which is a positive sign in terms of their eventual payment capacity in the future.

Chart E.3.2 | Median of the stock of credit per capita to natural person debtors (PHDs)



EF: entidades financieras. PNF: proveedores no financieros de crédito. PHDE: personas humanas deudoras exclusivas. PHDC: personas humanas deudoras comunes. Fuente: BCRA.

With respect to the sources of income of natural person debtors in common (PHDCs), it is estimated that, as of September, almost 50% of this group was under formal employment in the

84 Similar performance when considering the median values: a drop of 0.9 p.p. y.o.y. down to 5.2%.

economy, down 1.3 p.p. against the value recorded one year ago, but up 3.2 p.p. against the average of the last seven years.[85] Last August, these wage-earning PHDCs had a debt with EFs equivalent to 2.1 times their monthly remuneration, and this value reached almost 2.6 times upon considering also the debt with PNFCs (almost 2.8 and 3.6 times, respectively, in August 2022).[86]

With respect to indicators of credit risk materialization, the non-performance ratio of loans to natural person debtors in common (PHDCs) with EFs stood at 5.3% in September, up 0.4 p.p. y.o.y. This level turned out to be higher than the non-performance ratio of loans to Natural Person Debtors Exclusive of Financial Institutions (PHDEs) with EF (1.8%). This shows that the relative delinquency ratio of the first group three folded the delinquency ratio of the second group, and this ratio rose in year-on-year terms. Besides, the non-performance of PHDCs with PNFCs stood at 10.5%, 1.8 times the non-performance of this same group of persons with EFs.

Nevertheless, in spite of higher and growing relative levels of delinquency by natural person debtors in common (PHDCs), given the limited (and decreasing) exposure of the ensemble of EFs to PHDCs together with the high levels of hedging, it is possible to infer that the financial system remains resilient upon this potential source of vulnerability. To show this aspect, we can make a sensitivity exercise (hypothetical, extreme and very unlikely to occur) to get a dimension of the response to eventual shocks on the PHDCs and to assess the equity impact on the aggregate financial system. Thus, the exercise puts forth a scenario in which (i) we assume non-payment of the whole non-performing debt of debtors, (ii) we assume that PHDCs with non-performing balances with any EF and/or with a PNFC cease to pay their performing debts with other EFs (if any), and (iii) we also assume that each EF uses any surplus provisions[87] to initially cover this credit impairment. The result indicates a reduced impact on the regulatory capital of the financial system, since the median of the sector's capital position would go from 285.2% (weighted average of 288.7%) to 265.8% (weighted average of 280.1%). Therefore, this highlights the relative levels of provisions and capital with which the financial sector operates.

The BCRA will continue to analyze these and other groups of debtors as long as it may deem that this analysis may contribute to a better assessment of the various aggregate sources of vulnerability for the financial system.

85 Likewise, it is estimated that 46.7% of PHDEs with EFs received formal remunerations in September 2023, in line with the values recorded one year ago (-0.1 p.p.) and +2.1 p.p. against the average of the previous 7 years. For PNFCs exclusive of financial institutions, the number goes up to 17.7% (-1.2 p.p. y.o.y. and -2.6 p.p. in historical terms).
86 For natural person debtors exclusive of financial institutions, considering both EFs and PNFCs, the stated ratio stood at approximately 1.7 times the monthly remuneration.
87 At the level of each institution, surplus provisions are considered to be the total provisions minus minimum provisions for each situation without preferred guarantees (conservative scenario): 1% for performing portfolio, 5% under observation, 12% under negotiation, 16% under special treatment, 25% with problems, 50% high insolvency risk and 100% bad debt.

Exhibit 4 / Proxy to the Impact of Physical Climate Risks on the Local Financial System

As stated in Exhibit 2 and in previous issues of the IEF,[88] in recent years the climate change started to be identified as an emerging risk for the stability of financial systems worldwide, which might materialize in the next decades. This occurs, on the one side, because of the potential adverse effects on the equilibrium of ecosystems, leading to more frequent and intensified climate-related events of several characteristics such as, for example, droughts, floods and extreme rains, among other. These risks, commonly known as "physical risks," may adversely impact on the usual activities of households, companies and on sovereigns, as well as on their assets —physical and/or financial. On the other hand, the climate situation may also be reflected on the risk of impairment of the productive assets value, for instance, upon changes in the context of economic and regulatory policy seeking to mitigate the sources of climate change and/or to adapt to it, which is commonly known as "transition risk."

For Argentina, it is relevant to consider the potential impact of extreme episodes of droughts like those which have hit the country in recent years. The last drought was observed as from the first months of 2022 and conditioned the evolution of the economic activity throughout such year, as well as in 2023.[89] The particular feature of the recent drought vis-à-vis other episodes of similar characteristics (2009, 2012 and 2019) was the length for three years of the climate phenomenon La Niña, a situation unseen since the 1988/89 season.

During the first quarters of 2022, the drought affected agricultural production, with a correlation in fiscal terms (export duties collection), and also impacted on the balance of trade of Argentina. The greater hydric anomalies were mostly concentrated in the provinces of Buenos Aires, Córdoba, Santa Fe, San Luis and Entre Ríos, causing losses in wheat production and a delay in the sowing of soybean and corn, also affecting fruit production and impacting on cattle breading activity, among other. At the beginning of 2023, adverse climate conditions continued to prevail, with drought and early frosts, thus intensifying the adverse effects stated above.

Against this backdrop, and based on information from the BCRA's Debtors' Database on the companies which are part of the local agricultural segment, a universe including these activities and other ones related to exports of the wheat, corn and soybean sector, some exercises of sensitivity were conducted to get a proxy of the potential impact of this physical risk on the aggregate solvency of the Argentine financial system. It is worth considering that the aggregate exposure of the institutions to this sector accounted for around 17% of the loans to the private sector by the end of the third quarter of 2023, with a non-performing ratio of around 5.5%, above the value recorded at aggregate level (around 3%, see Section 3.1).

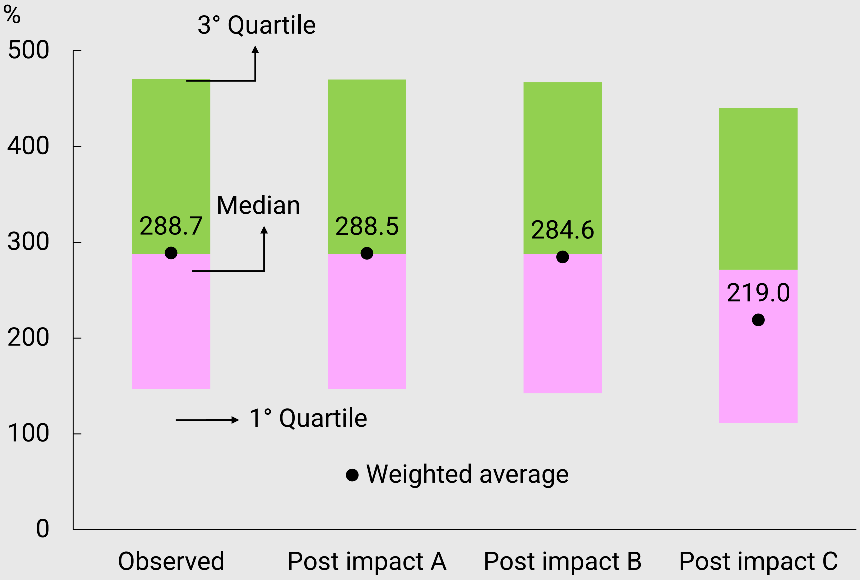
Specifically, the exercises of sensitivity carried out on the agricultural companies segment were as follows:

88 See, among other, Exhibit 3 IEF I-21, Box 1 IEF II-21, Box 3 IEF I-22 and Exhibit 2 IEF I-23.
89 For further detail about the impact of drought on the harvest and its fiscal effects, and on the GDP, see the 2022 and 2023 issues of the Monetary Policy Report.

- Sensitivity A: For debtors included in the scope of companies under analysis, and having a non-performing balance in at least one financial institution, the exercise has assumed the non-payment of such balance, as well as of any other non-performing balance such debtor may have.[90]
- Sensitivity B, added to the previous exercise –A: This exercise has assumed the non-payment of the performing balance of debtors who had a non-performing balance between Dec-2017 and Dec-2019 (period of the previous drought) and not included in exercise A.[91]
- Sensitivity C, added to the previous exercise –B: An extreme assumption has been made of non-payment of the performing balance of the other debtors included in the universe of debtors under analysis.[91]

As shown in Chart E.4.1, the impact of the exercises of sensitivity (prepared under extreme assumptions which are unlikely to occur) on the solvency of the ensemble of institutions is currently limited.[91] Exercises A and B assume no sizable changes in terms of the regulatory capital position of the aggregate of domestic banks —the capital compliance in excess of the regulatory cash requirement stands at levels of around 280% / 290%. When using more extreme assumptions of non-payment by all debtors of the universe under analysis, as shown in exercise of sensitivity C, the capital position of the sector falls around 60 p.p. down to a level of nearly 220%, still within a broad range.

Chart E.4.1 | Exercises of sensitivity – Impact on the capital position of the aggregate financial system



Source: BCRA.

Given the complex aspects related to identification and assessment of risks resulting from climate issues on the normal development of financial systems, we should continue to move forward in

90 A netting is made of minimum theoretical provisions for debtors impacted, plus a surplus of additional provisions (total minus theoretical minimum provisions) per each financial institution.

91 This exercise includes the direct impacts only, and does not consider any eventual second round effects on the economy (GDP, trade balance, etc.) which might make the analysis more complex and the proposed impact more sensitive.

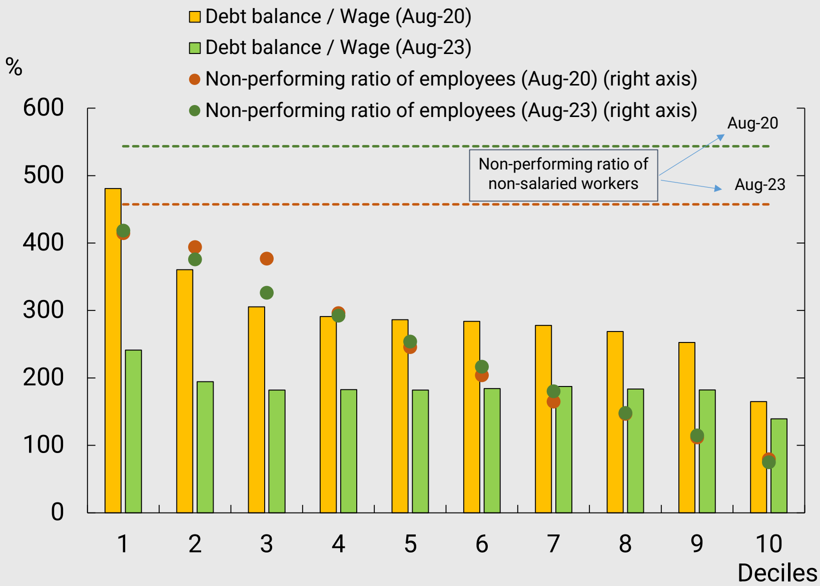
the development of tools enabling to have a more comprehensive and detailed perspective of such risks, and to intensify follow-up and assessment in the years to come.

Exhibit 5 / Evolution of Household Indebtedness in Terms of Income

The indebtedness level of Argentine households with the financial system is standing at only at 3% of GDP (below the value recorded one year ago), which is in fact a very low record in historical terms and in a regional comparison.[92] Besides, as a consequence primarily of the reduction in the stock of loans in real terms granted to this sector, the financial burden of this debt continues to be limited at aggregate level (see Section 3.1). The financial system's low credit exposure to households, added to the moderate non-performance of this segment, results in a limited source of potential vulnerability for financial institutions.

Beyond this aggregate outlook, it is equally relevant to make progress and go deeper into this vision, mainly on the basis of an analysis consisting in breaking down the various strata of households as per their level of income. Thus, it is possible to have a more granular indicator that may help assess the degree of leverage of this sector and its potential payment capacity. As already done in previous issues of the IEF,[93] Chart E.5.1 shows the level of indebtedness of households grouped according deciles of formal income[94] —from lower to higher income—, estimated at different points in time.

Chart E.5.1 | Indebtedness ratios by income and non-performance



Note: the deciles were built without considering the 10% with the lowest income. Source: BCRA

Against this backdrop, in August 2023 (latest information available), there were around 13.2 million debtor households in the financial system, up 1.1 million against the value recorded three years ago. Such households presented a non-performing ratio of 3.1% of the stock of debt (similar to the value recorded in August 2020, which partly reflected the effects of the relief measures adopted in the context of the COVID-19 pandemic). It is estimated that approximately half this group, i.e. around 6.5 million of debtors, was under an employment relationship by the end of the third quarter

92 For further detail on the broad level of indebtedness of households, see Chart 14 in Section 3.1 of this Report.
93 For further detail, see Exhibit 3 of the IEF of December 2022.
94 The Reporting Regime –RI– on Payment of Remunerations (BCRA) is used, a subgroup of the population only incorporating data on the income from workers under an employment relationship whose wage is deposited with a financial institution.

of 2023 (up 1 million against the value recorded 3 years ago) which, on average, owed to the financial system 1.7 times their net monthly remuneration (2.5 in August 2020).[95] In relative terms, this drop in the indebtedness ratio to income was more marked in lower-income segments (first deciles).[96] It is worth considering that the group of the system's debtor households with formal income posted a non-performing ratio of 1.9% in August, in line with the value recorded three years ago (-0.1 p.p.), with a slight drop in the indicator mostly for the first deciles (the third and second decile), which was offset by slight increases in the remaining ones.

In turn, it is estimated that, in addition, there were 6.8 million debtors of the ensemble of institutions with no formal income (up around 100,000 against the value recorded three years ago) in August 2023. The average debt of this segment is lower than the debt of debtors with formal income (practically half of it). The delinquency ratio of this group of households stood at 5.4% over the month (+0.9 p.p. in these last three years).

To sum up, the potential vulnerabilities from the various strata of households based on their income continue to be limited. Nevertheless, this segment should continue to be followed up, together with the group of non-wage-earning debtors.

95 The debt stock of wage-earning households with loans rose 393% in nominal terms in three years, whereas the estimated remuneration of this group went up 607%.
96 This drop in the ratio of financial system's debt to the total remuneration of debtors (and the higher impact on the first deciles) is partly consistent with an upward trend in the share of debtors of the non-financial credit providers (PNFCs) and in their amounts —debt not included in this calculation—, with respect to the total of the broad financial system (financial system plus PNFC). For further detail on the broad ensemble of debtors and their relevant interrelation, see Exhibit 3.

Abbreviations and acronyms

€: Euro
a.: annualized
AFIP: Federal Administration of Public Revenue (*Administración Federal de Ingresos Públicos*)
ANSeS: National Social Security Administration (*Administración Nacional de la Seguridad Social*)
APR: Risk-Weighted Assets (*activos ponderados por riesgo*)
ASPO: Mandatory Preventive Social Isolation (*Asilamiento, social, preventivo y obligatorio*)
ATM: Automated Teller Machine
BADLAR: Buenos Aires Deposits of Large Amount Rate (*Tasa de interés pagada por depósitos a plazo fijo de 30 a 35 días, más de un millón de $, promedio de entidades*)
BCE: European Central Bank (*Banco Central Europeo*)
BCBA: Buenos Aires Stock Exchange (*Bolsa de Comercio de Buenos Aires*)
BCBS: Basel Committee on Banking Supervision
BCRA: Central Bank of the Argentine Republic (*Banco Central de la República Argentina*)
BID: Inter-American Development Bank (*Banco Interamericano de Desarrollo*)
BIS: Bank for International Settlements
BoE: Bank of England
CABA: Autonomous City of Buenos Aires (*Ciudad Autónoma de Buenos Aires*)
CAFCI: Argentine Chamber of CCI (*Cámara Argentina de FCI*)
Call: Unsecured Interbank Market Operation Rate (*Tasa de interés de las operaciones del mercado interfinanciero no garantizado*)
CCP: Central Counterparty (*Contraparte Central*)
CDS: Credit Default Swaps
CEMBI: Corporate Emerging Markets Bond Index
CER: Reference Stabilization Coefficient (*Coeficiente de Estabilización de Referencia*)
CNV: National Securities Commission (*Comisión Nacional de Valores*)
COVID-19: Coronavirus Disease 2019
DSIB: Domestic Systemically Important Banks
ECAI: External Credit Assessment Institution
ECB: European Central Bank
ECC: Credit Conditions Survey (*Encuesta de Condiciones Crediticias*)
EEUU: United States (*Estados Unidos*)
EFNB: Non-Banking Financial Entities (*Entidades Financieras No Bancarias*)
EMAE: Monthly Economic Activity Estimator (*Estimador Mensual de Actividad Económica*)
EMBI+: Emerging Markets Bond Index Plus
FCI: Mutual Investment Funds (*Fondos Comunes de Inversión*)
Fed: United States Federal Reserve
Fed Funds: Federal Reserve Funds Rate (*Tasa de interés de referencia de la Reserva Federal de EEUU*)
FGS: Sustainability Guarantee Fund (*Fondo de Garantía de Sustentabilidad*)
FMI: International Monetary Fund (*Fondo Monetario Internacional*)
FSB: Financial Stability Board
i.a.: Interannual
IAMC: Argentine Institute of Capital Market (*Instituto Argentino de Mercado de Capitales*)
IEF: Financial Stability Report (*Informe de Estabilidad Financiera*)
INDEC: National Institute of Statistics and Census (*Instituto Nacional de Estadística y Censos*)
IPC: Consumer Price Index (*Índice de Precios al Consumidor*)
IPIM: Internal Wholesale Price Index (*Índice de Precios Internos al por Mayor*)
IPOM: Monetary Policy Report (*Informe de Política Monetaria*)
IVA: Value Added Tax (*Impuesto al Valor Agregado*)
LCR: Liquidity Coverage Ratio
LELIQ: Central Bank Liquidity Bills (*Letras de Liquidez del BCRA*)
LR: Leverage Ratio
MAE: Electronic Open Market (*Mercado Abierto Electrónico*)
MERCOSUR: Southern Common Market (*Mercado Común del Sur*)
Merval: Buenos Aires Stock Market Index (*Mercado de Valores de Buenos Aires*)
MiPyME: Micro, Small, and Medium Enterprises (*Micro, Pequeñas y Medianas empresas*)
MSCI: Morgan Stanley Capital International
MULC: Single and Free Exchange Market (*Mercado Único y Libre de Cambios*)
NIC: International Accounting Standard
NIIF: International Financial Reporting Standards (IFRS)
NOTALIQ: Central Bank Liquidity Notes (*Notas de Liquidez del BCRA*)
OCDE: Organisation for Economic Co-operation and Development (*Organización de Cooperación y Desarrollo Económico*)
ON: Negotiable Obligations (*Obligaciones negociables*)
OPEP: Organization of the Petroleum Exporting Countries
ORI: Other Comprehensive Income
p.b.: Basis Points
p.p.: Percentage Points
PEN: National Executive Power (*Poder Ejecutivo Nacional*)
PGNME: Net Global Position in Foreign Exchange (*Posición Global Neta de Moneda Extranjera*)
PIB: Gross Domestic Product (*Producto Interno Bruto*)
PN: Net Worth (*Patrimonio Neto*)
PyMEs: Small and Medium-sized Enterprises (*Pequeñas y Medianas Empresas*)
REM: Market Expectations Survey (*Relevamiento de Expectativas del Mercado*)

ROA: Return on Assets (*Rentabilidad en términos de los activos*)
ROE: Return on Equity (*Rentabilidad en términos del patrimonio neto*)
ROFEX: Rosario Futures Exchange
RPC: Computable Equity Responsibility (*Responsabilidad Patrimonial Computable*)
S&P: Standard and Poor's (S&P 500 Index)
s.e.: Seasonally Adjusted
SEFyC: Superintendency of Financial Entities and Exchange (*Superintendencia de Entidades Financieras y Cambiarias*)
SGR: Reciprocal Guarantee Society (*Sociedad de Garantía Recíproca*)
TCR: Real Exchange Rate (*Tipo de cambio real*)
TM20: Interest Rate for Time Deposits of 20 Million or More Pesos or Dollars
TN: National Treasury (*Tesoro Nacional*)
TNA: Nominal Annual Rate (*Tasa Nominal Anual*)
TO: Consolidated Text (*Texto Ordenado*)
Trim.: Quarterly
UE: European Union (*Unión Europea*)
US$: United States Dollars
UVA: Purchasing Power Unit (*Unidad de Valor Adquisitivo*)
UVI: Housing Unit (*Unidad de Vivienda*)
Var.: Variation
VIX: S&P 500 Volatility Index
WTI: West Texas Intermediate