Financial market development, monetary policy and financial stability in an emerging market economy[1]

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Abstract

This note describes the Argentine financial system, explains how monetary policy is shaped by the degree of financial development, and how it interacts with financial stability. The degree of financial market development weighs substantially on monetary policy and financial stability in emerging market economies such as Argentina. How far financial markets carry out effective intermediation, in which currencies and at what maturities, all influence the way in which monetary and financial stability policies are implemented, and their transmission to the rest of the economy. We also look at the lessons from the recent experience of full capital account liberalisation, rapid indebtedness and the ensuing financial turbulence in Argentina.

JEL codes: E58, G28, F30.

Keywords: financial market development, monetary policy, financial stability, emerging market economies.

The degree of financial market development weighs substantially on monetary policy and financial stability in emerging market economies (EMEs). How far financial markets carry out effective intermediation, in which currencies and at what maturities, all influence how monetary and financial stability policies are implemented and transmitted to the rest of the economy. In this note, we review the basic features of the Argentine financial system, outline how monetary policy is shaped by the degree of financial development, and how it interacts with financial stability. We conclude with the lessons drawn from the recent experience of rapid capital account liberalisation and indebtedness in Argentina.

Financial market development in Argentina

Financial market structure

Argentina's financial system is moderate in size compared with the average of other EMEs. The total assets of financial entities and the main institutional investors are equivalent to 41% of GDP as of December 2019. The financial system is mainly bank-based, with the total assets of banks equivalent to almost 27% of GDP. In terms of institutional investors, the Sustainability Guaranty Fund (*Fondo de Garantía de Sustentabilidad* (FGS), a government-managed portfolio resulting from the nationalisation of pension funds in 2008) has a leading role. The FGS portfolio is bigger than the combined assets of other relevant investors (ie insurance companies and mutual funds).

Argentina's financial system – main participants

Assets in terms of GDP (%)   Graph 1
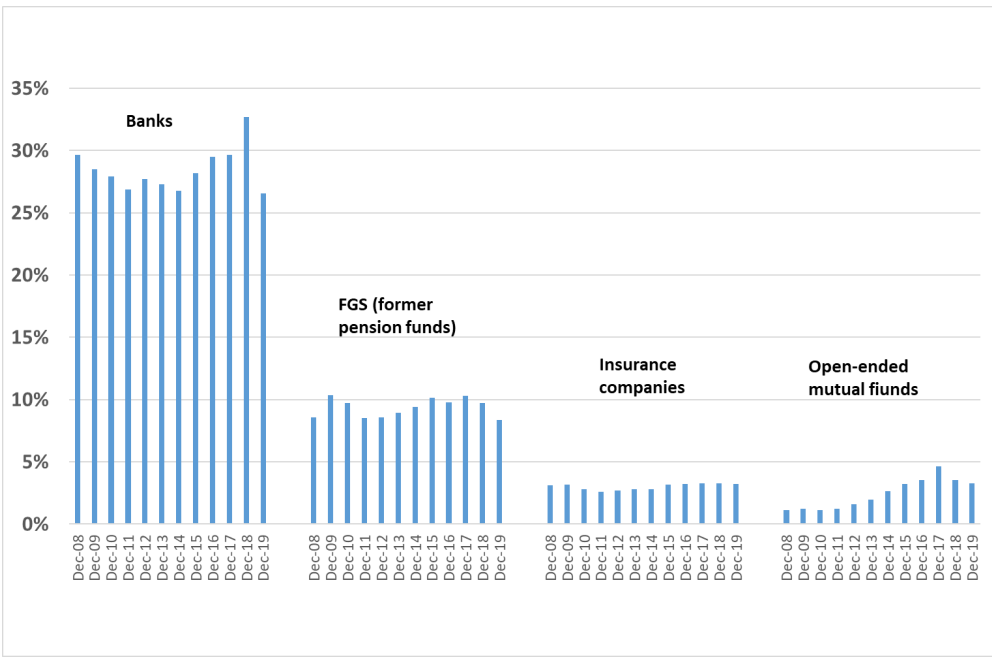
Sources: BCRA based on ANSES-FGS, SSN CNV and CAFCI.

Local capital markets are less deep and liquid than others in Latin America. This is due to persistent macroeconomic imbalances, changing policies (including different monetary regimes) and a succession of crises in the last two decades (including the 2001 default). .

Government bonds play a large part in Argentina's capital markets in terms of total outstanding securities (including those issued locally and/or in international markets). On the other hand, the weight of private sector securities (such as corporate bonds, equities and securities associated with financial trusts) is more subdued than it other markets. This is reflected in the structure of institutional investors' portfolios, with sovereign bonds accounting for 70% of total FGS assets.[2]

Two laws have been passed to address the small scale of domestic capital markets during the past decade. In 2012, Law 26,831 sought to increase the regulatory and enforcement powers of the regulator (*Comisión Nacional de Valores* (CNV)), changing the map of agentes and markets (including the demutualisation of markets) and introducing improved links between different domestic markets (federalisation), among other reforms. More recently, in 2018, Law 27,440 revised the regulatory framework, introducing new instruments/agents (including, for instance, new SME instruments) and modernising existing ones (such as closed-ended mutual funds and mortgage-backed securities (MBS)) and reducing tax burdens.

Argentine capital markets

Securities stocks in terms of GDP (%) – March 2020

Graph 2
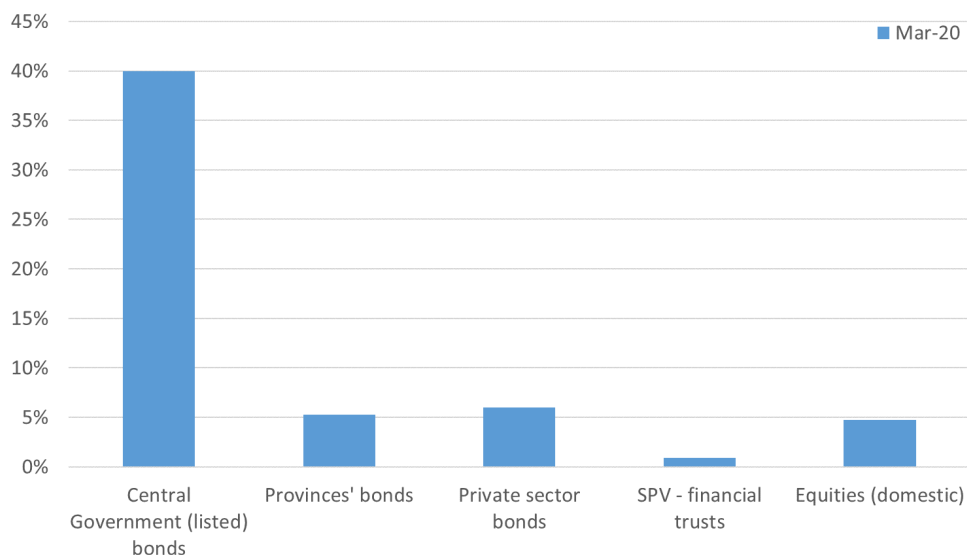
Sources: BCRA estimates, based on MECON, CNV and IAMC.

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[2]   With a significant but lower weight for government bonds when considering the portfolios of insurance companies (34%) and mutual funds (15%).
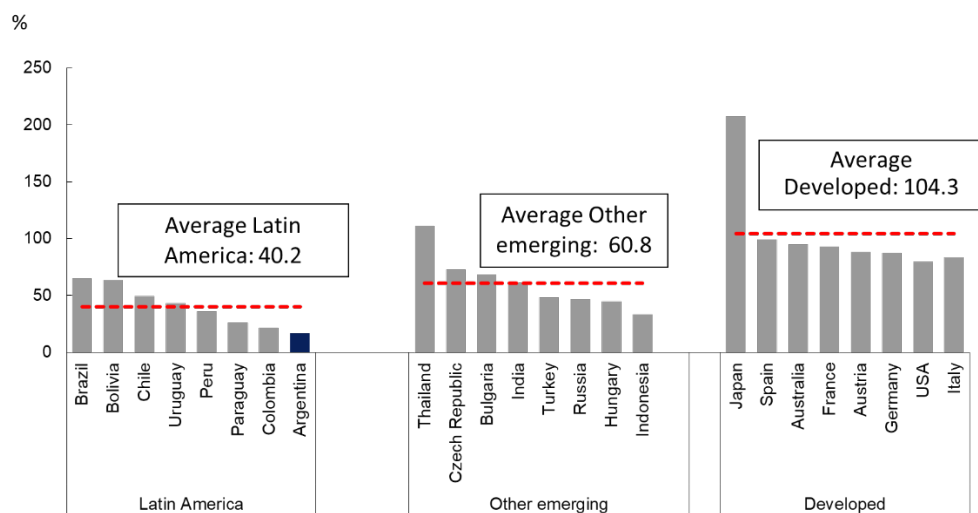
Banking sector[3]

One relevant feature of the Argentine banking sector is its relatively low depth. Private sector deposits represent nearly 16.8% of GDP, which is low compared with many other EMEs.

Private sector deposits – international comparison

As % of GDP   Graph 3

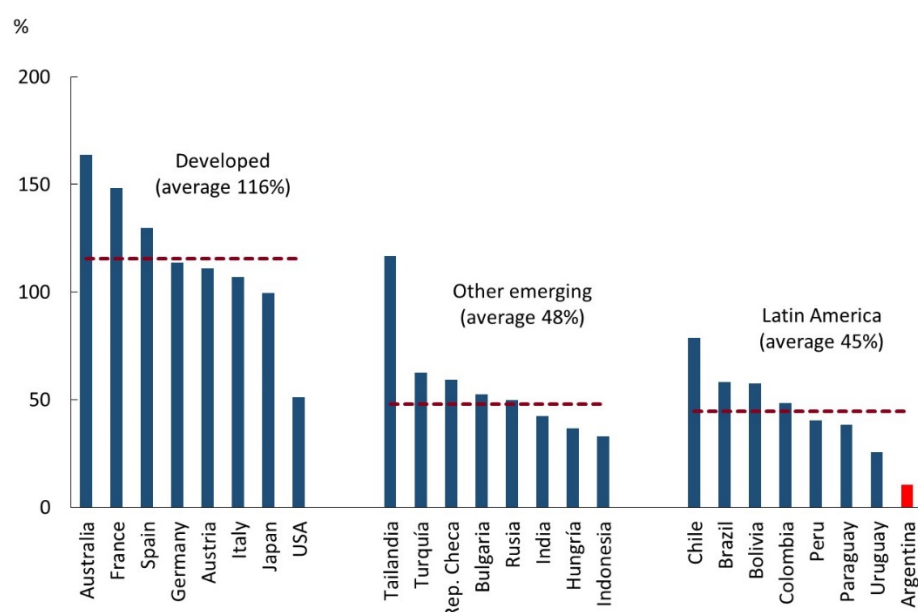Sources: BCRA and IMF. Latest available data.

Loans to the private sector are currently equivalent to 10.5% of GDP, almost half the historical peak, and well below levels in other EMEs. This ratio has fallen in recent years, reflecting the slowdown in the real economy. Lending in pesos represents almost 76% of total credit. Corporate funding accounts for 52% of total private sector financing, with households accounting for the rest. Mortgage lending (to both households and firms) represents only a small share of total bank credit, equivalent to only 1.5% of GDP in December 2019 (14% of total private sector financing), with household mortgages accounting for almost 82% of that figure.

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[3]   Including all financial institutions (banks and non-bank deposit-takers) under the supervision of the BCRA. For a more detailed assessment, see Financial Stability Report.

Credit to the private sector – international comparison

As % GDP   Graph 4

%

Bar chart titled "Credit to the private sector" grouped into three categories:
- Developed (average 116%): Australia, France, Spain, Germany, Austria, Italy, Japan, USA
- Other emerging (average 48%): Tailandia, Turquía, Rep. Checa, Bulgaria, Rusia, India, Hungría, Indonesia
- Latin America (average 45%): Chile, Brazil, Bolivia, Colombia, Peru, Paraguay, Uruguay, Argentina

Credit to the private sector is the most important component of local banks assets, accounting for approximately 40% in December 2019. Liquid resources (including monetary regulation instruments) account for almost 37% of assets and lending to the public sector nearly 10%.

Total deposits represented 72% of banks' total funding as of December 2019, mainly from the private sector (60% of total funding). Total net worth amounts to 13% of total funding. Other sources of funding, such as foreign credit lines, corporate bonds and subordinated debt, remain small (4% of total funding).

It should be highlighted that local banks' activity is mostly transactional in nature, while financial intermediation is characterised by limited maturity transformation. Bank funding and assets are mainly short-term in nature. A significant portion of the financial system's funding is relatively stable (comprising sight deposits in pesos), being linked to the transactional needs of households and businesses' operational requirements. The effective term of these liabilities tends to be longer than the contractual period.

The impact of financial market development on monetary policy

The degree of financial market development (FMD) weighs substantially on the design and implementation of monetary policy in Argentina. The features outlined above go a long way in shaping the choice of monetary policy instruments and their

expected effectiveness. Low FMD means that maturity transformation is carried out only to a very limited extent.

In its conventional form, monetary policy influences private sector decisions through intertemporal substitution (making current consumption more or less costly vis-à-vis future consumption). This allows policymakers to regulate aggregate demand and, through the impact on the output gap, inflation dynamics. Inflation expectations are formed based on this monetary policy impact, and so the (credible) announcement of interest rate setting can move inflation expectations as desired. The links in this chain are altered, or even broken, when FMD is low.

Under low financial intermediation, interest rate changes have only a subdued impact on consumption. In shallow financial markets, maturity decisions may be compressed to, say, less than a year, with scarce long-term credit to speak of. In Argentina, the average maturity of the most representative lines of loans to companies range from less than two months (discounted notes) to one year (bills or documents). This in turn lessens the leverage that monetary policy can bring to bear on aggregate demand, and its ability to influence the output gap. Therefore, inflation expectations will change very little due to the intended impact on intertemporal substitution. Short bond maturities in underdeveloped capital markets also constrain the transmission from short-term to long-term interest rates. Finally, at the operational level, the menu of instruments available for open market operations is limited as well. Episodes of default have led to the use of central bank-issued securities to carry out such operations.

Rather than intertemporal substitution through financial intermediation, private sector decisions are about the degree of portfolio dollarisation, ie currency substitution. In other words, consumers and companies are making decisions not so much about whether to save or lend at shorter or longer terms (and in which instruments), as about saving in the local or a foreign currency (in typically a narrow variety of instruments). Financial decisions "across currencies" tend to dominate those "over time".

The exchange rate channel of monetary policy becomes more important. Changes in monetary policy rates may have an impact on inflation expectations, but this is exerted through their effect on exchange rate dynamics. The role of the exchange rate for expectations formation stands out in estimated Phillips curves for Argentina in different periods (D'Amato and Garegnani (2009); Krysa and Lanteri (2018)), where the coefficient for the exchange rate is systematically higher than that of the output gap. DSGE models of the Argentine economy also reveal the fundamental role of the exchange rate in inflation dynamics. While pass-through is endogenous and dependent on the monetary policy stance, ERPT coefficients in Argentina continue to be four to eight times higher than other Latin American countries.

But currency factors also have a financial stability dimension. As savings decisions are not so much about how to smooth intertemporal consumption over time, but about how to allocate wealth in local or foreign currency, exchange rate swings may weigh on financial stability much more than could be expected. The relationship between savings in local currency and FX volatility provides a clear illustration (Graph 5). The sum of time deposits and private non-financial sector holdings of central bank bills shows a negative correlation of 72% with nominal exchange rate volatility.

Foreign exchange volatility and savings in local currency   Graph 5
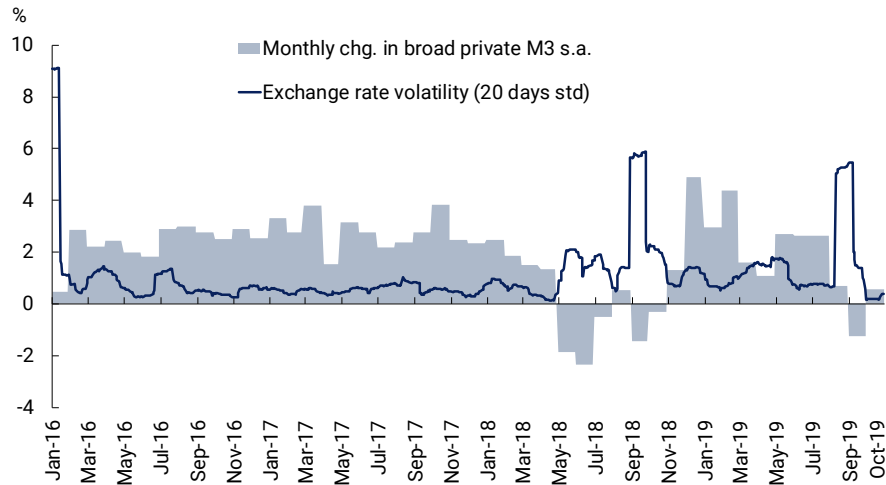
Source: BCRA.

For the reasons just outlined, FX intervention policy becomes a relevant monetary policy tool (Aguirre et al (2019)). In a relatively small foreign exchange market like that of Argentina, very small movements can become easily amplified: this reinforces the motivation for central bank intervention when such movements are unrelated to economic fundamentals.

The importance of FX intervention is underscored by the small size of the domestic market for currency hedging: open interest in Rofex (the main FX futures market) accounted for 94% of traded amounts in 2018, which in turn represented 0.6% of GDP as of December 2018. The use of FX hedging using derivatives by banks is limited: according to the BIS Triennial Central Bank Survey of Foreign Exchange and OTC Derivatites Markets, only 5% of total derivatives transactions reported as of December 2018 were motivated by hedging.

Recent experience also indicates that the use of the interest rate as the only policy tool, together with full capital mobility, leaves the economy exposed to sudden stops of capital flows, with adverse consequences for price and financial stability (see Section 3). This is compounded by the high portfolio dollarisation of the Argentine private sector, as a consequence of a history of macroeconomic crises. In this light, capital flow management measures have become part of the macroprudential policy package, as they can prevent excessive risk-taking in the currency market and limit negative spillovers from the financial system to the economy at large.

More generally, an integrated monetary policy approach (Agénor and Pereira da Silva (2018)) contemplates the use of standard tools (such as interest rates) with foreign exchange intervention and macroprudential policy, including capital flow management measures. Such an approach may be called for in the presence of one or more of the following conditions: a high impact of nominal exchange rate movements on inflation or inflation expectations; real exchange rate variability that distorts consumption and investment decisions; an impact of portfolio shifts between local and foreign currency-denominated assets on financial stability; and underdeveloped financial and foreign exchange markets. Indeed, models estimated

and calibrated for the Argentine economy suggest that the optimal policy mix includes interest rate policy, foreign exchange intervention and capital flow management measures (Escudé (2015)). The following section deals in more detail with the financial stability dimension.

Impact of FMD on financial stability

The size of Argentine capital markets expanded from 2016 to mid-2018, based on the implementation of several macroeconomic policies. Those included: the liberalisation of capital controls; corrections in relative prices; the normalisation of public sector debt that was in dispute; the introduction of an inflation targeting regime; and policy measures that aimed to foster the construction of a yield curve in domestic currency (national government issuance of the so-called BONTEs). In this context, securities issuance from both the public and private sectors rose sharply between 2016 and mid-2018 in nominal terms (although annual gross flows to the private sector in terms of GDP remained low). This was accompanied by increasing portfolio inflows until the second quarter of 2018.

Nevertheless, this trend was interrupted by mid 2018 due to the sudden stop in capital flows undergone by EMEs since May 2018. Although the overall magnitude of the event was smaller than that of previous sudden stops for EMEs (ie the 2013 taper tantrum), it had a more significant impact on certain economies. Argentina was among the countries that suffered the most from the tightening of financial conditions for EMEs since late April 2018, with significant portfolio outflows and pressures on the FX market (which ultimately led to a standby arrangement with the IMF).

The episode illustrates the kind of risks frequently associated to market-based finance. The sudden stop hit Argentine assets in both local and foreign currency, but its trigger was the sale of central bank bills (LEBACs) by foreign funds. In a few days, the initial shock was amplified by sales from local money-market mutual funds, which were also large holders of LEBACs. While the banking system was largely isolated from the disruption, market volatility escalated and led to changes in monetary policy implementation, including a new policy regime in place from October 2018.

Volatility resumed in 2019 (a presidential election year), in both the FX and government debt markets. After the primary elections (August 2019), the risk perception of Argentine assets went up, eroding the public sector's ability to roll over short-term debt at maturity. This caused a sharp drop in the price of all Argentine assets (corporate and sovereign bonds, as well as equities), together with a fall in the exchange rate and a withdrawal of dollar deposits. With limited access to the debt market, the repayment terms of Treasury bills were rescheduled (reprofiling), and the intention to proceed with a voluntary extension of the terms of some sovereign bonds was announced. In addition, the BCRA implemented a series of measures to regulate access to the foreign exchange market, limiting the purchases of foreign assets for no specific use and adjusting the settlement terms of export collections. Although higher volatility did impact certain market segments (eg fixed income and money market mutual funds recorded significant redemptions), financial system soundness has been largely unaffected.

Banking sector: liquidity and solvency

In spite of recent developments, the financial system has continued to function with a high level of soundness, operating within a regulatory framework in line with international standards. The financial system maintains sizeable prudential margins in terms of liquidity and solvency.

Broad liquidity in terms of bank deposits has remained well above its historical peak values, standing at around 66% as of April 2020. It is worth mentioning that there is a high coverage in foreign currency (around 73% of foreign currency deposits) despite the high withdrawal of private sector deposits in 2019.

In addition, Basel-based liquidity ratios widely exceed the regulatory minimum. The Liquidity Coverage Ratio (LCR) stood at an aggregated 2.4 in March 2020, well above the regulatory minimum of 1 (as of 2019). Likewise, by December 2019, the aggregated Net Stable Funding Ratio (NSFR) exceeded the domestic regulatory minimum (equivalent to 1 as from its implementation in 2018).

Liquidity and solvency – financial system
Graph 6

Broad Liquidity ($ and USD)   Compliance and requirement of minimum capital*
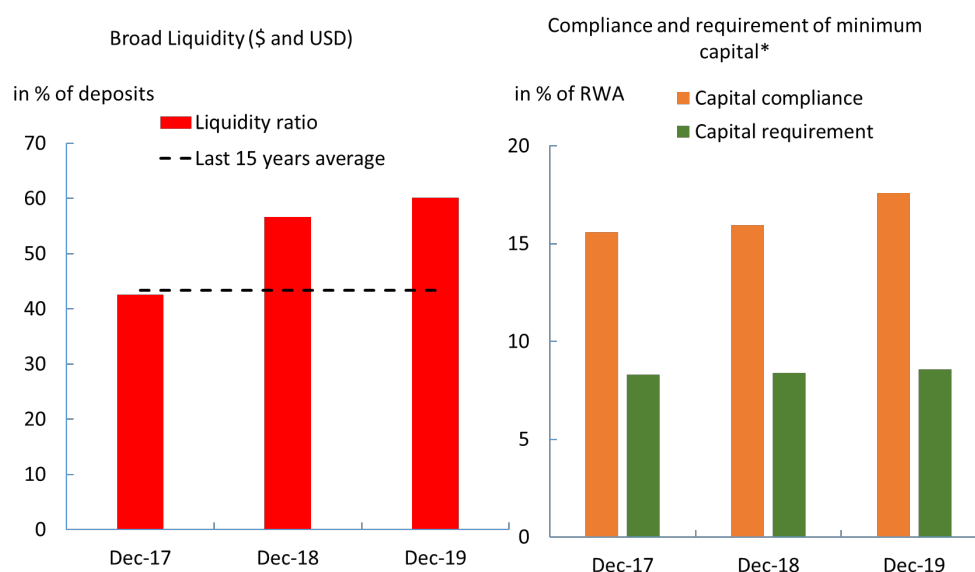
Note: Includes exemptions.

Sources: BCRA.

The financial system's solvency ratios continued to surpass minimum prudential requirements. Regulatory capital totalled almost 17.6% of risk-weighted assets in December 2019. The financial system as a whole complied fully with additional capital buffers. Moreover, the sector's leverage remains quite small. In terms of the Basel standard, the leverage ratio (capital loss-absorbing capacity to total exposure measure) reached 11.9%, considerably exceeding the domestic regulatory minimum of 3% (in line with international recommendations).

Meanwhile, the private sector non-performing loans ratio increased to 5.7%, as of December 2019. Reflecting weak economic activity, this was due mainly to lending to the corporate sector. Nevertheless, total provisioning has continued to be high, covering 98% of the non-performing portfolio (80% if minimum provisions made for the performing portfolio are excluded). Given the financial system's capital levels as detailed above, balance sheet exposure to private sector credit risk – non-performing portfolio net of provisions in terms of capital – is limited for the banking sector in aggregate.

Banking sector: main macroprudential local regulations

As seen above, the macroprudential regulatory framework has helped to ensure that the financial intermediation process in pesos is decoupled from that in foreign currency, and to keep the exposure of banks to public sector credit risk at low levels.

Taking into account the lessons from the 2001–02 local economic and financial crisis,[4] financial authorities have made progress in adjusting the regulatory framework so that exchange rate fluctuations have the least possible adverse effect on the net worth of depositors, debtors and banks, and on the economy as a whole.

To address potential vulnerabilities from foreign exchange market stress, the BCRA ruled in 2002 that foreign currency deposits may be used by banks only to finance borrowers who have receivables from foreign trade transactions and related activities. This macroprudential measure was intended to limit banks' exposure to credit risk arising from potential exchange rate fluctuations on a debtor's balance sheet. Even though the domestic prudential regulations already provided for minimum reserve requirements on deposits, further measures were implemented to strengthen liquidity risk coverage, drawing from the lessons of the 2001 crisis. Specifically, the BCRA established an obligation for banks to keep available (liquid) all funds from foreign currency deposits that were not applied to loans (in foreign currency).

In addition, regulators sought to limit mismatches in bank balance sheets. The prudential regulation on the Net Global Position in Foreign Currency, implemented in 2003, restricts the net currency exposure on bank balance sheets, setting both minimum and maximum limits (expressed in terms of regulatory capital).
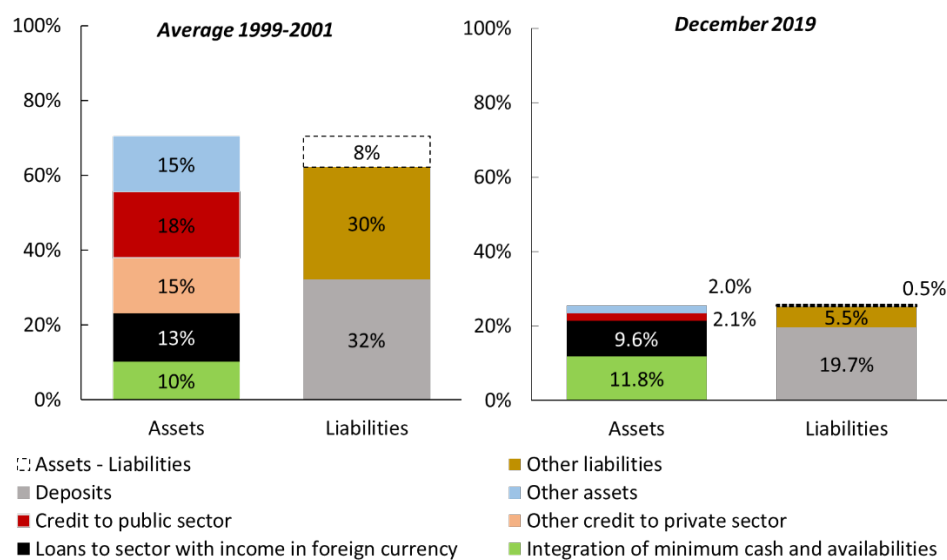
On the other hand, the aggregated exposure of financial institutions to the public sector has remained at historically low levels for over 10 years. This is partly due to macroprudential regulations adopted since 2002, which aim to limit concentration risk, ie the exposure of financial institutions to any single sector of the economy. Currently, the exposure of each financial institution to aggregated public sector financing is limited to 35% of its total assets.[5]

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[4]   See "Boletín Monetario y Financiero", 2002 edition.

[5]   Additionally, limits were also set on the basis of an institution's net worth: (a) 50% of each entity's net worth for financing to the national public sector; (b) 10% of net worth for financing to any provincial jurisdiction or the Autonomous City of Buenos Aires; and (c) 3% of net worth for financing to any municipal jurisdiction. The total financing granted according to (c) shall not exceed 15% of the bank's net worth. Total aggregated financing (cumulation of items (a), (b) and (c)) may not exceed 75% of the institution's net worth.
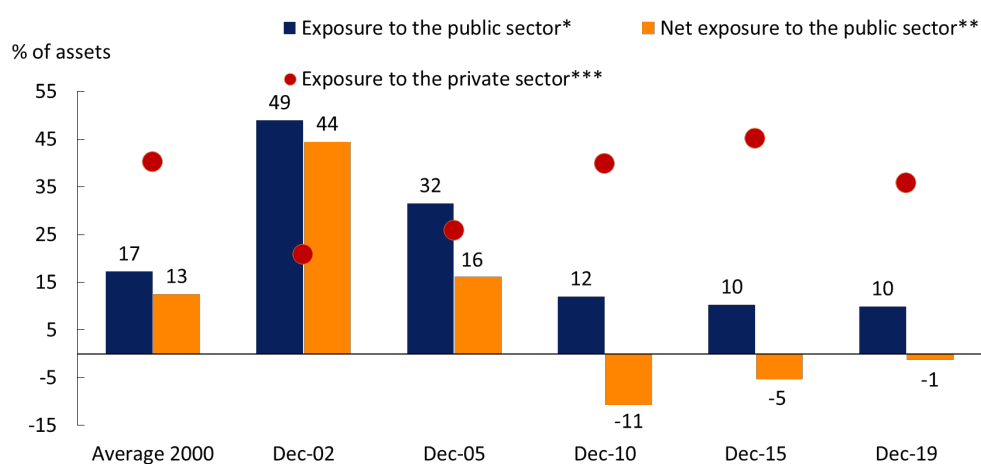
Foreign currency assets and liabilities

Graph 7

Average 1999-2001

- 15%
- 18%
- 15%
- 13%
- 10%

(Assets)

- 8%
- 30%
- 32%

(Liabilities)

December 2019

- 2.0%
- 2.1%
- 9.6%
- 11.8%

(Assets)

- 0.5%
- 5.5%
- 19.7%

(Liabilities)

- ☐ Assets - Liabilities
- ▨ Deposits
- ■ Credit to public sector
- ■ Loans to sector with income in foreign currency
- ■ Other liabilities
- ■ Other assets
- ■ Other credit to private sector
- ■ Integration of minimum cash and availabilities

Sources: BCRA.

Exposure to the public and private sectors – financial system

Graph 8

■ Exposure to the public sector*   ■ Net exposure to the public sector**

● Exposure to the private sector***

% of assets

	Average 2000	Dec-02	Dec-05	Dec-10	Dec-15	Dec-19
Exposure to the public sector	17	49	32	12	10	10
Net exposure to the public sector	13	44	16	-11	-5	-1

*(Position in government securities (not including BCRA securities) + Loans to the public sector) / Total Assets.
(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).   * Total loans to the private sector / Total assets.

Sources: BCRA.

Lessons from Argentina's experience

Argentina's financial system is underdeveloped,basically bank-based and mostly transactional in nature. Low financial market development means that maturity transformation is carried out only to a limited extent. Rather than intertemporal substitution through financial intermediation, private sector decisions focus on the degree of portfolio dollarisation. This limits the effectiveness of conventional monetary policy tools, and calls for an integrated approach. This combines standard tools (such as interest rates or monetary aggregates) with foreign exchange intervention and capital flow management measures.

Argentina's experience in the last three decades provides an excellent illustration of the preceding points. In the 1990s, and after 2016, Argentina implemented two monetary regimes that involved full and fast deregulation of the capital account. Because of their degree of openness and the high speed of their implementation, these two processes can be considered as extreme shocks.

The first policy reform took place in the 1990s. It combined full capital account liberalisation with a pegged foreign exchange regime. It lasted for ten years and ended with a "triple crisis" in the currency, banking and debt markets. The external debt-to-GDP ratio almost doubled between 1994 and 2001 (from 31.4% to 57%), reflecting public and private spending decisions based on a favourable outlook and good conditions at the start of the period.

The second episode started in 2016. It combined full current account openness with a flexible exchange rate regime. It lasted three years, ending with a sudden stop in capital flows and an ensuing current account crisis. It finished with an IMF rescue comprising an extraordinary credit that represented 57% of its lending capacity. The fiscal stance meant that public debt almost doubled in a few years, reaching almost 90% of GDP by end-2018.

Both shocks proved very disruptive and ended up in macroeconomic crises. Yet, notably, these negative outcomes were linked to two very different exchange rate regimes.

A first lesson is to avoid fast and disruptive deregulation of capital flows: this is much like navigating in uncharted waters. A vast amount of literature has dealt with issues of sequencing in the order of liberalisation, sectoral allocation of inflows through the financial system and the subsequently destabilising role of short-term inflows, to name but a few issues associated with a sudden opening-up of the capital account (McKinnon and Pill (1996); Montiel (1998); IMF (2012)).

A second insight has to do with exchange rate regimes. "Corner" systems, such as hard pegs or full flexibility, always tend to start off promisingly, appearing to be the perfect match for a liberalising shock. However, as imbalances mount, they bring on specific problems that are hard to correct. This is especially the case when these regimes are combined with fully fledged capital account liberalisation that opens the way for carry trades and, ultimately, sudden stops.

A third lesson concerns financial system regulation: beware of hidden currency mismatches. In Argentina during the 1990s, banks treated local and foreign currency deposits and credit almost indistincktly, based on the implementation of a one-to-one peg with the US dollar. Meanwhile, the banking system tripled in terms of GDP in only five years. Apparently, banks were not exposed to currency mismatches: they

accepted US dollar deposits and lent in the same currency. But borrowers were heavily exposed to currency mismatches, which proved fatal in the 2001–02 crisis. Once an adverse shock to competitiveness took place, devaluation was unavoidable: a growing current account deficit, with growing foreign indebtedness as its counterpart, became unsustainable. In turn, banks realised that most borrowers had income in local currency only. This produced a large-scale and costly financial crisis.

In fact, a key difference between the currency board regime and the 2016–19 experience was the regulation of the banking system. In this episode, the central bank kept strict limits on currency mismatches and government financing, as well as restricting differential liquidity requirements by currency, as described in Section 2. Thus, the banking sector was basically unaffected by the recent crisis. When the current account deficit proved unsustainable in 2018 and capital flows suddenly reverted, the ensuing devaluation affected asset markets but not the banking system.

Finally, the development of local currency bond markets (LCBMs) is no "silver bullet" for financial stability and financial sector development. In the episode starting in 2016, there was significant development of LCBMs in order to diversify currency risk. A key novelty was the heavy involvement of international hedge funds in this market. What was the reason? In a context of very demanding inflation targets, the central bank used high interest rates as its main instrument for curbing inflation expectations.

The combination of capital account liberalisation, very high interest rates, capital inflows and real exchange rate appreciation made short-term peso investments very profitable. Short-term foreign investors such as hedge funds conducted carry trades using peso-denominated central bank bills and notes. But after April 2018, financial conditions worsened globally, with growing expectations of policy tightening by the Federal Reserve. Foreign short-term investors sold off their positions in peso instruments, and subsequently foreign currency bonds too.
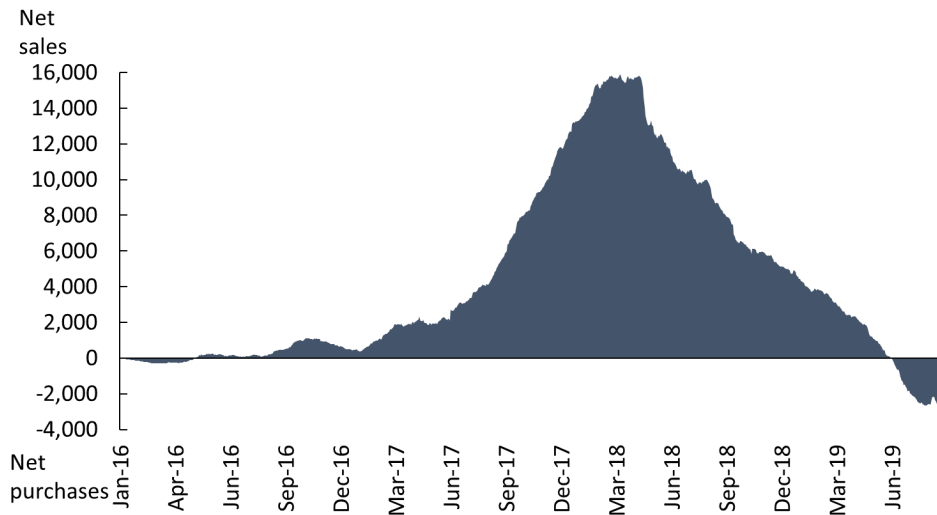
The sudden outflow of foreign funds took place on a scale that could only be processed in a disruptive way by the small domestic market. Cumulative foreign inflows through the foreign exchange market between January 2016 and April 2018 were estimated at almost USD 16 billion (Graph 9). This compares with FX market daily turnover of around USD 2 billion during the same period. Disruption was made worse by the fact that the sell-off comprised, to a substantial extent, the same instruments that the central bank was using to conduct open market operations to achieve its operational interest rate target. All this produced a deleterious signalling effect that was soon followed by local investors.

Although the involvement of foreign hedge funds in LCBMs was useful in diversifying currency risk, it also introduced a direct channel of transmission from the global financial cycle to domestic policy conditions. EME governments and central banks have the same counterparties in both local and foreign currency markets. Thus, decisions taken at hedge fund head offices, based on exogenous shocks or internal preferences, are channelled to both markets. In other words, the participation of these actors in LCBMs increases the interconnectedness and ultimately lessens the autonomy of monetary policy.

Foreign exchange market

Daily cumulative evolution of non-resident flows + Securities traded in the secondary market, USD millions

Graph 9

Net sales

16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
-2,000
-4,000

Net purchases

Jan-16 Apr-16 Jun-16 Sep-16 Dec-16 Mar-17 Jun-17 Sep-17 Dec-17 Mar-18 Jun-18 Sep-18 Dec-18 Mar-19 Jun-19

Source: BCRA

Concluding remarks

To sum up: Argentina's recent experience shows that the use of the interest rate as the only monetary policy tool, together with full capital mobility, leaves the economy exposed to sudden stops of capital flows. This has adverse consequences for price and financial stability. The local financial system was able to cope with the sudden stop that broke out in May 2018, while keeping high levels of liquidity and solvency. This was due to a macroprudential policy that limits key risks, notably foreign currency mismatches and exposure to the public sector. In the same breath, risks to financial stability were contained by the reintroduction of foreign exchange regulations. The design and implementation of both monetary and financial stability policy must factor in the constraints imposed by low financial market development and – looking ahead – by its interaction with new technologies.

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