Transmission mechanisms for monetary policy in emerging market economies: what is new?

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In recent years the macroeconomic environment in emerging market economies as well as in industrialized countries has become more stable in terms of price stability and growth. Nevertheless, international financial markets continue to be a source of uncertainty that poses important challenges for monetary policy, particularly in developing economies. The rapid integration of financial markets has led to increased capital flows and higher liquidity, which contributed to global growth but has also permitted current account imbalances on an unprecedented scale, whose correction, if sudden and unexpected, could be harmful and costly for emerging markets.

The improvements in fiscal policies have been remarkably important, leaving monetary policy plenty of room for playing its role in stabilizing the economy by providing it with a nominal anchor. The movement towards a more active stabilizing role of monetary policy came along with more exchange rate flexibility.

There is no conclusive answer to the question of whether in developing countries, as well as in industrialized ones, greater openness and trade integration have been key factors behind improvements in inflation. The continuous rise in exports by China, India and other countries from East Asia and Eastern Europe clearly became a source of downward pressure on the prices of a wide range of goods and services. Whether or not this has in fact contributed to the present environment of low inflation, there are significant implications for the conduct of monetary policy. There is also a strong and unfinished debate around the role to be played by money and the conduct of monetary policy in an environment of higher globalization.

In the case of Argentina, after 10 years under a currency board regime in which the monetary policy was passive, in January 2002, in the middle of a very deep currency and financial crisis, there was a move in the direction of exchange rate flexibility and monetary policy became active. It is important to recall that the economic recession that began in 1998 shocked the financial sector, reducing the real volume of banking credit to the private sector by practically two thirds. The ratio of bank loans to GDP fell from 24% at the beginning of 1999 to 8% towards the end of 2004.[2]

In that setting, the process of rebuilding monetary capacity had to be gradual, since no instruments or markets were available for the Central Bank of Argentina (BCRA) to influence the demand for funds in the financial system at that moment. At the peak of the financial crisis, the channels of monetary policy did not work.

During the first months of 2002, policy actions were implemented to handle the peak of the crisis in order to stop both the fall of the peso and the persistent drain of money from banks. The BCRA first focused on providing liquidity to financial institutions as much as required to avoid a massive bankruptcy and to stabilize the exchange rate market.

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[1] Central Bank of Argentina.

[2] Due to the crisis, in 2002 the GDP fell 10.2%, inflation went up to 65%, the peso fell around 300% in just four months, open unemployment skyrocketed to 25%, and poverty and indigence indicators reached record levels of 55% and 30% respectively.

An initial step to get some control over monetary aggregates was to set up a market for BCRA notes and bonds (LEBACs), mainly in pesos, which at that time allowed the BCRA to sterilize the monetary effects of assistance to financial institutions. This policy was extremely successful in stabilizing expectations and preventing hyperinflation after the sharp depreciation that the peso had suffered during the first quarter of 2002.

Once the BCRA was able to stabilize expectations and get control over the situation of financial institutions, it recovered a certain capacity to manage the supply of base money so as to preserve certain equilibrium with the demand for funds. Since the interbank market was virtually non-existent at that time, the BCRA did not have enough capacity to influence liquidity through a reference rate. In the face of these restrictions the BCRA decided to conduct monetary policy using an intermediate quantitative monetary target, which since 2002 has been set under an annual Monetary Program (PM).

During 2003 and 2004, the central bank designed a Monetary Program, presented to the Congress, based on intermediate targets for the broad monetary base (BMB) and other monetary aggregates. These quantitative targets are consistent with the inflation target, which is one of the main objectives of monetary policy. The targeting of money aggregates is consistent with BCRA forecasts for the growth in money demand and for real GDP, and with the inflation objective of the BCRA.

Initially, the target was set for the BMB, the monetary aggregate which the BCRA had the most ability to control for two reasons. The first reason was the huge contraction of the banking system after the 1998–2001 crisis. The extremely poor impetus of lending activity kept the monetary multipliers at low and stable levels, so that the MB summed up most of the relevant information about the state of monetary aggregates. The second reason was the immediate availability of data on the BMB, so that the BCRA could very rapidly inform the public of the performance of the Program, to help to build up its credibility.

In 2006, based on the empirical evidence that the demand for M2[3] seemed to be more related to its inflation goal, CPI inflation, and once money multipliers began a clear recovery, the focus for tracking compliance with the Program shifted from the BMB to M2. This change was in response to the positive transformations observed in the banking and financial system during recent years and will result in a better adjusted control of monetary variables than that allowed for by the BMB.

Thus, the approach of the BCRA during this transition process to a more active role for monetary policy has been gradual and pragmatic. This strategy, which is still at work, recognizes the various uncertainties faced by the BCRA. It is widely accepted by policy-makers and academics that, in a world of globalized financial markets, central banks have to deal with unexpected changes in the international environment. At the same time, monetary policy is also facing uncertainty related to the weak knowledge a central bank has about the real model that governs its dynamic interactions with the domestic private sector.

The particular complexity of the local financial system, the lower degree of monetization in the economy, the long periods of macroeconomic instability and the most recent crisis in the banking system all suggest that the problems the BCRA faces are much tougher. It is clear that the frequent structural changes in Argentina make it even more difficult to interpret the evidence shown by its monetary history.

As mentioned above, the passive monetary policy implemented during the period 1991–2001, as well as the lasting effects of the currency and financial crises of 2002 on agents' behavior, added important additional uncertainties. In particular, on the way out of the crisis,

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[3] Means of payments which include the cash held by the public plus the deposits in current and savings accounts, in pesos, of the private and public sectors.

the BCRA did not have much knowledge of the probable effects of its own policy actions on the behavior of economic agents.

The BCRA had to rebuild the instruments and channels of monetary policy, not only because of the disruption created by the currency and financial crises that began in 2001, but also because the focus of the Bank in the past decade had been rather different.

That undertaking has been a main task for the BCRA since 2002. As mentioned before, the market for notes and bonds of the central bank, LEBACs and NOBACs, has been steadily developing as from that year (Figure 1).[4]

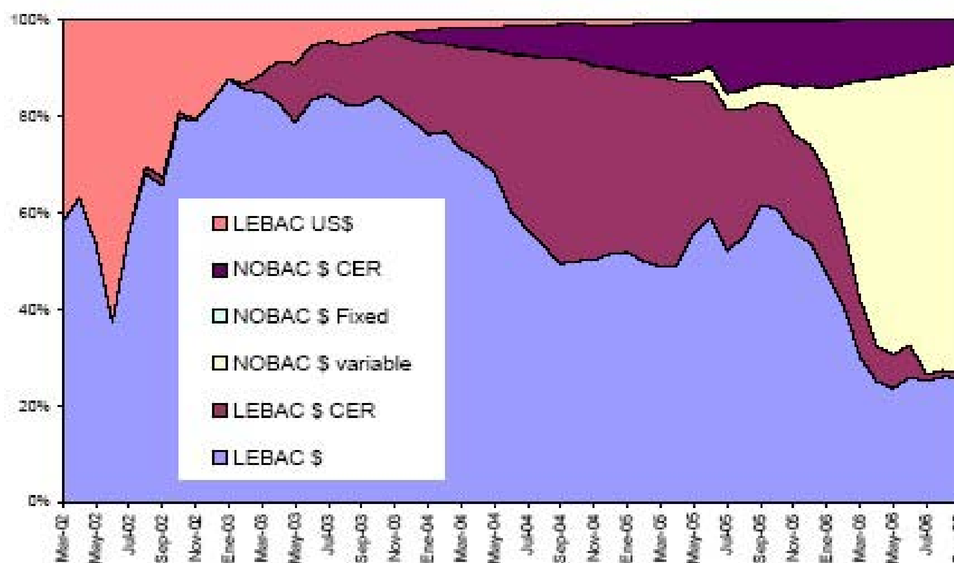
The issuance of central bank notes initially addressed compensation for the expansionary effects of the financing to banks during the crisis and the massive selling of foreign reserves to sustain the value of the peso. In a second stage, it has been used as an instrument to offset the expansionary effects of the precautionary policy of reserve accumulation developed by the BCRA, thus preventing monetary aggregates from deviating from the target.

The central bank has also started active intervention in the repo market to increase the responsiveness of the interbank credit market, which shows strong signs of segmentation. Such intervention, along with the deepening of the market for central bank notes (LEBAC and NOBAC bills) has been helping to generate a benchmark interest rate. The signals are sent by means of an interest rate range (floor and ceiling around the reference rate) that makes it possible to lower the volatility of the interest rate and regulate money market liquidity more efficiently. During this process, the BCRA has also been able to extend the maturity of its debt, creating instruments that help monetary policy influence longer-term interest rates and thus be more effective in affecting investment, consumption and saving decisions.

Figure 1

Central bank instruments

Share of total



[4] Starting in April 2002, the BCRA issued different types of notes and bonds in different periods, adapting its strategy to market conditions (the BCRA issued instruments denominated in pesos and in US dollars, at fixed and variable rates).

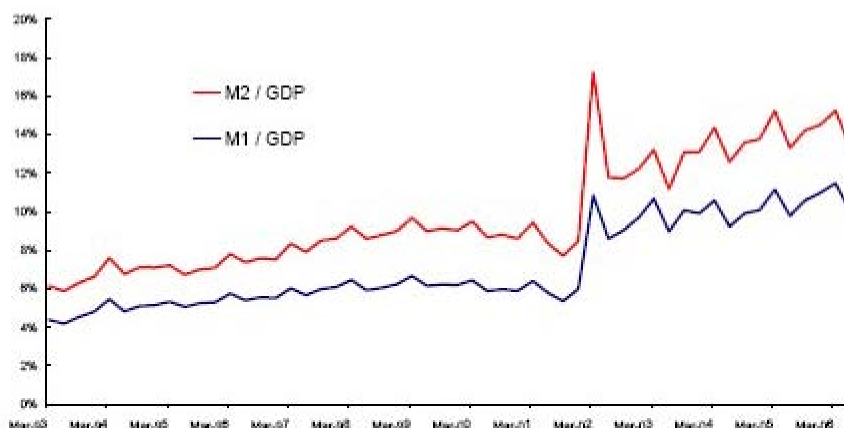
Repo transactions are carried out through the REPO trading session of the electronic over-the-counter market (MAE). Transactions are in pesos, have maturities of up to 30 days, and are settled with non-indexed LEBACs as the underlying asset, with a 10% haircut (the value of the underlying asset delivered in excess of the pesos received). With the aim of regulating liquidity in the money market, the BCRA carries out both repos and reverse repos.[5]

As stressed before, the BCRA had to build knowledge about how monetary impulses are transmitted to the real economy and inflation. Although during times of regime change past history could not be very informative about the current channels of monetary policy, the BCRA has conducted some empirical research on the transmission of monetary impulses to the economy.[6] During the period of low inflation (1993–2006), inflation responded significantly to interest rate shocks, money growth and nominal exchange rate volatility, in that order.

The results of the research indicate that the interest rate channel is important in the transmission of nominal shocks to the real economy and inflation. (Figure 2 illustrates trends in money aggregates.) Money aggregates respond negatively, as expected, to shocks to the nominal interest rate. The response is rapid and persists for two quarters. Impulses on the interest rate also have a rapid negative effect on GDP growth. In this case, the effects of the shock remain significant over three quarters. Shocks to money aggregates (money for transactions as measured by M1) have a positive but much weaker impact on GDP, and their effect lasts for only one quarter. The exchange rate channel also appears to be significant.

Figure 2

Ratios of M1 and M2 to GDP



The success of a central bank in ensuring price stability largely depends on its ability to guide and coordinate expectations. As part of an effort in this direction, the BCRA has developed a Market Expectations Survey (REM). The results of this survey are systematized and published by the central bank, in order to make available to the general public forecasts of main macroeconomic indicators produced by a large group of private consultants, commercial and investment banks as well as academic institutions. The survey summarizes

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5 In the former (repos) the central bank receives pesos and delivers LEBAC spot, producing a contraction of the monetary base (which naturally implies an expansion of the monetary base when the deal matures), and consists in the exchange of one short-term monetary liability for another. In the latter (reverse repo) the central bank delivers pesos in exchange for LEBACs, increasing the monetary base through the spot sale.

6 See Basco, D'Amato and Garegnani (2006) for further details.

relevant information about market expectations and has become an important reference point for domestic and international economic analysts. The results of the survey are also used by the central bank in its assessment of the cyclical position of the economy.

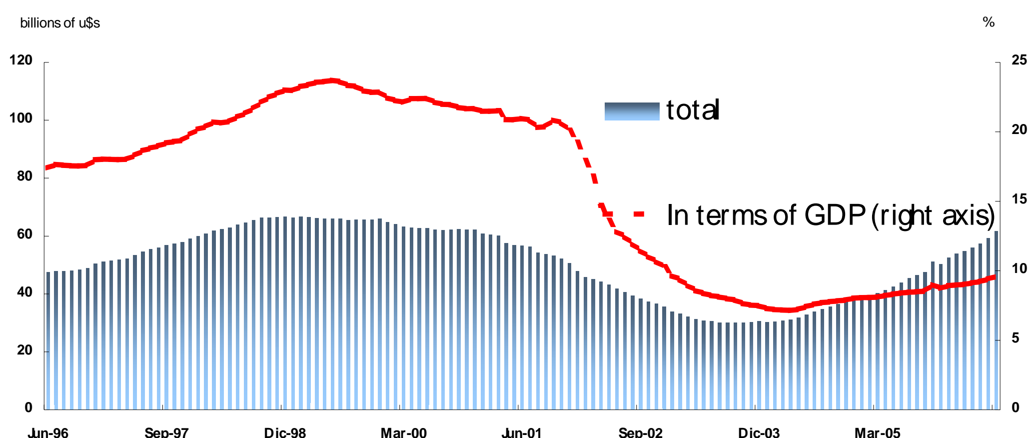
It is important to stress that (despite the research noted above), given the low degree of capital deepening and the reduced ratio of private credit to GDP since the 2001–2002 crisis, changes in interest rates have a larger effect in the short run on output than on headline inflation. At the same time, the above-mentioned lack of full understanding of how transmission mechanisms, which are not independent from politics, operate and the fact that they are far from being stable in time, limited the scope of monetary policy as an instrument for stabilizing economic activity during the first year after the crisis.

With the progressive recovery of financial intermediation, money multipliers are recuperating from the low levels reached during the financial crisis. As public confidence in the domestic currency and the local financial system returned, along with a sustained upturn of the real economy, financial markets began to recover, and the central bank has been gradually gaining control over developments in money and credit markets. The improvement of financial intermediation will also allow the credit channel to play a greater role in the transmission of monetary impulses to the economy. Since the end of 2004, credit to the private sector has been growing very rapidly, at an annual average growth rate of around 30%. This recovery has been led by short-term credit to firms and households while the upturn of mortgages seems to be slower. Despite the strong growth that the sector showed in the period 2005–2006, it can be seen from Figure 3 that the ratio of private credit to GDP is still at low levels (around 10%).

Figure 3

Loans to the private sector

Monthly average



Source: BCRA.

The crowding out by the public sector during the last decade has been a steady concern of the central bank in the last four years. The proportion of public sector debt in banks' total asset portfolio increased dramatically in the nineties. With the recovery of the real economy, the rise of private sector credit demand in conjunction with a better regulatory framework allowed banks to reduce their exposure to public sector debt, but the share of such debt in total assets is still high. It can be said that the recovery of the real economy after the crises was mainly based on self-financing by firms and households.

In order to help banks recompose their portfolios, the BCRA allowed them to adjust the value of their bond holdings as to make them converge to market value in 2007. Taking into

account that the central bank wants to prevent banks from being excessively exposed to government debt risk as they were in the past (particularly during the late nineties), important changes have been introduced in prudential regulations: government debt holdings in banks' "banking book" are now subject to capital requirements that gradually converge to the Basel standard (8%). This is a recognition of the risky nature of this asset and the need to prevent banks from taking excessive risks. Additionally, the central bank imposed a global limit of 35% for the total exposure of banks to the public sector.

The BCRA is also developing policies to stimulate bank financing to the private sector, both households and firms, while managing banking risks. For households and small enterprises the central bank encourages the use of mathematical techniques, such as credit scoring, which require less specific information on debtors. For mortgages, a higher loan to value ratio was allowed for tenants with a good rent payment history who do not own a home. Incentives for banks to lend to private sector firms and to extend the maturity of such loans have also been provided.

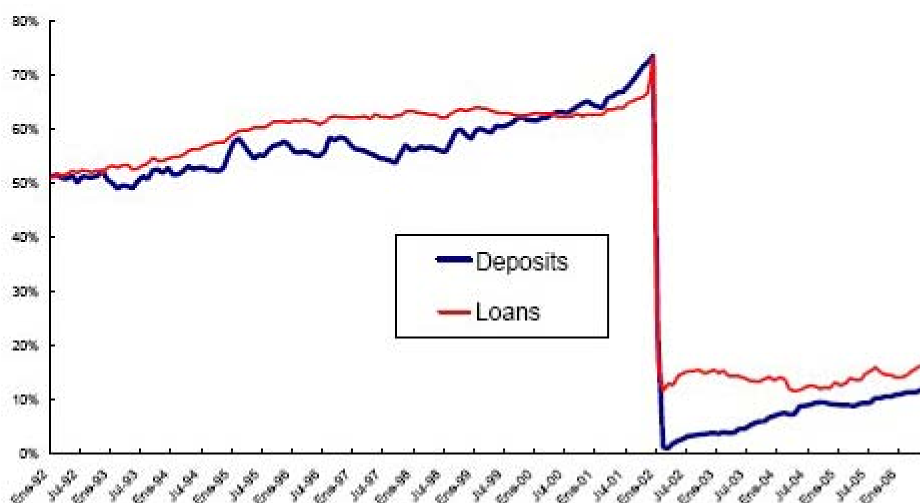
In order for monetary policy to be fully effective, domestic currency must recover a major role in transactions and savings. The Argentine economy, and in particular the financial system, were highly dollarized (Figure 4). It is important to stress that in a highly dollarized economy the speculative money demand is made in a foreign currency. So when macroeconomic volatility rises and general confidence in the price of domestic assets falls, there is no demand for local currency but only for foreign currency. The result is that a financial crisis triggers an external balance crisis.

After the currency and financial crises of 2002, an active process of de-dollarization of financial assets began. The abandonment of the currency board alone implied the end of the implicit currency insurance created by the Convertibility Law. The central bank accompanied this process with several regulatory changes aiming to de-dollarize bank balance sheets and prevent them from taking excessive currency risk.

On the one hand, financial restrictions were introduced on the use of dollar deposits and higher bank reserves were required against such deposits. Restrictions were also imposed on the allocation of foreign currency denominated deposits by banks. Such deposits now can only be applied to financing tradable sector firms or to long-run investment projects which foster export sector production. The measure seeks to prevent the solvency risk created in the previous decade by unrestricted foreign currency financing to debtors whose income was denominated in the domestic currency.

Figure 4

Dollarisation ratio



Finally, it is important to mention that the de-dollarization of financial assets has been significant: the share of peso deposits to total deposits increased from 34% in 2001 to 90% at the end of 2006.

Reference

Basco, E, L D'Amato and L Garegnani (2006): "Crecimiento monetario e inflación: Argentina 1970–2005", *BCRA Working Paper* no 12, August.