2010

Monetary policy during the global financial crisis of 2007-2009: the case of Peru

Zenon Quispe

Renzo Rossini

Monetary policy during the global financial crisis of 2007–09: the case of Peru

Zenon Quispe and Renzo Rossini[1]

1. Introduction

In terms of the implications for emerging market economies, the recent global financial crisis has had two main stages. The first stage, between the last quarter of 2007 and the collapse of Lehman Brothers, was characterised by important capital inflows and the second, post-Lehman, stage was associated with a rapid and severe deterioration of external conditions. The management of the crisis by emerging market central banks required, in both stages, a combination of conventional and unconventional monetary policy measures due to the need to preserve the monetary policy transmission mechanism. It is interesting to note that in several countries, including Peru, the sequence of monetary policy adoption began with the set of unconventional measures due to the weakening of the interest rate channel during the high uncertainty period in the last quarter of 2008.

The combination and sequence of monetary policies showed the importance of keeping a high level of liquidity at three levels: international reserves at the central bank, liquidity of financial intermediaries and an adequate position of public debt in terms of its average maturity and currency composition. A comfortable level of liquidity allows the central bank to credibly provide sufficient funds in domestic and foreign currency so as to ensure a credit flow during the crisis. A high level of international reserves also allows the central bank to intervene in the foreign exchange (FX) market to prevent panic or excessive volatility that could lead to a financial crisis and, thus, to a recession.

2. Partial financial dollarisation

Peru's financial system has a long history of dollarisation of deposits and credits, which is explained by the severe macroeconomic imbalances of the 1970s and 1980s and the lack of instruments adjusted to the price index. Despite better economic conditions and stable macroeconomic fundamentals, inertia, transaction costs and an underdeveloped capital market explain the slow decline of the relative importance of deposits and credits in dollars. Chart 1 shows that the decline of the dollarisation ratio has been slow but steady, from a peak of 82% in 1999 to 50% in 2009.

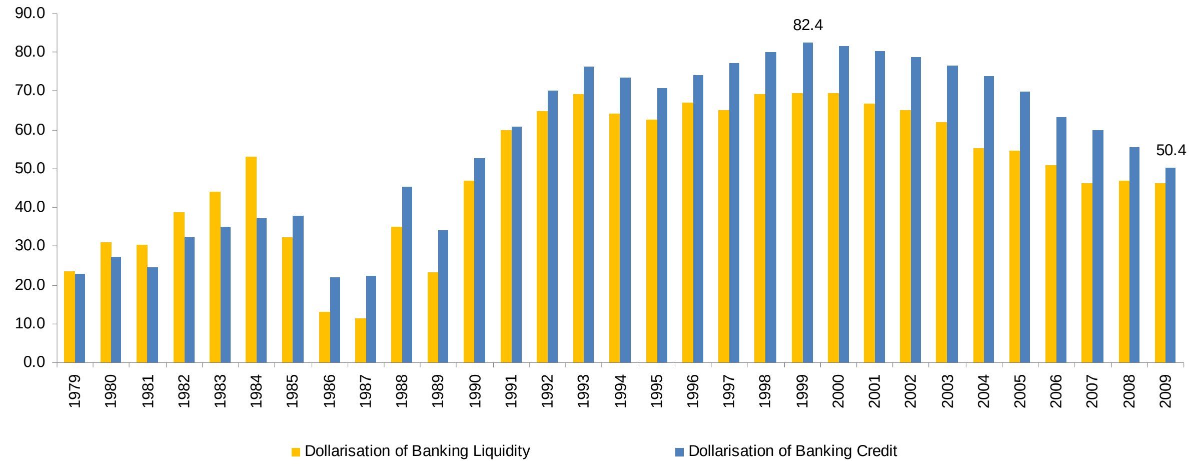
Dollarisation magnifies the reaction of financial intermediaries to sharp movements in their funding or to high exchange rate volatility. As a result, the economy is prone to credit booms and busts associated with: (a) the flows of foreign currency deposits or foreign credit lines; and (b) exchange rate movements that affect the quality of the credit portfolio. Thus, in cases of non-renewal of external credit lines or exchange rate depreciation, banks will react by shortening their lending to the private sector, which in turn will cause a negative impact on economic activity. Dollarisation therefore alters the transmission mechanism of monetary policy.

---

[1] Central Reserve Bank of Peru. Research assistance was provided by Alex Contreras.

Chart 1

Peru: Banking Sector Dollarisation
(As percentages of total liquidity and credit)



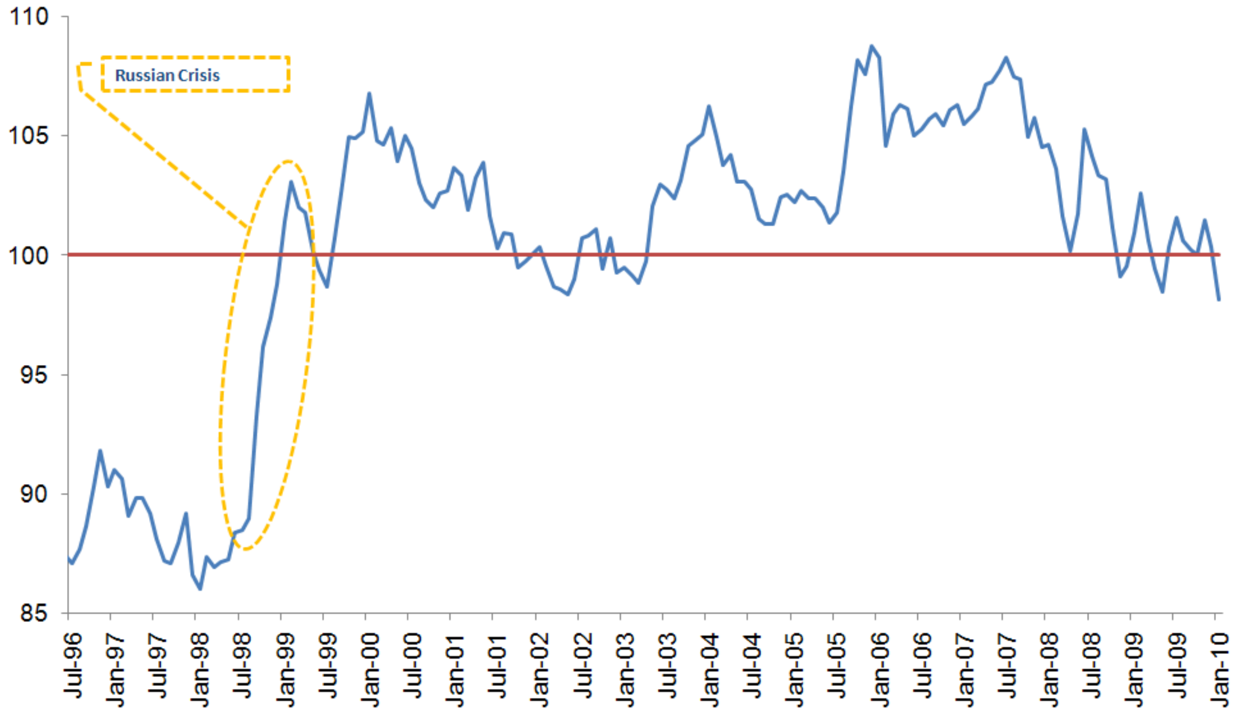
The Russian crisis of 1998 illustrates the vulnerabilities faced by economies with financial dollarisation. In the case of Peru, the sharp currency depreciation and the sudden stop of foreign credit lines induced by the Russian crisis (see Chart 2) resulted in a domestic credit crunch, with a severe and long-lasting impact on economic activity. In Berróspide and Dorich (2003), the credit contraction resulted from banks' reaction to the deterioration of loan quality. A summary of the effects of the Russian crisis on Peru's financial system is contained in Box 1.

Box 1: Effects of the Russian Crisis: 1998-1999

- Real currency depreciation: 13% September 1998-August 1999
- Balance sheet effect: Increase in the foreign currency non-performing loan ratio from 5% to 10%
- Sharp decline of short-term external credit lines: -50% in August 1999 (12-month rate of variation)
- Credit crunch: Credit growth in foreign currency declined from 26% in July 1998 to -4% in July 1999 (12-month rate of variation)
- Fear of the effectiveness of the central bank role as lender of last resort
- Financial crisis: the number of banks declined from 26 to 14

Chart 2

Peru: Effective Real Exchange Rate Index
(December 2001= 100)



In order to reduce the risks involved with financial dollarisation, the Central Bank of Peru (BCRP) implemented a preventive policy framework based on reserve requirements on banks' liabilities and international reserve accumulation. Additionally, using the experience gained from various external shocks, especially the Russian crisis of 1998, the BCRP designed an action plan to prevent a credit contraction during crisis events. Therefore, the monetary policy framework in Peru, in addition to the common features of an inflation targeting (IP) regime, includes a set of measures to deal with the risks of financial dollarisation.

Box 2: Hybrid inflation targeting

Inflation Targeting ⟷

- Inflation Target: 2% ± 1% tolerance
- Operational Target: Overnight interest rate

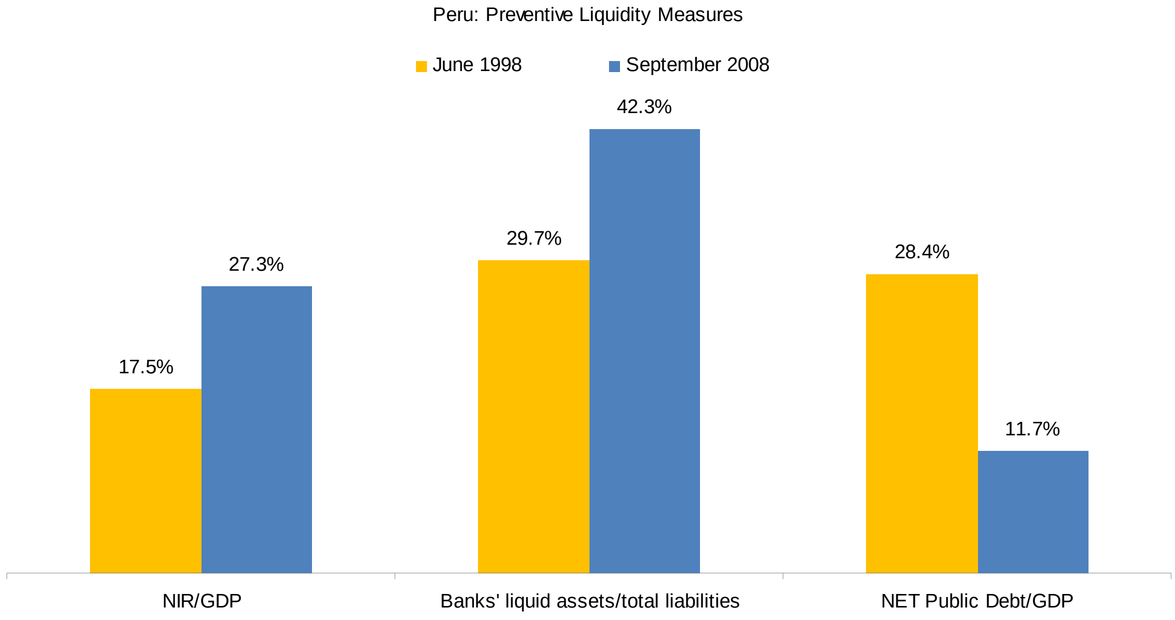
\+

Control of Dollarisation Risks ⟷

- Liquidity Risk:
  - High reserve requirements on foreign currency deposits
- Exchange Risk (Balance sheet effect):
  - Sterilised forex interventions to reduce volatility

The preventive measures to reduce the vulnerabilities related to financial dollarisation consider the possibility of a series of simultaneous shocks that could result in a financial crisis. Therefore, the strategy focuses on three levels of liquidity, as referred to above: (a) the accumulation of international reserves at the BCRP; (b) high liquidity requirements of financial intermediaries; and (c) a solid public sector financial position. Chart 3 shows the levels of these liquidity indicators for June 1998, just before the Russian crisis of 1998, and for September 2008, prior to the collapse of Lehman Brothers.

Chart 3



The accumulation of the BCRP's international reserves has been crucial in creating a liquidity cushion against both negative simultaneous shocks in the foreign currency funding of banks and sharp currency depreciation. For this reason, the emphasis on an adequate level of reserves goes beyond the level of adequacy of international reserves compared with the stock of short-term liabilities, as shown in Chart 4, including the size of the banking system's domestic liabilities. By the end of 2009, the stock of international reserves represented 110% of total short-term foreign liabilities and M2 (Chart 5).[2]

The risks associated with dollarisation have also been reduced through prudential regulations,[3] including additional provisioning for credit extended to borrowers which does not generate revenues in foreign currency. Additionally, with improved asset-liability management, the public sector issued local currency debt with maturities of up to 30 years and extended the total public debt average maturity to 11 years.

---

[2] Obstfeld et al (2009) conclude that the scale of reserves needed to backstop emerging markets surpasses the resources of multilateral organisations and that international reserve accumulation in emerging economies helped those economies to face the severe stress period following the bankruptcy of Lehman Brothers. They highlight the fact that countries with a higher ratio of reserves to M2 were able to prevent currency depreciation.

[3] The Superintendency of Banks, Insurance Companies and Pension Funds Associations is in charge of the supervision and regulation of the financial system in Peru.

Chart 4

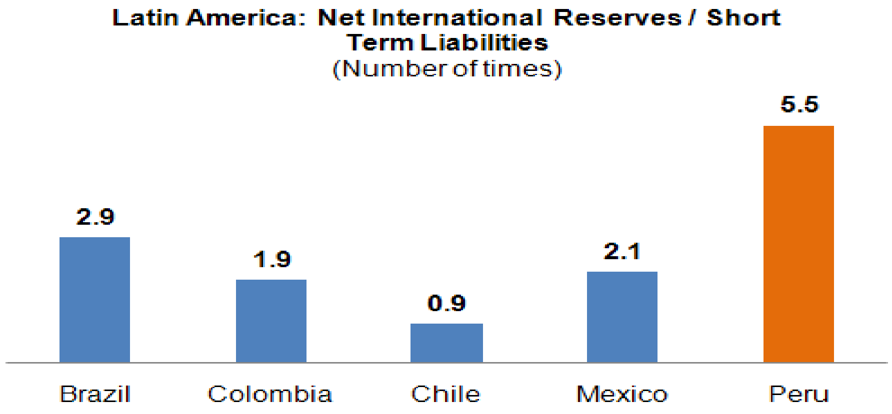
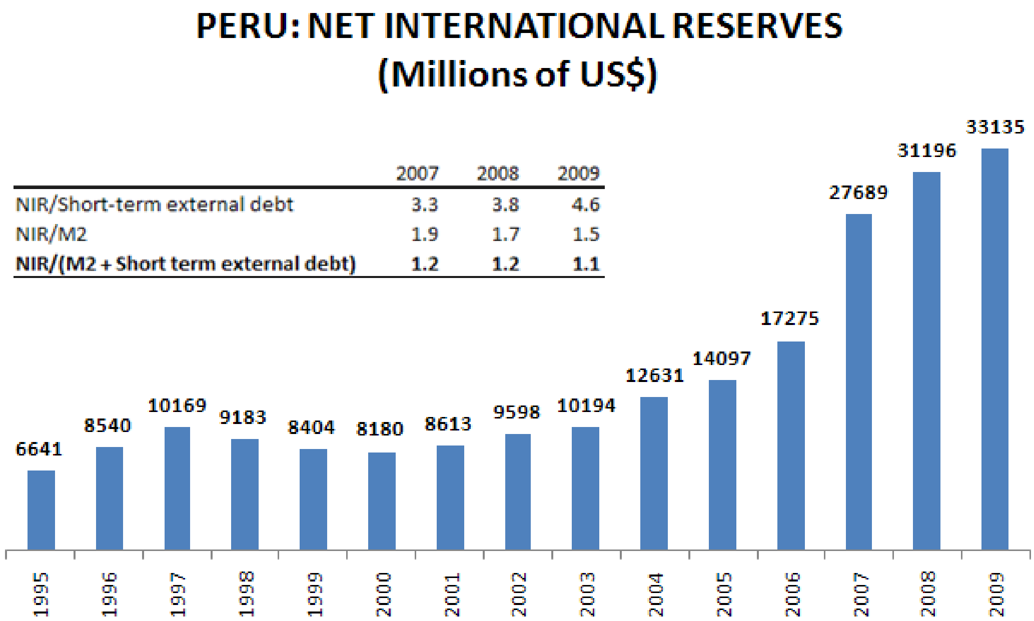


Chart 5



	2007	2008	2009
NIR/Short-term external debt	3.3	3.8	4.6
NIR/M2	1.9	1.7	1.5
NIR/(M2 + Short term external debt)	**1.2**	**1.2**	**1.1**

3. Unconventional central bank measures in emerging market economies

According to Ishi et al (2009), the unconventional monetary measures used by emerging economies during the recent global crisis have been mainly foreign and domestic currency short-term liquidity easing measures. Other unconventional measures, such as credit easing and quantitative easing,[4] were not necessary given the limited stress faced by emerging economies during this episode.

---

[4] Credit easing is the direct or indirect provision of credit by the central bank to targeted borrowers, possibly in need following the breakdown of credit markets. Frequently, the aim is to reduce credit spreads in specific sectors, such as housing loans that may be of high macroeconomic importance. Quantitative easing involves the direct and unsterilised purchase of government securities. The aim in that case is to lower the benchmark yield curve and boost economic activity. It is almost always used when monetary transmission is seriously impeded and the policy rate is declining towards zero.

During the recent global financial crisis, central banks from advanced economies relied first on conventional monetary measures, reducing the policy rate to levels close to zero, switching afterwards to a variety of unconventional monetary measures. In the case of Peru, and other emerging economies, the sequence was reversed – liquidity easing measures were implemented first, followed by policy rate reductions when the FX and money markets had stabilised.

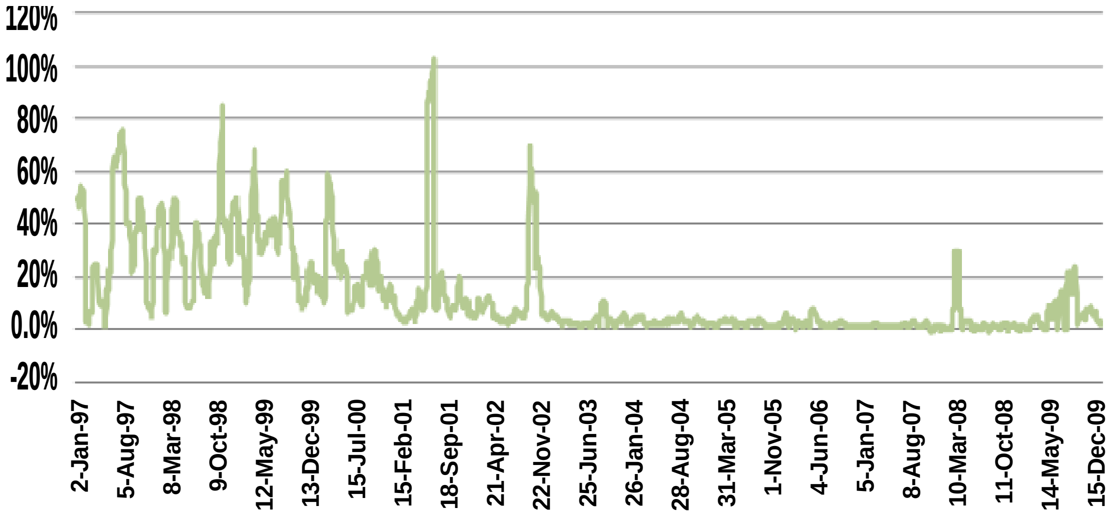
Ishi et al (2009) find that almost all emerging economies implemented liquidity easing measures in domestic currency and most of them injected FX liquidity. One of the unconventional measures for liquidity injection used by emerging economies has been the **relaxation of reserve requirements**, including cuts in the reserve requirement ratios and increases in exemption thresholds. In most cases, the easing of reserve requirements was not accompanied by a decrease in the policy interest rate, suggesting that central banks were aiming at easing liquidity rather than changing their monetary policy stance. They used **systemic domestic liquidity arrangements**, easing terms of existing standing and market-based liquidity-providing facilities (extending maturities, lowering collateral haircuts, increasing the frequency of auctions). Eligible collateral was considerably broadened in many cases; several central banks provided domestic liquidity to targeted institutions which were expected to distribute it among the market. **Foreign exchange liquidity injection** was used by many central banks to ease the terms of existing FX facilities (extending maturities, broadening collateral, etc) and introduce new FX liquidity facilities, such as dollar repo and swap facilities. In addition, FX intervention can be used as a channel to inject foreign currency liquidity and, in this regard, is considered an unconventional monetary policy tool.

Emerging markets, including Peru, were actually tightening their policy stance, raising policy rates until September 2008, after which they implemented unconventional policy measures followed by conventional ones. Prior to September 2008, emerging economies were facing capital inflows and inflationary pressures. They initiated unconventional measures in September 2008 in response to the sudden tightening of global liquidity. As stress in the global dollar markets intensified, the foreign exchange available in local markets quickly dried up. Emerging market economies seemed to rely mostly on direct instruments, such as easing reserve requirements, compared to advanced economies. The postponement of policy interest rate reductions is associated with the risk of further exchange depreciation and the disconnection of other interest rates with the policy rate. Thus, emerging market central banks concentrated their actions on ensuring market liquidity and avoiding a credit crunch.

Despite concerns regarding exchange rate volatility, on this occasion the emerging market central banks did not increase the policy rate during the crisis, preferring instead to implement an independent and anticyclical monetary policy. In part, the greater level of international reserves allowed them to smooth the markets first, keeping the policy rate unchanged, and then implement a stimulatory monetary policy. The rise of a more independent monetary policy can be confirmed by the reduction of interbank interest rate volatility relative to exchange rate volatility (Chart 6).

Chart 6

Peru: Relative Volatility of the Interbank Interest Rate and the Exchange Rate, 1997-2009



4. Monetary policy during the subprime crisis

The global financial crisis has involved two main stages appearing sequentially since the initial response of developing countries' central banks in the last quarter of 2007. The first stage, pre-Lehman Brothers, was characterised by important capital inflows towards emerging markets, and the second stage, post-Lehman Brothers, was associated with a drain of international liquidity from emerging markets.

4.1 Pre-Lehman Brothers stage of the global financial crisis (August 2007–September 2008)

During the first stage, the enormous amount of liquidity provided by the central banks of mature economies pushed up the trade surplus in emerging markets and, more importantly, generated a great amount of capital flows, appearing in the economy both as assets in foreign and domestic currency. In Peru, this first stage coincided with certain indicators of increasing domestic demand. The assessment of external conditions pointed to a temporary situation, with a downward risk that eventually emerged. The policy combination during the first stage of the crisis included conventional and unconventional measures with a contractive stance in order to prevent the overheating of the economy, as described in Box 3.

Box 3: Pre-Lehman Brothers Policy Actions

Monetary Policy Responses: August 2007-August 2008

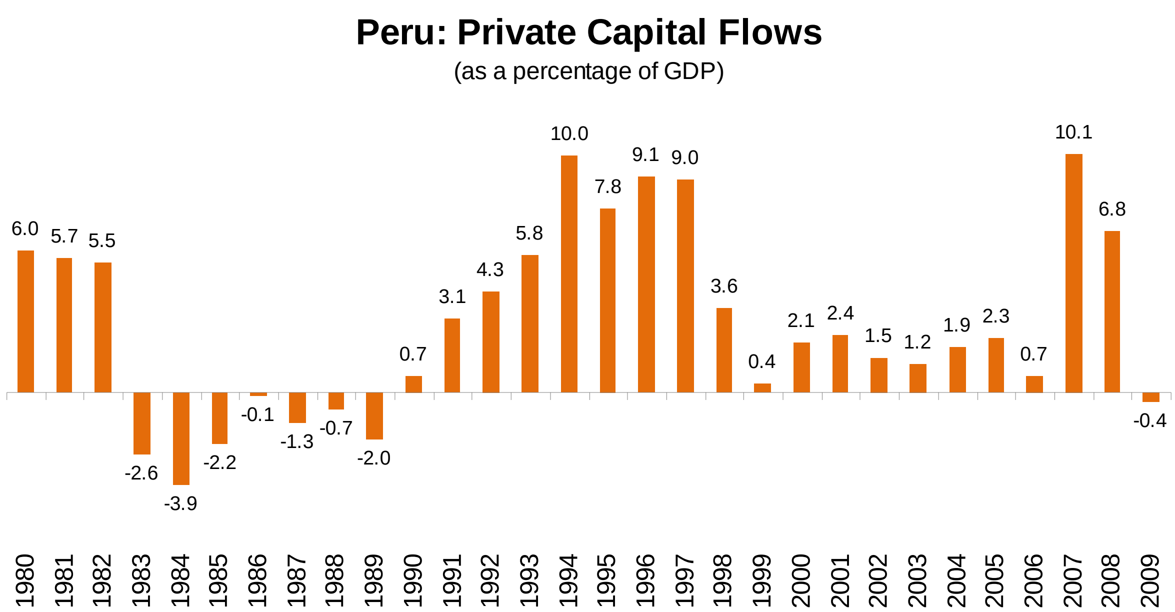
- Reserve Requirements as a first line of defence
  - Higher reserve requirements in domestic and foreign currency
  - 120% marginal reserve requirement on domestic currency deposits of non-residents
- Sterilised FX intervention
  - Purchases of USD 8,4 billion
  - Sterilisation with central bank certificates and fiscal surplus
- Conventional monetary tightening
  - Increase of the policy rate by 200 bps to 6,5%

4.1.1 Unconventional policy responses

As mentioned above, the pre-Lehman Brothers period was characterised by important capital inflows to emerging market economies. In the case of Peru, a significant inflow of short-term capital was observed in the market of local currency instruments in January 2008.

These capital inflows were reflected in an important increase in domestic securities (central bank certificates, Treasury bonds and bank deposits) held by non-resident investors, which increased from US$ 2.8 billion in December 2007 to US$ 4.5 billion in January 2008. After reaching a maximum level of US$ 6.3 billion in April, they started to decline in May. Chart 7 shows the important increase of capital flows to Peru at an unprecedented 10.1% of GDP in 2007 and a high level of 6.8% in 2008.

Chart 7



In order to neutralise these capital flows that threatened to expand liquidity in the financial system in an undesired manner, the BCRP raised reserve requirements in domestic and foreign currency, combining this policy with a series of other measures aimed at discouraging holdings of central bank instruments by non-resident investors. The rate of marginal reserve requirements in domestic currency was raised from 6.0% to 25% (Chart 8), the rate of reserve requirements for deposits of non-residents was raised to 120% and the rate of marginal reserve requirements in foreign currency was raised from 30% to 49% (Chart 9). These measures also allowed the high growth of credit in soles and dollars to be offset, thereby controlling domestic demand and its impact on inflation.

Chart 8

Domestic currency reserve ratios

(percentage of TOSE)

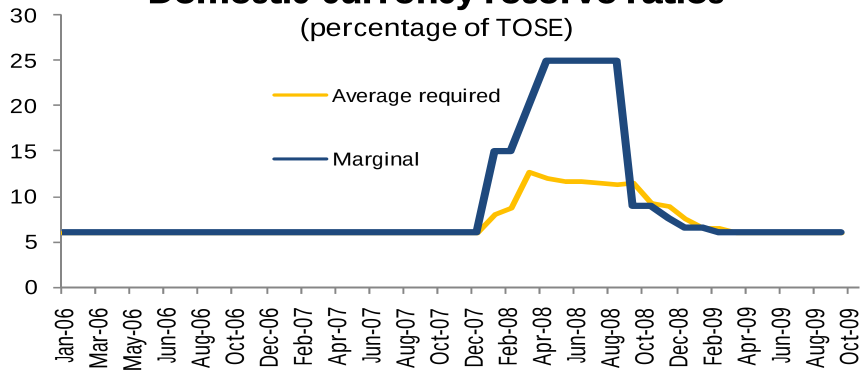
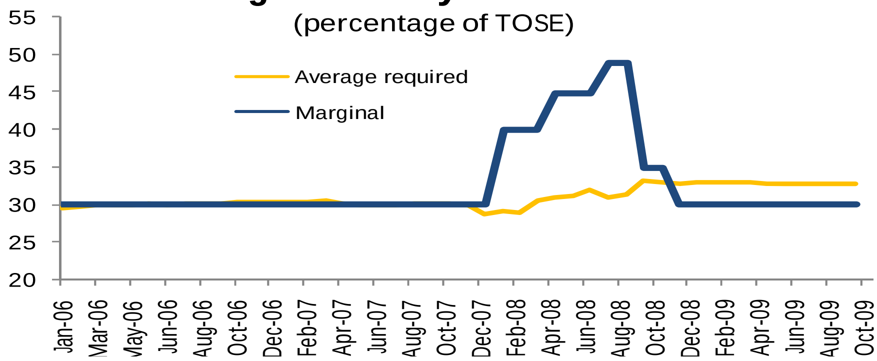


Chart 9

Foreign currency reserve ratios

(percentage of TOSE)



It is worth mentioning that in September 2007, the BCRP adopted an unconventional measure, eliminating reserve requirements for external loans with two-year or longer maturities with the purpose of inducing the credit structure of the local financial system to be less vulnerable to external shocks. This measure changed the structure of the banking system's foreign currency funding sources from short to longer term maturity of over two years) reducing their vulnerability to sudden stops in short-term capital flows. The longer-term external funding of banks increased from 17% of total external funding in October to 50% in December 2007.

The BCRP also increased the pace of interventions in the FX market, purchasing US$ 8.4 billion to prevent the balance sheet effect that implies excessive exchange rate volatility. Banks' liquid position in soles increased significantly, generating a much wider spread between the interbank interest rate and the monetary reference interest rate.

4.1.2 Conventional policy responses during the pre-Lehman Brothers stage

A series of domestic and external supply shocks affected the dynamics of inflation and pushed up the expected inflation. This led the BCRP to gradually adjust its monetary policy stance in order to help maintain price stability. Thus, between September 2007 and

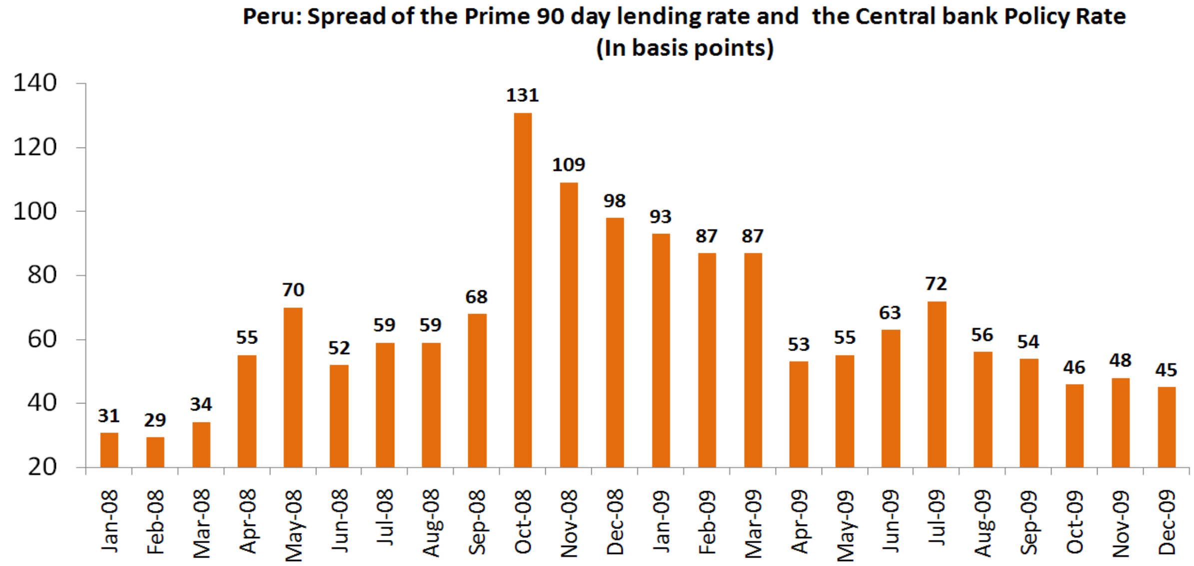
September 2008, the BCRP raised the reference interest rate on six occasions (25 basis points each time), from 5% in September 2007 to 6.5% in September 2008, so that inflation would gradually converge towards the target range and reach the 2% target by end-2009, as expected.

Following the collapse of Lehman Brothers in September 2008, the uncertainty and risk generated by the deepening of the global financial turmoil interrupted the transmission mechanism from the policy rate to the market rates and to the behavioural macroeconomic fundamentals. This situation can be clearly observed in the significant increase in the market interest rate spreads (see Chart 10). The domestic currency lending prime rate spread against the policy rate increased from 59 basis points in August 2008 to 131 basis points in October of the same year. These higher spreads persisted within the credit markets until February 2009.

4.2 Post-Lehman Brothers stage of the global crisis

During the second stage of the global financial crisis, liquidity conditions in emerging economies, including Peru, became tighter as a result of the deepening of the crisis and generalised uncertainty, as reflected in the reduced number of transactions carried out in the money market and economic agents' greater preference for liquidity.

Chart 10



As shown in Box 4, the first measures to be implemented during this second, post-Lehman Brothers, stage were oriented towards providing liquidity in domestic and foreign currency. The BCRP activated its full monetary policy operational procedures, principally those advocated to extend the maturity term of the liquidity provisions to the financial system, as well as to ease the reserve requirement ratios, and when it was clear that the FX and money markets had become more stable, the BCRP started to reduce its policy rate in February 2009.

Box 4: Post-Lehman Brothers Policy Responses

Monetary Policy Responses: September 2008-December 2009

- Liquidity support
  - Reduction of reserve requirements in domestic and foreign currency
  - Increase of the amount and maturity of the central bank's REPO (to 1 year)
  - New central bank swap facility
  - Reduction of the stock of sterilisation instruments
- Intervention in the FX market
  - Sale of USD 6,9 billion
  - Issue of certificates indexed to USD
- Conventional monetary stimulus
  - Reduction of the policy rate by 525 bps to 1,25%

4.2.1 Unconventional policy responses: recovering the transmission mechanism

During this period of stress, with a collapse of worldwide trading activity, a weakened global economy and a reduction in commodity prices, the high degree of uncertainty induced important capital flows from emerging economies to the Treasury bills market of the United States. The generalisation of this behaviour broke the links between policy rates and money and credit market rates around the world.

In normal circumstances, reductions in the policy rate signal the easing of monetary and credit conditions, enhancing expenditure and economic activity as inflation expectations are anchored to the long-term target level. However, in crisis scenarios, the financial stress and higher risk aversion block the policy rate transmission channels, significantly reducing its signalling power. Moreover, in partially dollarised economies, the fluctuation of the exchange rate exerts even greater stress on the balance sheet of economic agents, with the risk of accelerating the recessive impacts of the crisis. In these circumstances, the second best option is to adopt unconventional monetary policy actions. Following the failure of Lehman Brothers, the BCRP actively used unconventional policy measures in order to provide liquidity to the domestic financial market, guaranteeing the smooth functioning of payment systems, reducing the interest rate spreads in the money and capital markets and, most importantly, avoiding a credit crunch.

As of October 2008, the BCRP interrupted the process of gradual adjustments to its monetary stance and reoriented its efforts to providing liquidity to the domestic financial system and reducing extreme exchange rate volatility to neutralise possible balance sheet effects in the economy, without neglecting its role of preserving price stability.

During the first stage of the global financial crisis, the increases implemented in the reserve requirement rates in PEN soles and US dollars allowed financial entities to accumulate liquid assets in both currencies in a context of important capital inflows. Given the severe constraints of international financial liquidity characterising the second stage of the global crisis (after the failure of Lehman Brothers), these liquid assets accumulated as reserve requirements were made immediately available in order to guarantee normal operations in the money market. The BCRP reduced the reserve requirement ratios from 25% to 6% and from 49% to 30% in domestic and foreign currency, respectively – levels similar to the ratios observed before the start of the global financial crisis.

The actions during the first stage of the crisis helped to improve the level of international liquidity and provided greater credibility for the second stage of policy intervention. After the collapse of Lehman Brothers, the main goal of monetary policy was to prevent a credit crunch caused, as in the Russian crisis of 1998, by an overreaction of financial intermediaries to the non-renewal of foreign credit lines or to a possible deterioration of the quality of the loan portfolio. The size of the full range of instruments deployed in the first six months after the failure of Lehman Brothers was equivalent to 9.6% of GDP (Table 1).

Table 1: Total Liquidity Injection

Peru: Monetary Operations of the Central Bank

(in millions of PEN)

	Flows Sep-2008-Mar-2009	As a percentage of GDP
1. REPO	5 989	1.6
2. Central bank certificates	26 688	7.2
3. Central bank swaps	735	0.2
4. Reserve requirements	2 334	0.6

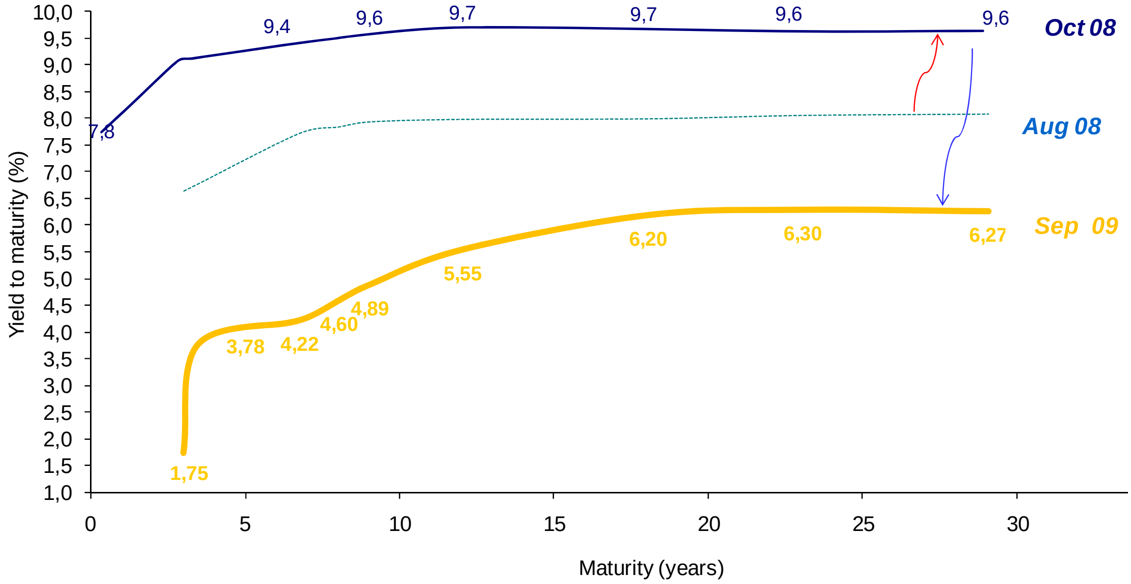
Additionally, the BCRP increased its range of monetary operations to allow the financial system more flexible liquidity management in domestic and foreign currency. Furthermore, since October 2008, the BCRP has reduced reserve requirements in soles and dollars and external credit lines have been exempt from reserve requirements.

Another unconventional monetary policy action was implemented to preserve the market liquidity of the system in order to maintain the collateral value of the assets for money market operations and to act as a benchmark for longer-term bank lending operations. Parallel to the BCRP certificate repurchases, the public sector also bought the central bank's Treasury bills in the capital markets.

The BCRP was one of the first to adopt this measure (October 2008). These unconventional monetary policy actions allowed the gradual return of market interest rates – the interbank market, BCRP certificates and treasury bonds (BTP) – to levels observed before the deepening of the financial crisis in August 2008. For example, the yield on 30-year Treasury bonds, which rose from 8.1% at end-August to 10.2% on 28 October, declined to 7.6% in January 2009 and 6.7% in September 2009 (Chart 11).

Chart 11

Secondary market for sovereign bonds[1/]



1/ Monthly average.

Supported with appropriate levels of international liquidity which had been built up as a pre-emptive measure during the pre-Lehman Brothers phase of the crisis, the unconventional policy actions of the BCRP prevented the global financial crisis from having any major impact on the Peruvian financial system, thereby preserving its domestic liquidity levels and minimising deviations of market interest rates from the policy rate, as well as minimising any balance sheet effect associated with the financial dollarisation of the economy and preserving the dynamism of credit markets by guaranteeing normal flows to the real economy.

In this way, the initial impact of the international financial crisis on the Peruvian financial system was mitigated because of the adequate levels of international liquidity of the local financial system and the timely monetary policy actions. These measures not only prevented a balance sheet effect in the economy, which might have generated a negative impact on the evolution of credit and economic activity, but also the deterioration of liquidity levels of financial entities, as well as interest rate deviations from the reference rate established by the BCRP.

The international liquidity restrictions during this phase of the crisis exerted pressure on the FX market and, in order to prevent any balance sheet effects from reducing extreme exchange rate volatility, the BCRP, from September 2008, sold foreign currency for a total of USD 6.8 billion and issued dollar-indexed certificates for a total of US$ 3.3 billion (PEN 7.9 billion). As shown in IMF (2009), the BCRP's FX intervention is geared towards reducing exchange rate volatility and not fixing a path (Chart 12). In general, the Peruvian currency has been one of the currencies with lower volatility in the region (Chart 13).

Chart 12

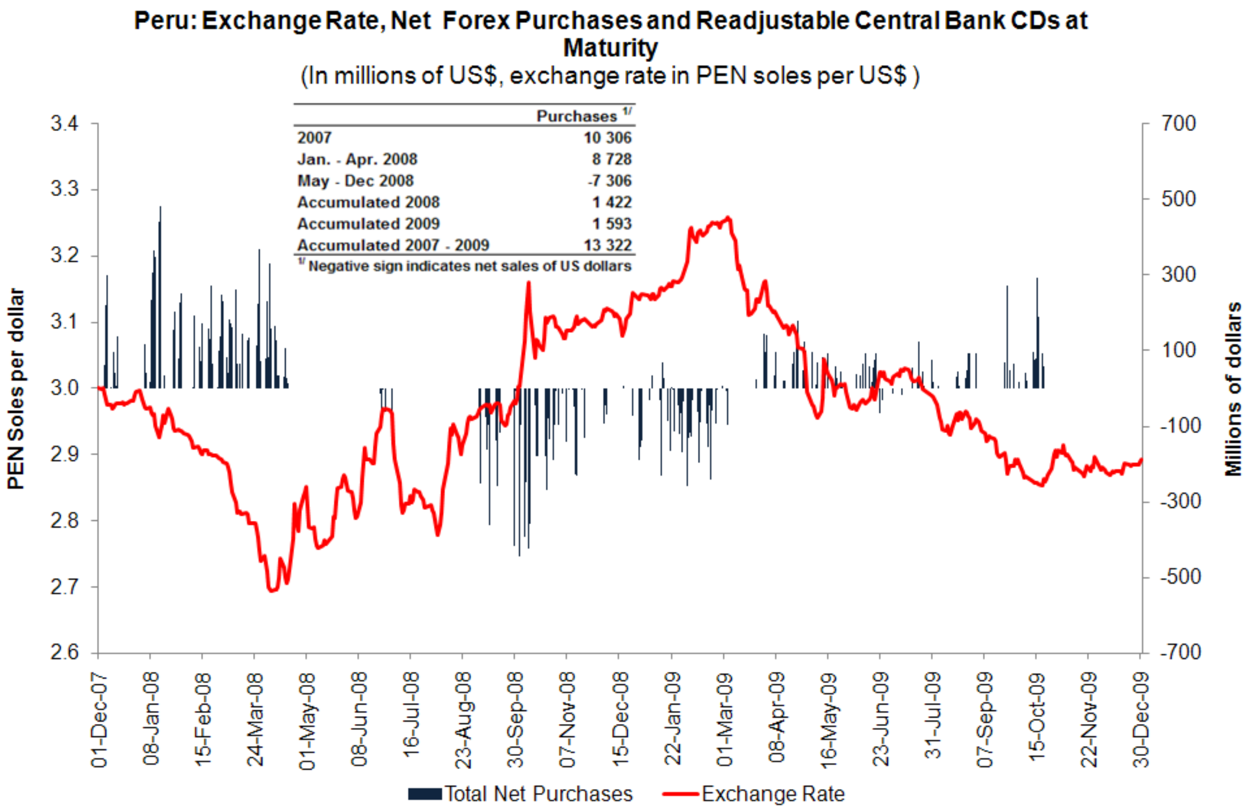


Chart 13

4.2.2 *Conventional policy responses during the post-Lehman Brothers phase of the crisis*

In February 2009, as soon as the balance of risks became favourable, the BCRP launched a series of policy rate reductions from 6.5% to 1.25% in August 2009. The risks were associated with higher exchange rate volatility, which may have generated negative balance sheet effects due to the high degree of financial dollarisation and persistent high inflation expectations.

Given the lower inflationary pressures in a context of reduced global economic growth and the decline of the international price of food and fuel, the Board of the BCRP started loosening the monetary policy stance in February 2009. The policy rate was reduced from 6.5% to 6.25% in February and to 6.0% in March with further reductions of 100 basis points each time from April to July 2009 and 75 basis points in August, reaching the current level of 1.25%. These actions are consistent with the primary goal of preserving price stability; the current state of the economy reflects inflation levels below the target of 2% with forecasts of 2.2% for 2010.

5. Results

The activation of the full monetary policy operational procedures of the BCRP, ie adopting both unconventional monetary policy measures in order to guarantee the funding and market liquidity of the financial system as well as conventional measures in accordance with monetary stability goals, maintained the dynamism of credit from the financial system to the private sector during the entire period of the global financial crisis. Chart 14 shows the evolution of the seasonally adjusted credit in domestic currency which, after following a stable expansionary pattern over the last eight years, kept its pace, albeit at a slower speed than the average, but without displaying periods of booms or busts. In addition, banking credit by component showed positive rates of growth in 2009: corporate (5.9%); small firms (23.4%); consumption (8.1%); and mortgages (17.1%). The main cause of deceleration in credit growth can be attributed to the decline of the financing of exports and imports.

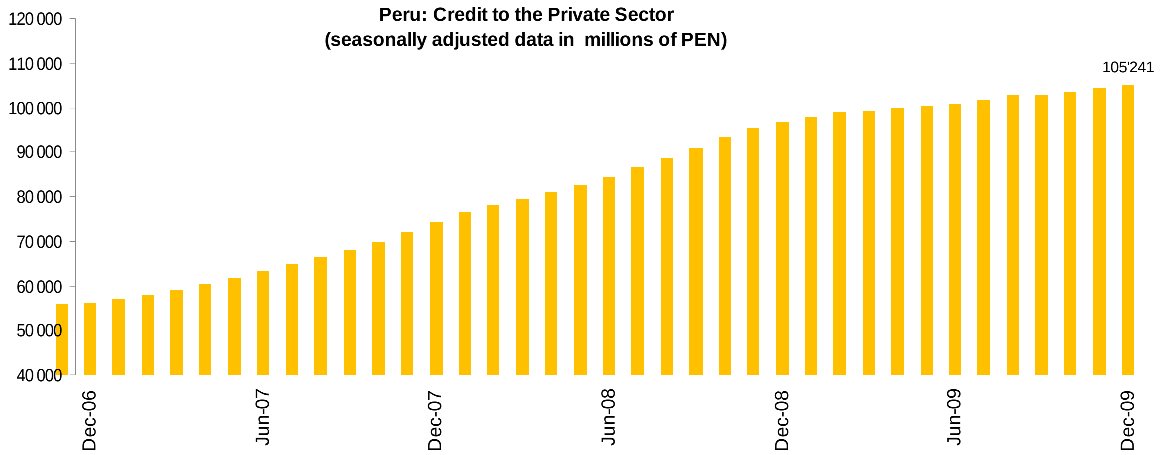
Table 2

Peru: Credit to the Private Sector

(Annual percentage rate of growth)

	2008	2009
Total	**29.9**	**9.4**
Corporate	28.7	5.9
of which: Foreign Trade	*15.7*	*-29.6*
Small Firms	52.9	23.4
Consumption	27.1	8.1
Mortgage	23.4	17.1
Note:		
Real GDP growth	9.8	0.9

Chart 14



The credit access index, an early indicator of a credit crunch, has been always in the "easy-access" zone, showing that the flow of credit continued during the crisis (Chart 15). Similarly, non-performing loans of commercial banks have been around their lowest ever levels, with a slight increase following the collapse of Lehman Brothers, passing from 1.3% in 2008 to 1.6% in 2009 (Chart 16).

Chart 15

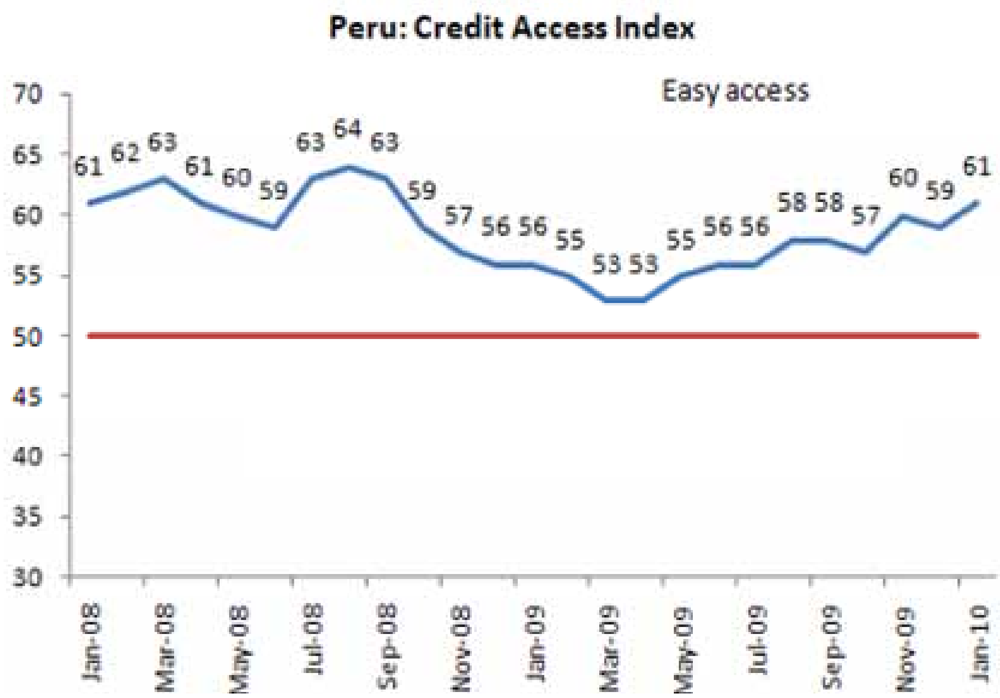
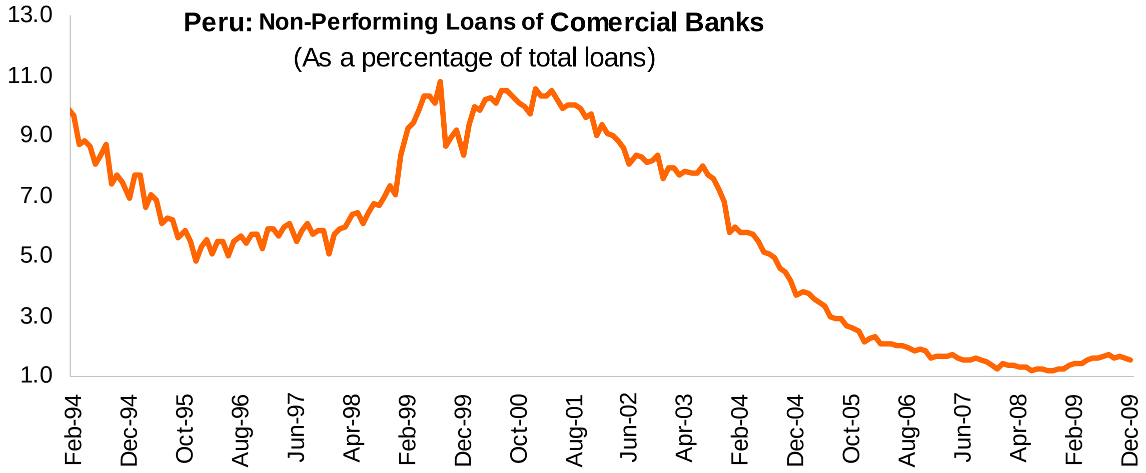


Chart 16



6. Conclusions

The recent global financial crisis posed two different scenarios which appeared sequentially in two main stages, the pre-Lehman Brothers stage (September 2007–September 2008), which was characterised by important capital inflows and upward pressures on commodity prices and terms of trade; and the post-Lehman Brothers stage, characterised by international liquidity constraints. The management of the crisis by the central banks of emerging markets required, in both stages, a combination of conventional and unconventional policy measures due to the necessity to re-establish the monetary policy transmission mechanism.

In both scenarios, the BCRP initially used unconventional measures to smooth liquidity. During the first stage, monetary policy emphasised the sterilisation of capital inflows, using increases in reserve requirements and a preventive accumulation of international reserves. In the second stage of the global financial crisis, following the failure of Lehman Brothers, the BCRP's monetary policy dealt with the extreme international liquidity constraint, first providing liquidity in domestic and foreign currency by reducing reserve requirements, introducing new instruments of liquidity provision and intervening in the FX market. The aim of the monetary policy was to preserve the dynamism of the domestic money and capital markets and avoid a credit contraction that could emerge from sharp currency depreciation and a sudden stop of capital flows. This strategy is rooted in the experience of crisis management in a financially dollarised economy.

The policy actions implemented by the BCRP during the pre-Lehman Brothers stage of the global crisis, characterised by important capital inflows to the Peruvian economy, and during the post-Lehman Brothers stage, characterised by the global drain of liquidity, maintained financial stability and the strength of Peru's macroeconomic fundamentals. Peru is one of the few economies registering GDP growth in 2009, 0.9%, and the consensus forecast of GDP growth for 2010 is 7.8%. Inflation was 0.25% in 2009, below the target (1-3%), and the consensus forecast for 2010 implies a rate inside the target range (2.2%).

7. References

Armas, A and F Grippa (2006): “Inflation targeting and dollarisation: the case of Peru”, *Financial dollarization: the policy agenda*, IMF.

Banco Central de Reserva del Peru (2009): *Inflation Report*, December.

Berróspide, J and J Dorich (2003): “Aspectos microeconómicos de la restricción crediticia de 1997–2000”, *Estudios Económicos*, March.

Contreras, A, D León and Z Quispe (2009): “La crisis global 2007–2009 y la política monetaria del Banco Central de Reserva del Perú”, *Revista Moneda*, no 139.

Chailloux, A et al (2008): “Central bank response to the 2007–08 financial market turbulence: experiences and lessons drawn”, *IMF Working Paper*, no 210.

Gondo, R, Z Quispe and R Rossini (2008): “Macroeconomic implications of capital inflows: Peru 1991–2007”, *BIS Papers*, no 44.

IMF (2009): “Disentangling the motives for foreign exchange intervention in Peru”, *Peru: selected issues*, IMF Country Report, no 09/41.

Ishi, K, M Stone, and E Yehoue (2009): “Unconventional central bank measures for emerging economies”, *IMF Working Paper*, no 226.

Obstfeld, M, J Shambaugh, and A Taylor (2009): “Financial instability, reserves, and central bank swap lines in the panic of 2008”, *American Economic Review: Papers and Proceedings*.

Rossini, R and M Vega (2008): “The monetary policy transmission mechanism under financial dollarization: the case of Peru 1996–2006”, *BIS Papers*, no 35.

Scott, R, J Restrepo and C García (2009): “Hybrid inflation targeting regimes”, *IMF Working Paper*, no 234.