Evolution of bank and non-bank corporate funding in Peru¹

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Introduction

Bank lending remains the most important funding source for Peru's non-bank private sector. However, the corporate bond market is slowly emerging as an additional source of funds for domestic firms. As in other emerging market economies, Peruvian domestic non-financial corporations have been issuing bonds in the international capital markets,⁴ partly replacing domestic market bond issuances. Offshore issuance is cheaper, owing to quantitative easing in the developed world, and can also be attractive in terms of market efficiency, liquidity and economies of scale, in contrast to the less liquid local market. Although certain non-bank financial entities such as domestic pension funds are in a position to encourage the development of the domestic capital market, these entities are mainly oriented to the international markets.

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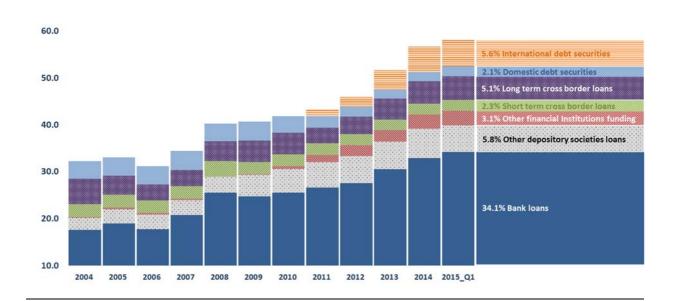
Shin and Turner (2015) highlight the shifting pattern of financial intermediation and its major implications not only for monetary policy in the current low interest rate environment but also for financial stability. Of particular interest is the heightened sensitivity of emerging economies to global long-term interest rates.

Financial intermediation and the role of banks

Over the past decade, robust GDP growth and low and stable inflation in Peru have contributed to a deepening of financial intermediation (including credit from banks and non-banks, and domestic and international market bond issuances), which almost doubled in size from 27.6% of GDP in 2004 to 51.2% in 2014.

Total credit to non-financial private sector

Share of nominal GDP Chart 1

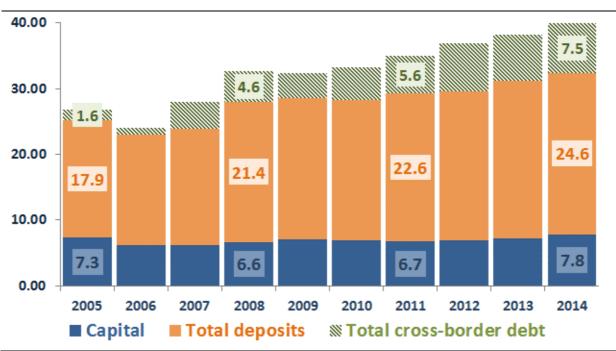


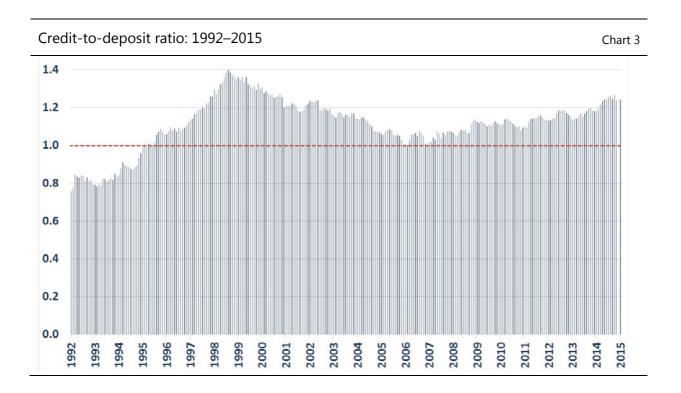
The banking system has played a crucial role in this process, increasing its provision of credit to the private sector from 20.3% of GDP to 41.1% during the same period. Moreover, the share of banks in total market-based funding increased from 73.7% in 2004 to 80.2% in 2014. The other market fund providers (non-bank financial entities and domestic and international bond issuances) increased their total share from 7.3% of GDP in 2004 to 10.1% in 2014.

Deposits are the main source of funding for banks. They increased steadily from 17.9% of GDP in 2005 to 24.6% in 2014, followed by an increase in banks' external debt from 1.6% of GDP to 7.5% during the same period. Bank capital increased slightly, from 7.3% of GDP in 2005 to 7.8% in 2014.



Share of nominal GDP Chart 2





The credit-to-deposit ratio has been higher than one for most of the period following the full deregulation and opening of the financial system during the early 1990s. Chart 3 shows that the peaks in the depository institutions' credit-to-deposit ratio coincided with periods of higher capital inflows. This process highlights the

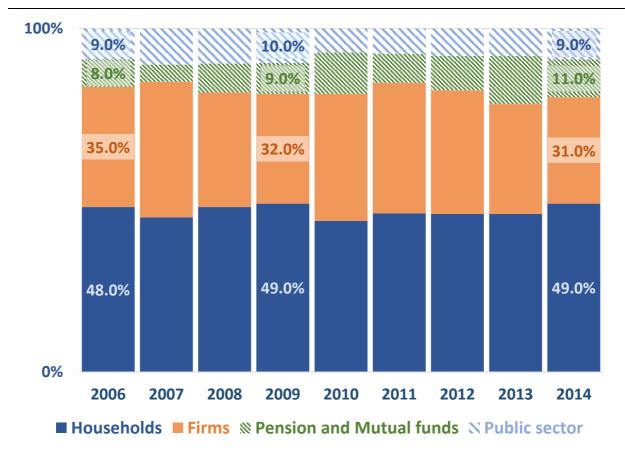
need for macroprudential policies to reduce the risks associated with short-term capital inflows in the context of a partial dollarisation of the economy.

In terms of composition, Chart 4 shows that household deposits constitute roughly half of all deposits since 2006 and that this figure has been relatively stable. Public sector deposits have been stable as well (9% of total deposits in 2014).

Structure of bank deposits

(As a share of total bank deposits)

Chart 4



The share of firms' deposits declined from 35% in 2006 to 31% in 2014, while the proportion of funding from pension and mutual funds increased (14% in 2013 and 11% in 2014). Even though their share of total deposits averages around 10%, the evolution of pension and mutual fund deposits may entail some vulnerability as a funding source for commercial banks. This is because pension and mutual funds are more volatile in their allocation of funds (given their search for yield) and they switch quickly between domestic and foreign currency assets, generating currency mismatches in banks' balance sheets that are later covered in the FX forward market.

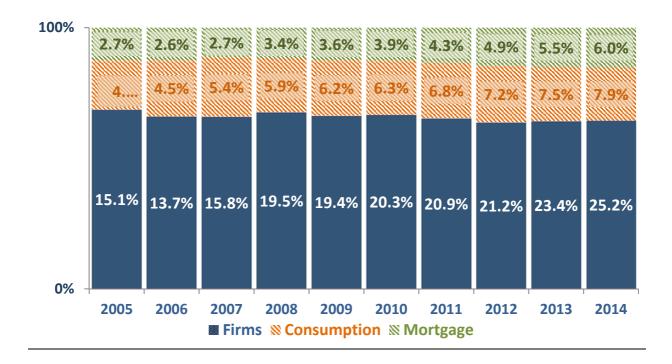


The external debt of the banking system has increased its share in GDP during the last decade. Maturities are mostly long-term (6.5% of GDP in 2014), while short-term external debt stands at 1.1% of GDP.

Credit. Growth in banking credit for consumption and housing has been strong. Mortgage loans increased from 2.7% of GDP in 2005 to 6.0% in 2014, and credit for consumption increased from 4.1% of GDP to 7.9% during the same period. In terms of its share of total lending, credit to firms decreased from 68.7% in 2005 to 64.4% in 2014. Meanwhile, mortgage loans increased their share from 12.6% to 15.3% and credit for consumption rose from 18.8% to 20.3% during the same period. Credit to large and medium-sized companies as a proportion of total bank credit has decreased as a consequence of greater use of other sources of funding, including bond issuances in both the domestic and international capital markets.

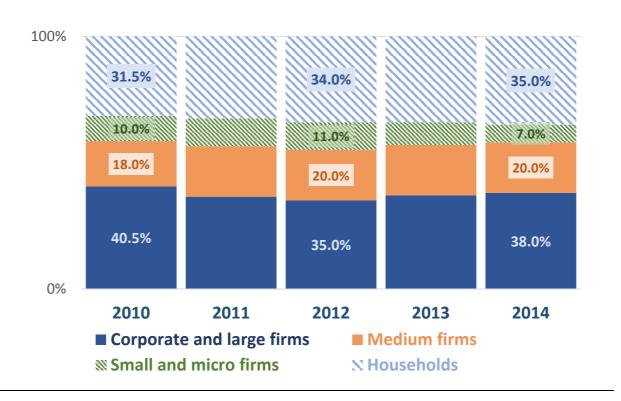
As regards credit to firms, the proportion of credit extended to corporate and large firms has fallen from 41% of credit in 2010 to 38% in 2014. Small and micro firms have lost share in banking credit as well (7% in 2014 compared with 10% in 2010) but these firms have found a better match with non-banking institutions. This confirms the finding that household credit has gained in importance and shows that it is mainly the biggest firms that have lost ground.

(As a share of nominal GDP) Chart 6



Bank lending to the non-financial private sector

(As a share of total bank loans) Chart 7



Furthermore, the number of large firms has remained small, while the number of micro small and medium-sized firms has increased significantly. The number of medium-sized firms in particular has increased twentyfold in just five years.

Number of debtors of the financial system					
Type of credit	2010	2011	2012	2013	2014
Corporative	461	484	518	580	666
Large firms	1 711	1 681	1973	2 246	2 499
Medium size firms	14 601	17 813	21 919	26 394	281 555
Small firms	230 285	284 641	343 562	380 859	389 910
Very small size firms	1 253 951	1 403 097	1 519 494	1 594 053	1 615 890
Total	1 501 009	1 707 716	1 887 466	2 004 132	2 290 520

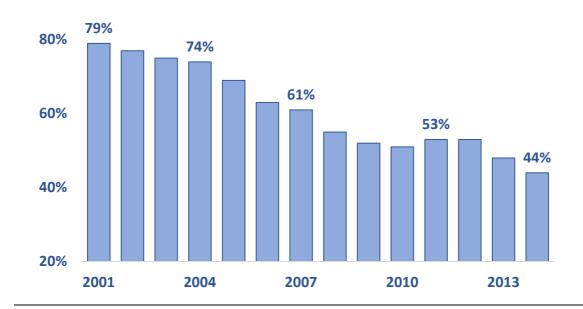
Financial dollarisation in Peru. One of the main concerns arising from Peru's credit market is financial dollarisation. Even though it has decreased steadily from 2001 (79%) to 2014 (44%), the share of credit extended in dollars by commercial banks is still significant. This poses a threat to financial stability because firms with liabilities in foreign currency and revenues in domestic currency experience a negative balance sheet effect when the domestic currency depreciates significantly. This in turn has a negative impact on the credit delinquency ratios of commercial banks and economic activity in general. Peru suffered from such a shock in 1998 after the Russian crisis; delinquency ratios doubled, the number of banks halved, and Peru entered a recession that lasted approximately 18 months.

Dollarisation levels have fallen in the bond market as well. In the case of government bonds, dollarisation decreased from 85% in 2001 to 44% in 2013, while in the corporate bond market it fell from 95% in 2001 to 49% in 2013.

On the funding side, the dollarisation of deposits has decreased steadily during the last decade, in line with credit dollarisation.

Chart 8



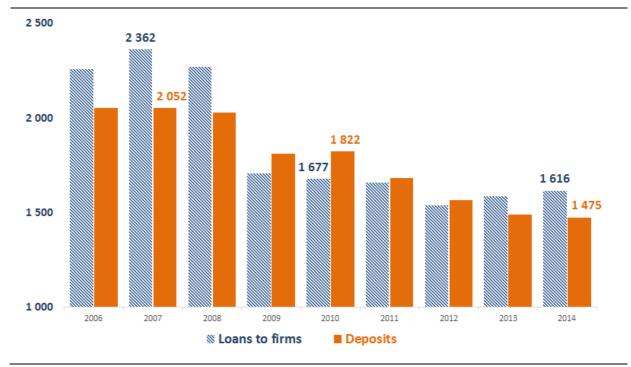


Bank concentration. Another characteristic of the Peruvian financial market is its level of concentration. Although the Herfindahl-Hirschman index⁵ for loans has been on a downward trend, decreasing from 2,362 in 2007 to 1,616 in 2014, it still points to a moderate level of concentration. In addition, Céspedes and Orrego (2014) estimate a statistic of market competitiveness and find a certain degree of concentration in the banking system consistent with a monopolistic competition market structure. They also find some evidence of increasing competition in the Peruvian banking industry, which would be consistent with the arrival of new banks and the narrowing of interest rate spreads.

The Herfindahl-Hirschman Index (HHI) is a commonly accepted measure of market concentration. The HHI is calculated by squaring the market share of each firm competing in the market and then totalling the resultant numbers. The HHI takes into account the relative size distribution of the firms in a market. It approaches zero when a market is occupied by a large number of firms of relatively equal size and reaches its maximum of 10,000 points when a market is controlled by a single firm. The HHI increases both as the number of firms in the market decreases and as the disparity in size between those firms increases. The Department of Justice and the Federal Trade Commission, in the United States of America, generally consider markets in which the HHI is between 1,500 and 2,500 points to be moderately concentrated, and consider markets in which the HHI is in excess of 2,500 points to be highly concentrated. U.S. Department of Justice and the Federal Trade Commission (2010).

(1,500 to 2,500 = moderately concentrated)

Chart 9

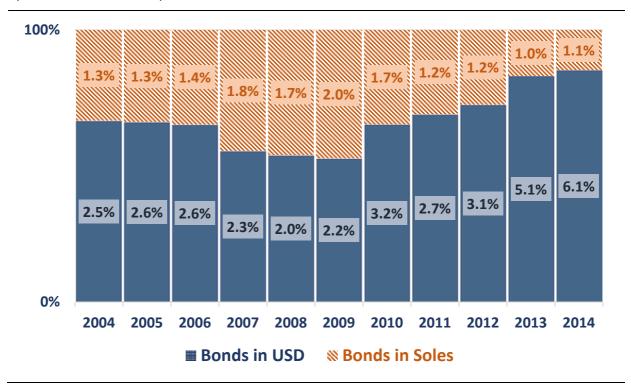


Evolution of the bond market in Peru

Private corporate bonds. Although bank lending remains the most important funding source for Peru's non-bank private sector, corporate bond issuances have slowly become an additional provider of funds for domestic firms, increasing from 3.8% of GDP in 2004 to 7.2% in 2014. In terms of currency denomination, the share of corporate bond issuances in new soles (PEN) increased steadily during 2004–09, from 1.3% of GDP to 2.0%, while the share of US dollar-denominated bonds dropped from 2.5% to 2.0%.

However, in response to the substantial easing of monetary policy in the developed world and the subsequently very low international interest rates, corporations since 2009 have switched from domestic to international capital markets for bond-based funding, causing the share of foreign currency-denominated corporate bond issuances to increase from 2.0% of GDP in 2008 to 6.1% in 2014. Conversely, the share of domestic currency corporate bond issuances fell from 2.0% of GDP in 2009 to 1.1% in 2014.

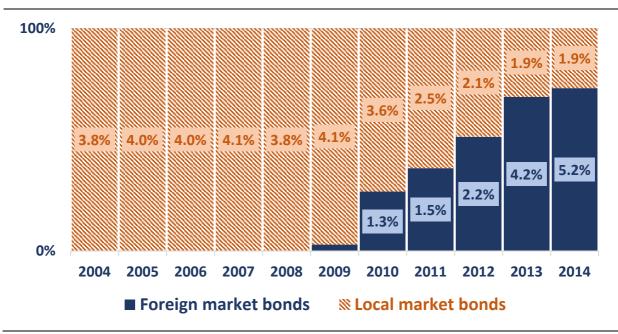
(As a share of nominal GDP) Chart 10



From 2001 until 2009, corporate bonds were basically issued in the domestic capital market. However, the subsequent changes in international funding market conditions combined with the strength of Peru's macroeconomic fundamentals – as reflected in the upgrade of its sovereign debt to investment grade in April 2008 and the important reduction in its sovereign risk spread from 524 bp in December 2008 to 179 bp in December 2009 – encouraged domestic corporations to issue bonds in international markets, partly replacing domestic market issuances.

The share of domestic corporations' international bond issuances quickly increased from 0.1% of GDP in 2009 to 5.2% in 2014, while the domestic market issuances dropped from 4.1% of GDP to 1.9% during the same period.

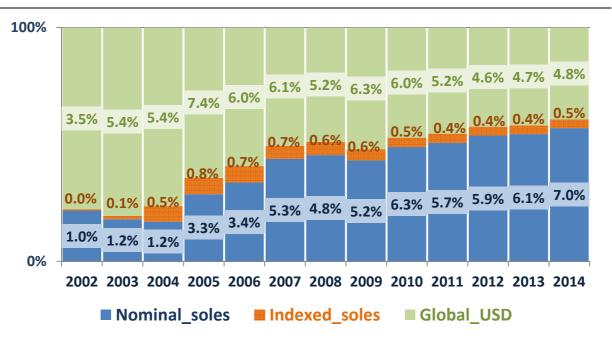
Due to its small size, corporate bond funding may still not present any real challenges to domestic financial stability. However, the increasing dollarisation of corporate bond issuances related to the reliance on international bond markets may bring about pressures on financial stability through exchange rate-related credit risk, particularly during periods of monetary policy normalisation in the developed world. This risk increases the Peruvian economy's vulnerability to a still high degree of financial dollarisation.



Sovereign bonds. Since 2003, the government has promoted the domestic capital market by issuing Treasury bonds and allocating them in the primary capital market through the Market Creators Program, which also has the purpose of regularly setting prices for issued bonds, ensuring liquidity and market deepening, and generating benchmark yield curves.

Government debt securities, by type of issuance

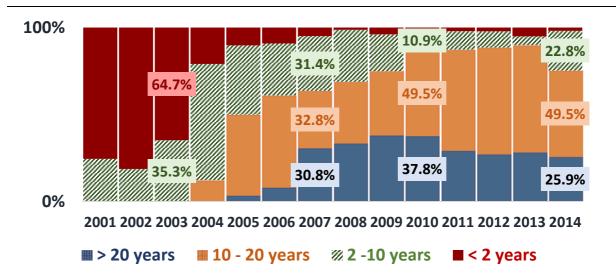
(As a share of nominal GDP) Chart 12



The share of domestic currency Treasury bonds increased from 1.2% of GDP in 2004 to 7.0% in 2014, while the share of global USD sovereign bonds decreased from 7.4% of GDP in 2005 to 4.8% in 2014. This process has greatly reduced the dollarisation of government debt and, consequently, the Treasury exposure to exchange rate risk. Moreover, the government has steadily increased the maturity of its bonds, with more than 75% of the total balance of bonds having maturities longer than 10 years (26% of which have maturities longer than 20 years). In February 2014, the Treasury issued a nominal bond with a maturity of 40 years.

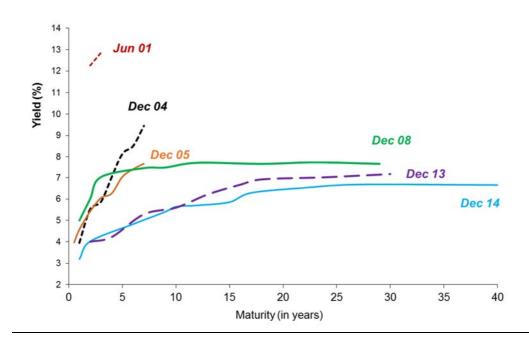
Term structure of government debt securities

(As a share of total) Chart 13



Yield curve of government debt securities

(Percentages) Chart 14



Since July 2013, the Treasury has begun to issue short-term titles (three, six, nine and 12 months) in order to complete the short leg of the yield curve. The yield curve now goes from three months up to 40 years, the longest term structure for nominal interest rates in a Latin American domestic currency.

I. Constraints on the development of the corporate bond market in Peru

The domestic bond market remains relatively small, even though it has a well functioning Treasury bond segment that provides a benchmark yield curve for the pricing of private sector issuances, and although the private pension funds (AFPs) have sufficient resources to encourage its development. The outstanding stock of private bonds increased from 4.7% of GDP in 2001 to 14% in 2013.

Large Peruvian firms have preferred mainly to issue in external markets, although the number of firms with such access is very small. In 2014, the external issuance of corporate debt was roughly triple that of domestic issuance, even though only 12 Peruvian firms issued debt in the external market that year (17 in 2013 and none 10 years ago), compared with 17 in the domestic market (42 in 2013 and 36 a decade ago).

Local issuers prefer to issue bonds abroad due to the higher level of liquidity in international markets, the broad investor base, and a greater variety of risk-hedging instruments, which can help to reduce funding costs. Demand for longer-term bonds with fixed rates and larger notional values is also greater in external markets.

According to Black and Munro (2010), Minzen et al (2012) and Guscina et al (2014), the main reasons for issuing bonds abroad are:

- Risk management: companies with revenues in foreign currency (ie exporters)
 have a natural incentive to fund their activities by borrowing abroad.
- Arbitrage opportunities: financial companies take advantage of issuing bonds in foreign markets and hedging those operations using currency swaps, thus reducing funding costs without incurring foreign exchange risk. Even though exploiting these arbitrage opportunities should lead to a convergence of funding costs across countries, the literature on interest rate parity finds that small deviations persist due to market imperfections (transaction costs, market size, market incompleteness, information asymmetries and regulatory friction), particularly in long-term bond markets.
- Market completeness: local companies prefer to issue bonds abroad to access larger and more liquid markets, as discussed above.
- Diversification of funding sources: in particular, domestic financial institutions have an incentive to form a diversified funding base that includes both domestic and foreign investors.

Evidence from Asia in Black and Munro (2010) suggests that financial firms issue bonds abroad mainly to benefit from arbitrage opportunities, while Minzen et al (2012) show that corporate firms in Asia issue bonds abroad to take advantage of large liquid markets, thus reducing funding costs.

Guscina et al (2014) find that, over the last 10 years, new bond issuances abroad by a sample of emerging markets and less developed countries reflect both demand and supply factors. The key demand drivers are easy financial conditions due to the search for yield and a demand for diversification, while increasing financial needs, coupled with underdeveloped domestic markets and a favourable

interest rate environment in foreign markets have turned international bond markets into an attractive alternative source of funds.

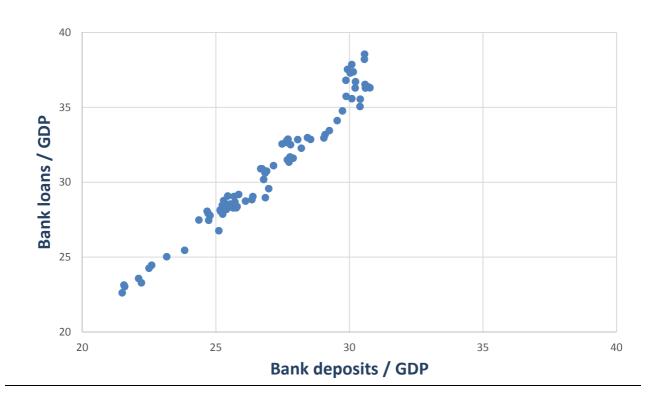
Furthermore, Batten and Szilagyi (2002) argue that in Japan, the high concentration of market power in the hands of banks, supported by government policy, continues to impede bond market development. They also state that banks' large equity stakes in non-financial corporations, coupled with strategically set loan and deposit rates, have ensured a close relationship with corporate borrowers. They quote Samuelson (2000) to the effect that, "like stallions who preside over a harem of mates, each leading bank feeds capital and advice to a collection of companies who may even have invested materially in each other's share of stock".

In Peru, households look to financial institutions as their main deposit-takers, and bank savings represent the principal funding source for bank lending (bank deposits are equivalent to, on average, 88% of bank lending).

Bank loans and bank deposits

(XY Chart, as shares of nominal GDP)

Chart 15



Private pension funds. The value of private pension funds in Peru increased from 11.4% of GDP in 2004 to 20% in 2014. Almost 41% of these funds are invested abroad. The pension funds' domestic market investments are concentrated in government securities (17.7% of their portfolio) and financial institutions' instruments (18.2%). Their holdings of non-financial corporate bonds have decreased, from 13% in 2007 to 6.9% in 2014. Table 2 shows that pension funds

prefer international investments, having increased their portfolio weight of these investments from 10.2% in 2004 to 40.6% in 2014. In contrast, they reduced their positions in non-financial institutions from 52.2% in 2004 to 23.4% in 2014.

Drivato	noncion	funds'	nortfolio	composition
rnvate	pension	Turius	portiono	COMPOSITION

Table 2

Pr	rivate Pension Funds				
		2004	2007	2011	2014
Total fund value (Millions USD) (Percentage of GDP)		7 820	20 155	30 064	38 089
		11.4	19.1	17.4	19.9
Inv	restment Portfolio Composition (%)	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
a.	Government securities	24.3	<u>21.9</u>	<u>17.0</u>	<u>17.7</u>
b.	Financial institutions	<u>13.4</u>	<u>8.1</u>	<u>14.4</u>	<u>18.2</u>
	Deposits in domestic currency	5.9	2.1	3.8	0.8
	Deposits in foreign currency	1.9	0.3	0.7	5.8
	Bonds	3.6	2.4	4.1	5.7
C.	Non-financial institutions	52.2	<u>56.8</u>	<u>40.1</u>	23.4
	Common and investment shares	37.0	39.7	25.5	11.4
	Corporate bonds	11.3	13.0	9.9	6.9
d	Foreign Investmets	<u>10.2</u>	13.2	<u>28.5</u>	<u>40.6</u>

Implications for monetary policy

Since the Global Financial Crisis, there has been growing interest in assessing the impact of financial intermediation on the transmission mechanism of monetary policy. Particularly in Latin America, including Peru, the quantitative easing policies of developed economies have increased domestic banks' access to cheap foreign funding. In addition, large domestic companies have gained access to foreign funding by issuing foreign currency bonds. The availability of cheap foreign funding to large domestic firms has also prompted domestic banks to expand lending to small and medium firms, for which delinquency rates have been higher due to the initial learning process for new borrowers. This new dynamic in financial intermediation has facilitated the expansion in bank credit and also fuelled domestic asset prices.

These issues pose problems for the transmission mechanism of monetary policy, particularly when the central bank tightens its monetary policy stance to contain inflationary pressures.

With respect to the traditional transmission channel of monetary policy – the interest rate channel – empirical evidence presented in the Central Reserve Bank of

Peru's *Inflation Report* in October 2014⁶ shows that the effectiveness of this channel has not changed significantly in the last five years and that monetary policy has remained effective through this channel. As we can see in Table 3 and the corresponding graphs, changes in interbank rates as a result of changes in the policy stance are fully passed through to loan rates, while the pass-through to deposit rates is incomplete.

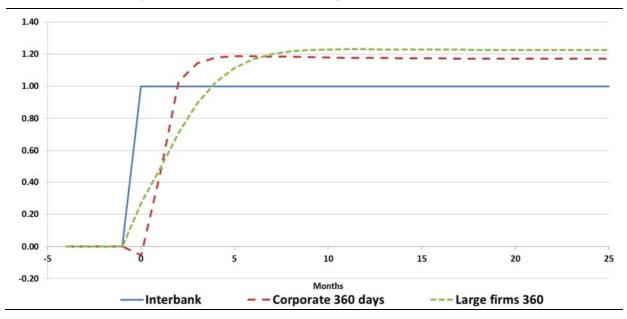
Interest	rate	pass-through
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Table 3

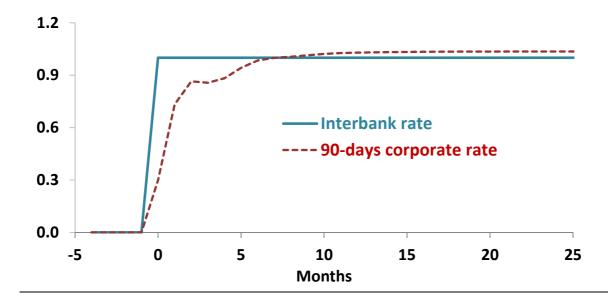
Long-term pass-through				
	Rodriguez (2010)		Inflation report	
_			Oct-2014	
_	Pre-crisis Full sample		Full sample	
	sample	(2010)	(2014)	
Lending rates				
90-days corporate rate	1.07	1.04	1.04	
360-days rate	0.65	0.68		
360-days corporate rate			1.17	
360-days rate for large firms			1.23	
Deposit rates				
Savings	0.53	0.46	0.45	
30-days deposits	0.82	0.86	0.85	
180-days deposits	0.81	0.81	0.81	
360-days deposits	0.74	0.70	0.69	

Response of 360-day corporate rate to a 1% change in the interbank rate

Chart 16



We would like to acknowledge the assistance received from Mr Kenji Higa, who carried out the calculation of the interest rate pass-through.



As regards the lending channel, Tovar et al (2012) explain that reserve requirement (RR) management plays a countercyclical role in managing the credit cycle. In particular, in the upswing, hikes in RRs may increase lending rates, slow credit growth, and curb the excess leverage of borrowers in the economy. In the downswing, they can ease liquidity constraints in the financial system, thus operating as a liquidity buffer. RR management enhances the lending channel of monetary policy.⁷

With respect to the asset price channel, increases in short-term interest rates put equity prices under pressure by making equity less attractive than bonds. There is no empirical evidence for the case of Peru, but the effect seems to be less important here, since growing demand for domestic assets among foreign investors searching for yield has kept asset prices growing even under tighter monetary policy.

The exchange rate channel should have a higher impact, since an increase in the policy rate to smooth economic growth would increase the interest rate differential, which in a context of capital inflows should heighten the effect of this mechanism.

In the case of Peru, it is important to note that increased capital inflows have a limited effect on the transmission mechanism of monetary policy due to the implementation of macroprudential policies that contain the inflationary impact of the inflows on domestic credit and asset prices.

Macroprudential policies aimed at mitigating the impact of capital inflows on asset prices and excessive bank lending have facilitated the implementation of a

The lending channel is the mechanism through which monetary policy alters the loan supply when some firms can be deemed to be bank-dependent for their credit needs, so that a change in the supply of bank loans has an impact on the real activities of firms, and when prices are sticky. See Peek and Rosengren (2014).

monetary policy that is independent of the monetary policy stance in developed economies.

In particular, tighter reserve requirements for banks' foreign funding and countercyclical capital and provision requirements have helped contain excessive credit growth and currency mismatches due to cheap foreign funding.

The use of reserve requirements aims to dampen the expansion of credit in foreign currency and to stabilise the total credit to the domestic private sector. Additionally, in order to de-dollarise the economy and reduce the risks associated with the financial dollarisation, the Central Reserve Bank of Peru has implemented further reserve requirement measures:

- since March 2013, additional reserve requirements related to the expansion of mortgage and car loans in USD;
- since October 2013, additional reserve requirements related to the expansion of total USD loans;
- since January 2015, incentive to replace foreign currency loans with domestic currency loans via additional reserve requirements if lenders fail to reduce USD credits.

The following additional macroprudential measures have been used by the central bank and the supervisory agency:

Measures that tackle excessive leverage

- a. Changes in the average reserve requirement in domestic currency depending on the phase of the credit cycle.
- Dynamic provisioning and countercyclical capital requirements, and higher capital requirements according to the type of credit (mortgage loans, revolving and non-revolving consumer loans).

These macroprudential measures aim to increase the resilience of the financial sector to negative shocks and reduce the likelihood of a financial crisis. They also help maintain the effectiveness of monetary policy, since they target specific areas where systemic risk is building up, allowing monetary policy to focus on containing inflationary pressures.

Special attention should be given to the recently implemented liquidity coverage ratio (LCR), as its impact on the transmission mechanism of monetary policy needs to be analysed carefully. Since central banks implement monetary policy by providing liquidity to, and withdrawing liquidity from, the banking system, an interaction between liquidity requirements and central bank liquidity provision and absorption is evident. There is also some theoretical evidence that the LCR may increase the steepness of the very short end of the yield curve by introducing an additional premium for interbank loans that extend beyond 30 days (Bech and Keister (2012)). Since the implementation of LCR is still ongoing, there is no empirical evidence yet on its impact on the transmission mechanism of monetary policy.

Conclusions

Bank lending remains the most important funding source for Peru's non-bank private sector, but the corporate bond market is slowly becoming an additional provider of finance for domestic firms. The upgrade of Peru's sovereign debt in a context of low interest rates and abundant international liquidity has encouraged large domestic corporations to issue bonds in the global markets, replacing in part domestic market bond issuances. This also reflects the illiquidity of the domestic capital market, in contrast to the efficiency of international markets. Although private pension funds manage large funds, they are mainly oriented to international markets. The transmission mechanisms of monetary policy have maintained their effectiveness thanks to the implementation of reserve requirement measures and other macroprudential policies.

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