

MACROECONOMIC ANALYSIS

An assessment of the central bank's ability to defend the currency

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Overview

Over the past 30 months, the central bank's foreign exchange position has dipped by over USD23bn. This loss of international liquidity has spawned doubts over its ability to relieve upward pressure on the exchange rate in an economy with a high degree of financial dollarisation where there is an underlying risk of currency mismatches among private economic agents in the private sectors.

Over this period, however, Peru's net international reserves (NIR) have held relatively steady because the deterioration in the foreign exchange position has been offset by the greater dollar deposits from public sector and financial institutions at the central bank (even if these might not be available for it to use).

The central bank has a reasonable amount of scope to allay upward (depreciation) pressures on the PEN exchange rate, which minimises the chances of a currency crisis occurring. A stricter gauge than NIR of the international liquidity available to the central bank to ward off speculative attacks on the PEN is the foreign exchange position plus dollar deposits held by the public sector at the central bank (excluding its foreign exchange requirements to meet its external obligations). According to this indicator, the central bank could "buy up" 2.7 times the monetary base. This also compares well with respect to other broader monetary aggregates in PEN and such availability of foreign currency would allow it to keep up a rate of monthly sell-offs in the currency market at this year's level for over 50 months.

The central bank's firepower is all the greater if other additional instruments available are taken into account. In an emergency, the central bank could apply for contingent credit lines such as those which the IMF offers. Furthermore, the currency hedging instruments which the central bank has at this juncture provide it with greater room for manoeuvre. Moreover, it can always accept greater currency weakness in combination with higher interest rates in PEN.

To summarise, our take is that there is very little chance of a speculative attack on the PEN at the moment, partly because adequate lines of defence are in place. That said, the cyclical and current account deterioration represent warning signals that could increase the likelihood of scenarios involving more sudden PEN depreciation. Besides this, under intense and sustained upward pressure on the exchange rate, PEN interest rates are likely to rise, which would have adverse effects on financial intermediation and economic activity.

The central bank (BCRP): regular intervention in a dollarised economy

The swift and significant fall in the Peruvian central bank’s foreign exchange position over the past 30 months has given rise to some degree of concern over the institution’s ability to defend the PEN against potential speculative attacks. The possibility of a sudden sharp depreciation of the PEN is a particularly sensitive issue in Peru on account of the banking system’s dollarisation levels (dollarisation of lending in the system currently stands at 34%, while for deposits this is 44%) and the potential for mismatches that might be present within the private sector (especially among companies). Precisely, this vulnerability explains why the central bank has historically been very active in intervening in the foreign exchange market.

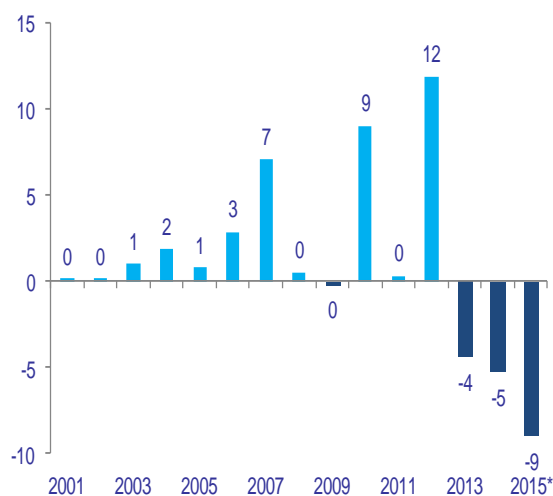
Over the past decade and early on in this one, the central bank successfully intervened to reduce exchange rate volatility¹. Generally speaking, from 2004 up until the first quarter of 2013, Peru’s currency gained in strength (see Figure 1) on the back of the commodity boom, capital inflows and in productivity gains. Over those years the central bank alleviated the appreciation process by buying dollars, which allowed it to build up a substantial stock of foreign exchange reserves. Nonetheless, there were also bouts of downward pressure on the value of the PEN, which the central bank cushioned by selling off foreign currency (see Figure 2).

Figure 1
The exchange rate (USD/PEN, monthly average)



Source: BCRP and BBVA Research

Figure 2
Foreign exchange operations* (USD bn)



*As of 7 November. Includes net purchases of foreign currency (currency intervention), public sector purchases or sales, and other off-desk operations. If an amount is positive (negative), this means that reserves are being accumulated (decumulated) and that the central bank’s foreign exchange position is rising (falling).
Source: BCRP and BBVA Research

1: The central bank maintains that its interventions are intended to moderate fluctuations of the exchange rate though not the latter’s medium term trend, because it recognises that this is not possible (the trend is determined by fundamental factors which the central bank is powerless to modify). The aim is to ensure an orderly transition towards a new exchange rate level (higher or lower) and to allow the private sector to adjust to the new exchange rate conditions.

It should be noted that the central bank is better-placed when it intervenes to buy dollars than when it does so to sell. In the case of buying, the funds it uses to buy foreign exchange are “unlimited”², while when it sells its capacity to intervene is determined by the international liquidity it has available. In Peru’s case, between 2004 and the first quarter of 2013, interventions via the sale of dollars were occasional and short-lived, and the central bank always had ample scope to keep downward pressure on the PEN in check.

The current scenario is more complex and challenging though, with persistent upward pressure on the exchange rate since May 2013, which has taken the exchange rate to levels not seen since 2005 (although these are still under the highs recorded early in the past decade), and this is expected to continue in the short run. Given this setting and the vulnerability which dollarisation brings, this note examines how able the central bank is to defend the PEN from potentially destabilising speculative attacks.

International liquidity available to the central bank: net international reserves (NIR) and the foreign exchange position

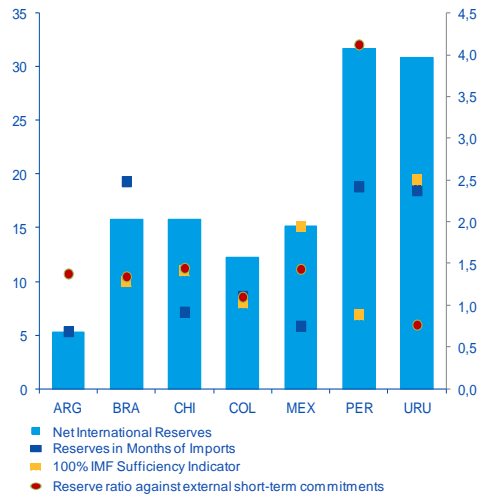
An initial idea of the central bank’s international liquidity is provided by its balance of net international reserves (NIR), which are defined as total foreign currency reserve assets (highly liquid, top quality international assets, such as US Treasury bonds, gold etc.) less short term liabilities, also in foreign currency (usually obligations with the IMF, which, in Peru’s case are not significant). Among the countries in the region, Peru and Uruguay have the highest levels of reserves (as a percentage of GDP), which reflects a need for greater foreign currency cover because their economies are highly dollarised (see Figure 3).

In Peru, the three key sources that allow its central bank to build up international reserves are (see Figure 4):

1. **The foreign exchange position.** This is purchasing of foreign exchange which is financed by issuing money. In this respect, it is said that these are the central bank’s “own dollars”. On the central bank’s balance sheet, the purchasing of dollars in the currency market represents, on the assets side, an increase in NIR, while on the liabilities side, this is an increase in the monetary base.
2. **Dollar deposits by financial institutions at the central bank.** Such deposits derive from dollar reserve requirements, which tend to be very high (at the moment the marginal reserve requirement is 70% of dollar-denominated deposits). This item also includes overnight deposits and dollar deposits in accounts that are used for collateral in local currency loans (the various kinds of repos: regular repos, credit expansion repos and credit substitution repos).
3. **Dollar deposits by the public sector with the central bank.** These consist of the Fiscal Stabilisation Fund (an intangible deposit that can only be used to deal with contingencies established in the Fiscal Responsibility and Transparency Act, which currently amounts to USD9.2 bn) and other Treasury deposits (which are usually fungible assets, part of which are loans received from abroad).

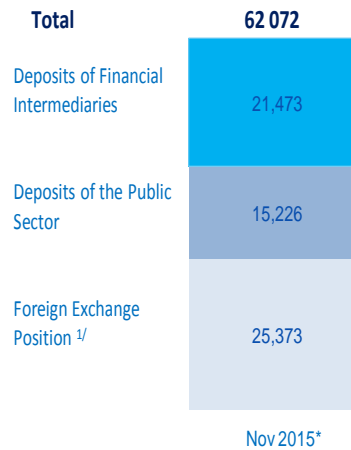
2: The funds are from issuing money, which the central bank will eventually have to sterilise, and this might cause it a financial loss. In Peru’s case such losses have been low and have not brought about a deterioration of the balance sheet of the central bank. It should be added that the Organic Law regarding the central bank lays down that when it runs up a loss for any given year (which might be due to its sterilised interventions) the Treasury must recapitalise the central bank.

Figure 3
Latam: Indicators of international reserves



* Short term external commitments include debt falling due in the next 12 months.
 ** The IMF's adequacy indicator is composite and based on external and monetary variables. Values above the indicator suggest a comfortable position for the central bank.
 Source: BCRP and BBVA Research

Figure 4
Components of Peru's NIR (as of 7/11/2015)* (USD mn)



1/ Does not take into account global bonds of the Peruvian government held by the central bank.
 Source: BCRP and BBVA Research

It should be noted that the central bank's foreign exchange position differs from NIR by the dollar liabilities that it has with resident agents: financial institutions and from the public sector. **From April 2013 to November this year the foreign exchange position has come down by USD23.2bn** (see Figure 5), mainly because of central bank dollar selling to financial institutions, chiefly in the context of FX market intervention. **On the other hand, NIR has remained basically stable** because the drop in the foreign exchange position has been offset by greater deposits from the public sector and financial intermediaries (see Figure 6).

Figure 5
NIR and foreign exchange position of the central bank (USD mn)

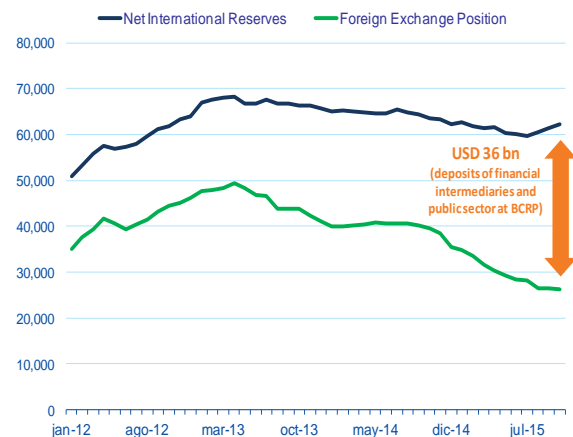
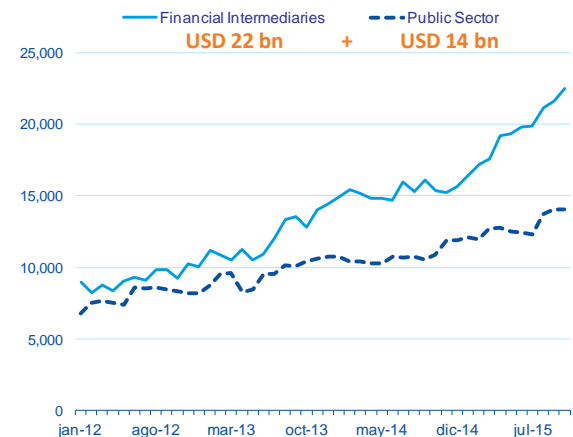


Figure 6
Dollar deposits of residents at the central bank (USD mn)



Source: BCRP and BBVA Research

Source: BCRP and BBVA Research

What is the international liquidity indicator which measures the central bank’s firepower when it comes to staving off speculative attacks?

An initial indicator to look at would be NIR. In principle the central bank could throw all of its international assets at defending the currency. Nevertheless, a more rigorous indicator would involve only taking into account the foreign exchange position (the central bank’s “own” dollars which are financed out of its seigniorage), as the portion of reserves financed out of deposits by financial intermediaries should be to cover situations where such institutions encounter are illiquid in dollars³, and the part financed out of public sector deposits should be used to address calls on foreign exchange from the Treasury. In this last case, given a scenario of currency pressure, the most likely situation would be for there to be coordination between the central bank and the Ministry of Economy and Finance to avoid the latter withdrawing its dollar deposits, except to service its foreign debt over the following 12 months.

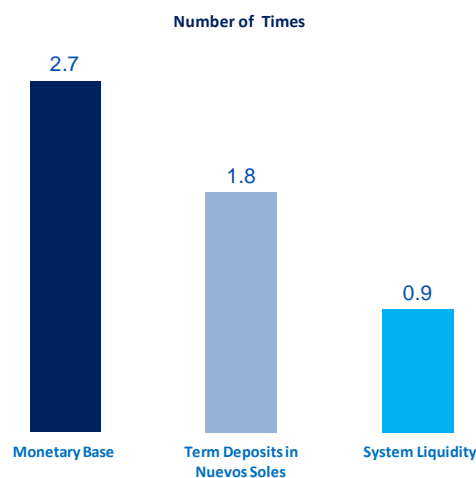
Therefore, bearing these points in mind, the truest acid-test indicator of the available international liquidity would give us USD39 bn as of 7 November (see Table 1):

Table 1
Indicator of international liquidity to fend off a speculative attack*

Indicator	USD mn
1. Foreign Exchange Position ^{1/}	25 919
2. Deposits of the Public Sector	15 226
3. External Public Debt Service of the Public Sector ^{2/}	2 134
Total (1 + 2 - 3)	39 011

*As of 7 November. 1/ Includes global bonds held by the central bank.
Source: BCRP and BBVA Research

Figure 7
International liquidity indicator with respect to the monetary base, PEN-denominated term deposits and system liquidity



Source: BCRP and BBVA Research

One way to test the power of this indicator would be to compare it with PEN-denominated monetary aggregates. The idea is to check on whether this indicator can “buy up” the whole mass of PEN. If so, it would potentially be able to set the exchange rate, or signal that it could do so, to discourage the taking up of speculative positions against the local currency. As Figure 7 illustrates, according to this indicator, the **central bank could buy 2.7 times the monetary base**. This also compares well with respect to other, broader PEN monetary aggregates⁴.

3: For example, during the Lehman Brothers crisis, the central bank freed up (reduced) dollar reserve requirements at a time when foreign banks were closing lines of credit to local banks.
4: It should be noted that economic theory suggests that the speculative attack on the currency strikes before the availability of central bank dollars dries up. Nevertheless it is evident that the central bank is relatively comfortably-placed to alleviate currency pressure.

A further test of relative power is to measure how long the central bank can keep up its interventions in the currency market. One way to gauge this is to assume that the monthly rate of selling in the spot market so far this year is maintained. As of 7 November the central bank had sold dollars in the currency market with a total value of USD7.1 bn. This works out at a monthly average amount of USD712mn, which means that according to the international liquidity indicator the **central bank would have 55 months in which to continue selling dollars at the same rate** (USD39,011/ USD712).

It should be noted that the central bank has other instruments besides selling dollars (which gives rise to a loss of foreign exchange position) with which to attend to private sector demand for currency hedging and thereby ease pressure on the spot exchange rate⁵. Of course, the central bank's potential to use such instruments will depend on how well-accepted they are by private agents compared to the alternative of physically having dollars. **Such hedging instruments offered by the central bank include exchange rate-indexed certificates of deposit (CDRBCRPs) and currency swaps** (whereby interest flows are exchanged: the central bank pays a fixed rate in dollars and the banks a variable rate accrued in PEN). The key point here is that both instruments (which provide the private sector with currency risk cover) **are settled in PEN, which means that they do not compromise either international reserves or the foreign exchange position**, and therefore they do not detract from the central bank's power to act in defence of the currency (see Box 1 for more details).

Finally, **if faced with a potential speculative attack, the central bank is likely to apply for contingent lines of the kind offered by multilateral organisations such as the IMF and the LARF (Latin American Reserve Fund)**, which would enhance its firepower. Specifically, the IMF's Flexible Credit Line was set up to meet demand for crisis-prevention and crisis-mitigation lending for countries with very strong policy frameworks and track records in economic performance (as in Peru's case). Through this instrument the IMF lends money to countries that are experiencing a liquidity shortage. To date, three countries (Poland, Mexico and Colombia) have applied for FCLs. Although none of these countries has drawn down on this line, the FCL offers them a guarantee that helps to boost market confidence in periods of escalating risks⁶. One important feature of the FCL is that it functions without any restriction on access to IMF funds and the loan amount is assessed on an individual basis. Table 2 shows that Colombia's FCL is USD5.3 bn, which equals 5 times its quota with the IMF, while Mexico's is USD70bn, or 13 times its quota. By way of reference, if Peru manages to obtain similar terms to those of Colombia or Mexico (expressed as a multiple of the quota), it could gain access to an FCL of between USD4.5 bn (5 x USD890mn) and USD11.6bn (13 x USD890mn). These FCL sums which Peru would be likely to be eligible for are the equivalent of 7.2% and 18% of the NIR balance (as of 7 November this stood at USD62.072bn)

5: In the absence of hedging instruments, private economic agents cover currency risk by buying dollars in the spot market, which pushes up on the exchange rate (depreciation pressure). One factor to take into account is that the hedging market in Peru is "asymmetric" (the whole market is usually one-sided). This is partly due to the central bank's interventions themselves, which reduce exchange rate variability and confirm this variable's trend in only one direction. In this situation the central bank offers instruments which balance up the market

6: Authorised countries enjoy flexibility to draw down on the line of credit at any time within a pre-defined window or treat it as a precautionary instrument. The FCL works like a renewable credit line, which can initially be for either one or two years with a review of qualification after the first year. If a country decides to draw on the credit line, repayment would take place over a 3¼ to 5 year period.

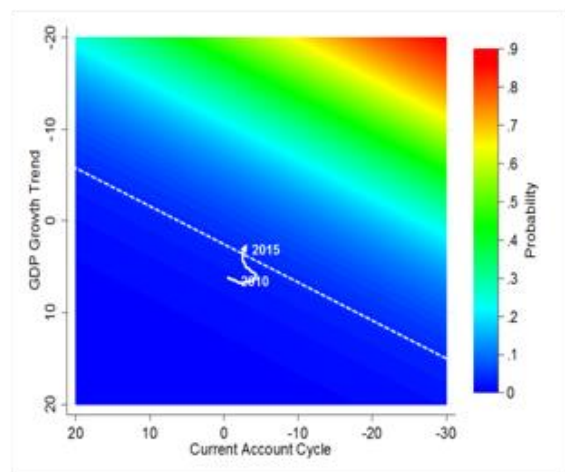
Table 2
Flexible Credit Line (FCL) (USD mn)

	Quota	FCL ^{1/}	Times of quota (FCL/quota)
Colombia	1 069	5 344	5,0
Mexico	5 300	70 000	13,2
Poland	2 331	21 043	9,2

^{1/} Flexible Credit Line. Peru's IMF quota is USD890mn.
Source: IMF and BBVA Research.

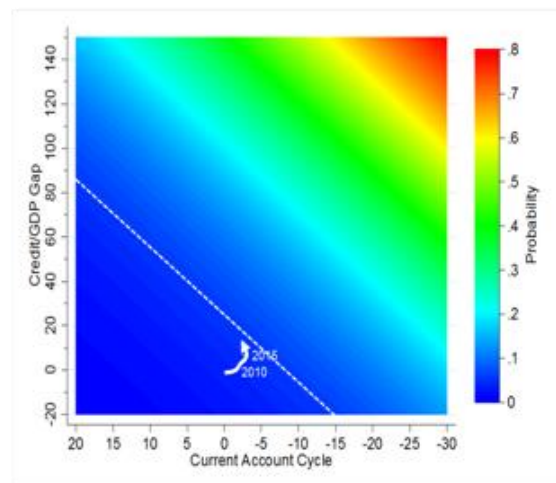
In general, it can be concluded that the central bank has ample scope to continue to defend the PEN, which diminishes the chances of any speculative attack. A similar conclusion is arrived at when we look at early warning indicators for currency crises. According to this, the likelihood of a crisis of this type is currently low, although the cyclical and the current account deterioration are elements to be watched closely (see Figures 8 and 9).

Figure 8
Dynamic currency crisis threshold for Peru (Current account and GDP growth)⁷



Source: BBVA Research

Figure 9
Dynamic currency crisis threshold for Peru (Current account and credit gap)



Source: BBVA Research

7: The probability areas in both figures show how the likelihood of a currency crisis is affected by the interaction of two variables: in Figure 8 by the combination of the current account balance and GDP growth, and in figure 9 by the combination of the current account balance and the credit-to-GDP ratio. The dotted line marks the combination of values of both variables beyond which the model gives a warning signal. The arrows show us how the probability of a currency crisis has been changing over the past five months in Peru. The probability of a crisis is estimated using a panel data model which depends on a set of explanatory variables where the most important are: the cyclical component of the current account and the private credit-to-GDP ratio, and the trend in the economic cycle and financial variables.

Box 1: Currency swaps and repo operations do not compromise the central bank's available foreign exchange liquidity

In recent months there has been much discussion over the impact of currency swaps and currency repo operations by the central bank on NIR and its foreign exchange position. It is important to clarify that using these instruments poses no compromise to the central bank's available foreign currency (except in one case, where the impact is immediate).

Currency swaps are a way of exchanging interest payments: the central bank pays a fixed rate in dollars and the banks a variable rate accrued in PEN. The point here is that the operation is settled in PEN, so it does not compromise international reserves or the exchange rate position and does not detract from the central bank's power to act in defence of the currency.

As for currency repos, these are instruments to inject liquidity in PEN whereby the central bank lends to the banks in PEN guaranteed in dollars. There are three types of such repos: i) regular, ii) credit expansion iii) and credit substitution. Two

elements to underline: i) in none of these kinds of repos is there transfer of ownership of the dollars left as collateral (they still belong to the banks and so they do not become owned by the central bank and thereby temporarily increase NIR), and ii) only credit substitution repos have an immediate (spot) effect (rather than a future one) on NIR and the foreign exchange position of the central bank because they involve the selling of dollars by the latter to the banks. It should be added that credit substitution repos have been the least-used and currently amount to some USD1.5bn (out of a total of roughly USD9bn).

For further details on credit expansion and credit substitution repos, as well as the monetary impact and implications for the foreign exchange position and NIR, see the central bank's January 2015 Inflation Report (<http://www.bcrp.gob.pe/docs/Publicaciones/Reporte-Inflacion/2015/enero/reporte-de-inflacion-enero-2015.pdf>), pages 112-113.

And, in the event of more intense currency pressure, is there power to respond?

More intense and prolonged bouts of currency pressure cannot be ruled out (extreme scenarios), which could be unleashed by either upheaval in global financial markets or further deterioration of the economy's fundamentals (sharp drop in export prices and weakness in the fiscal position). In a situation of this kind, as can be gathered from the examination above, the central bank would have the capacity to smooth the transition towards a higher exchange rate level consistent with weaker fundamentals, though not to avert currency depreciation. Another element to bear in mind is that if the central bank decides to embark on an all-out defence of the PEN by selling dollars, the consequence would be a draining of the PEN amount that could potentially send PEN interest rates spiralling upwards, which would in turn have counter-productive and destabilising effects on economic activity and the finances of companies, families and financial institutions. In the context of a sharp rise in interest rates, the problems of asymmetric information would be exacerbated and thereby affect lending activity. Thus, any analysis of the risks should not only focus on the currency aspect and the central bank's firepower to defend the PEN, but also consider the interest rate risk for private sector balance sheets. Therefore, if faced with a speculative attack, the central bank will be presented with a straight choice between defending the PEN (and in doing so draining PEN from the economy) versus accepting higher PEN interest rates. The most likely scenario is that the central bank will seek a halfway solution, for which it will have to be ready to pump the PEN back into the system which it takes out of it through foreign exchange intervention (guarantee that there are mechanisms to inject liquidity, which might require adequate collateral if it transpires that the central bank decides to provide PEN via secured loans).

To appreciate the scale of the currency pressure, we should identify its potential sources. One possibility is that non-resident investors and institutional investors might buy non-delivery forwards (NDFs) to speculate against the PEN. However, this possibility, which was very popular up until a few months ago, has been reduced by the limits imposed by the central bank and the penalties for overshooting them. No exchange rate pressure is therefore anticipated on this front. Even so, **potential sources of pressure could arise from:**

- **An increase in the foreign currency position of the banks.** This currently stands at USD750mn, but the regulatory limits allow long positions for the banks as a whole to potentially reach USD5.5bn. This means that there could be pressure from this source from some USD4.75bn, even though such pressure could swiftly be defused via a regulatory change to limit the long positions of the banks.
- **Dollarisation of private sector savings and term deposits in PEN.** Demand deposits are not included here, because they are transactional, having the nature of an activity that is normally performed in PEN, while the idea of dollarisation is that it involves assets (financial dollarisation). At the current exchange rate (end October), PEN savings and term deposits amount to about USD20bn.
- **Dollarisation of assets managed by the AFPs (pension fund managers).** These assets include sovereign bonds, shares and corporate bonds (deposits in PEN which the AFPs have at banks are not counted here because they fall into the previous category). At the current, rate these assets are the equivalent of some USD10bn. It should be noted that, under current regulation, the AFPs are subject to a limit of USD2.6bn a month for foreign currency transactions, for which reason any pressure from this source would be a bit more gradual.
- **Selling of sovereign bonds by non-residents.** Non-resident investors have positions along the short-to-medium section of the curve. Faced with expectations of a sudden depreciation, such investors would be expected to stage a wholesale sell-off of assets of this type. At the current exchange rate, sovereign bonds held by non-resident investors at end September amount to some USD5bn.

Considering all of these sources taken together, the pressure in a far more problematic scenario could amount to the equivalent of USD39.8bn, which is a total that is on a par with the central bank's firepower to contain a speculative attack (USD39.0bn). Thus, in an extreme scenario, Peru's central bank would have some margin for keeping the lid on currency pressure.

Conclusions

The central bank's available liquidity to ward off bouts of downward pressure on the value of the PEN (depreciation) includes its foreign exchange position and the dollar deposits which the public sector holds with it. This definition of firepower against attacks on the PEN is more rigorous than the concept of NIR because it only counts the central bank's "own" dollars (i.e. those acquired via issuing money and which represent its foreign exchange position), to which are added the dollars from the public sector (in the event of a crisis, the assumption is that the central bank would coordinate with the public sector so that it does not withdraw its dollar deposits at the central bank). Thus, unlike with NIR, this indicator of international liquidity does not include deposits from financial intermediaries.

In November 2015, the balance for this international liquidity indicator stood at USD39.0 bn (while the figure for NIR was USD62.1 bn), which would allow the central bank to "buy up" 2.7 times the whole of the monetary base. This also compares well with respect to other, broader monetary aggregates in PEN. The central bank therefore has quite a lot of scope to take the heat out of upward pressure on the exchange rate (depreciation), even in difficult situations, which minimises the likelihood of a currency crisis flaring up, although, given the system's level of dollarisation, this is something to watch carefully.

It is important to remember that this international liquidity available to the central bank does not imply that Peru's economy would emerge unscathed from any speculative attack. If the pressure is very intense, sustained and long-lasting, the central bank would be able to smooth the transition towards a higher exchange rate level (consistent with weaker fundamentals), but it would not manage to avert depreciation of the PEN. If the central bank decides to conduct a no-holds-barred defence of the PEN by selling off dollars, the result would be to bleed the amount in PEN from the economy and thereby potentially send PEN-denominated interest rates sky-rocketing, which would also have counter-productive and destabilising effects on economic activity and the finances of companies, families and financial institutions. Therefore any examination of the risks of a speculative attack should not merely focus on the currency side and on the central bank's firepower to defend the PEN, but also consider the interest rate risk for private sector balance sheets. If faced with a speculative attack, the central bank will be presented with a straight choice between defending the exchange rate (and in doing so draining PEN from the economy) versus accepting higher PEN interest rates. The most likely scenario is that the central bank will seek a halfway solution, for which it will have to be ready to pump the PEN back into the system which it takes out of it through foreign exchange intervention (to guarantee that there are mechanisms to inject liquidity, which might require adequate collateral if it transpires that the central bank decides to provide PEN via secured loans).

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