Local markets research

17 October 2008

Top View Latin America

The dollar pinch – implications for FX markets

There is little to suggest that the scarcity of dollars in the region will reverse any time soon. The dollar pinch is a result of several factors, not least from the heavy foreign participation in the regions' banking system. As such, Latin America takes a direct hit from a decline cross-border bank intermediation.

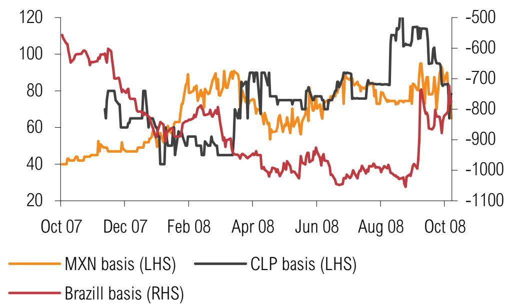
To be fair, this was evident even before the slew of bank failures/bail-outs in core markets in Q3. Indeed on our trip to the region earlier this year, talks with local subsidiaries made it clear that cross border trade lines were already getting pulled. Concern is greatest in places like **Mexico, Brazil** and **Chile** where there is a heavy exposure to foreign banks.

In the recent scramble for dollars, refinancing risk becomes a matter of concern. There is approximately USD88.4bn in aggregate amortization payments due by private sector borrowers in the region over the next 15 months. This amounts to nearly 41% of the reserves accumulated by the region in the last two years. **Chile** looks least vulnerable to external debt obligations of the private sector, but there is sufficient reason to worry over **Brazil** and **Mexico** where corporate sector exposure to FX derivatives adds another layer to refinancing risks in this dollar crunch.

Basis swaps analysis shows the extent to which dollar liquidity dried up in the region in the past few months as foreign capital flows adjust lower and local banks come under pressure as key providers of hard currency liquidity. Basis spread between Latin American inter-bank and USD LIBOR is trading near historical wides, indicating the strong interest to pay USD LIBOR versus receiving local currency in order to get USD up-front. **Brazil** basis is still near 6M highs whereas in **Mexico** basis has been rising and only started to ease since earlier this week. The USD liquidity situation looks less tight in **Chile** where basis is below 6M averages. In comparison short-end basis in CEEMEA region has started to ease, and basis in Latin America should eventually benefit from the recent (global and local) injection of liquidity.

Inevitably, regional central banks have come to the rescue by reversing their intervention strategies. This dollar liquidity however, has been quickly absorbed by the market and basis is still wide. Intervention has done little for FX volatility particularly in **Brazil** and **Mexico** where intervention has been particularly aggressive, but where the dollar pinch has been more prominent. Intervention strategies in **Peru** and **Colombia** have been less consistent, but have not translated into spikes in volatility given the relative lack of activity in those markets. In **Chile,** intervention looks incredibly balanced reinforcing or view that CLP stands to outperform the region.

Mexico, Chile, Brazil*: 2Y basis versus LIBOR



Source: RBS, Blomberg, *estimated using Cupom Cambial - DI

Flavia Cattan-Naslausky
Latin America Macro/FX Strategy
+1 203 618 6384

Esther Law
CEEMEA EM Strategy
+44 207 085 2273

The dollar pinch

- **The scramble for dollars that we have seen in Latin America particularly in the corporate sector is explained by: (1) The pull-back in foreign bank intermediation; (2) the stock of short-term external debt obligations; and (3) large FX hedge imbalances**

- **We estimate USD88.4bn in aggregate short-term amortization payments of market-related debt due by private sector borrowers in the region. This is equal to nearly 41% of the FX reserves accumulated in the last two years**

- **Inter-bank rates versus USD LIBOR basis market, where the basis spread has been trading near historical wide, is an indication of the strong interest to pay USD LIBOR versus receiving local currency in order to get USD upfront to cover USD shorts**

- **Intervention has been generally ineffective in moderating volatility as dollar liquidity continues to collapse. Moreover, intervention strategies can be counter-productive, as reserves are finite and can be quickly run down. The risk is that the drawdown in global liquidity continues to adversely impact EM**

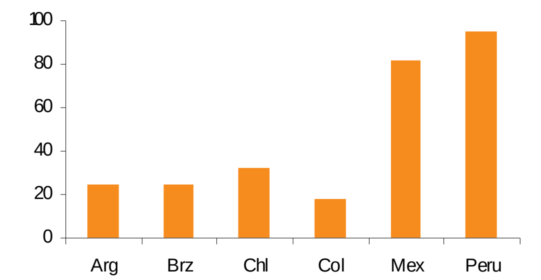
Foreign banks

With heavy foreign participation in its banking system, Latin America takes a direct hit from cross-border intermediation. This was evident even before the slew of bank failures/bail-outs in core markets in Q3. The transmission of bank-related financial contagion can be considered in two ways:

(1) **Reduction in cross border claims** referring to foreign borrowing by local offices of international banks; and

(2) **Redirection of lending standards** referring to the reduction in the parent bank's ability to lend as a result of capital restrictions.

Share of banking assets held by foreign banks with majority ownership (2006)

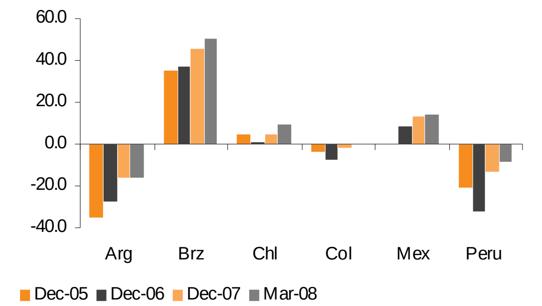


Source: World Bank, Bankscope

Updated data for Q2-Q3 2008 on banking flows is not available from BIS. But anecdotal evidence as early as May showed rising risk aversion had already triggered reverse cross-border banking flows. The slew of failures/bailouts involving major foreign banks for domestic banking systems in the region that followed provided plenty of scope for more negative repercussions. There are different vulnerabilities of exposure to foreign banks:

- **Mexico is the most exposed to a global financial crisis.** While Mexico has a relatively small percentage of cross-border claims on the domestic banking sector (we assume this reflects greater financing activity in the local market), this is overshadowed by (1) the highest concentration of foreign ownership making it essentially foreign-owned. The top four largest foreign-owned banks account for a very high 80% of total assets; (2) the banking data also underestimates cross-border syndicated loan commitments directly to the corporate sector of which Mexico is one of the top 10 recipients in EM (USD28bn in 2007). Furthermore, Mexico's exposure to a global liquidity shock is exacerbated by its economic link with the US especially where economic growth is concerned.

External positions of reporting banks / Total loans in country



Source: Central Banks, RBS

- **Brazil highly exposed.** The share of banking assets held by foreigners in Brazil is relatively low at 25%. However, the external position of foreign banks in Brazil has grown significantly in the last couple of years and is much higher than any of its peers. This is likely a reflection of the relative potential of consumer demand and vibrant corporate sector as Brazil serves as an investment hub in the region. As in Mexico, the Brazilian corporate sector is one of the top 10 recipients of cross-border syndicated loan commitments (USD33.5bn). As such, while domestic demand and growth in domestic deposits has been strong, the Brazilian financial system will feel more than just a pinch from a pull-back in foreign bank funding should the liquidity crunch deepen.

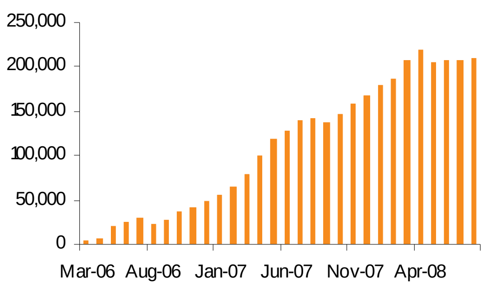
- **Chile is sufficiently exposed.** Relative foreign presence in Chile is below average with the share of banking assets held by foreign banks at 32%. This however coincides with the third highest exposure to cross boarder claims in the group. Furthermore, in addition to exposure to commodities, a harder landing of domestic demand means that any redirection of foreign bank credit adds to the downside risk for overall economic growth.

- **Colombia has low exposure.** Foreign banks have a share of the Colombian banking with only 18% of banking assets. This reduces relative vulnerability to a weaker global growth/liquidity scenario. That said cross border lending has seen a significant increase in Colombia over the last three years such that the impact of any retrenchment in cross-border lending will still be felt in the real economy.

- **Mixed vulnerability for Peru.** While Peru looks vulnerable from the point of view of significant foreign bank participation (highest in the region), exposure to cross-border claims is very low. Strong domestic growth should mitigate risk associated with heavy foreign bank presence in the country for now, but the risk is always for a harder landing.

- **Argentina has the largest number of total banks operating in the financial system, but a small concentration of the banking assets.** We see bigger risks stemming from an economic growth perspective in view of high exposure to commodities. Widening of inter-bank rates and CDS spreads coupled with unsustainable economic policies (heavy government subsidization of key industries and consumer demand through underreporting of inflation) will led to further deterioration of refinancing risk for Argentina.

Regional FX Reserves (accumulated, monthly USDmn)

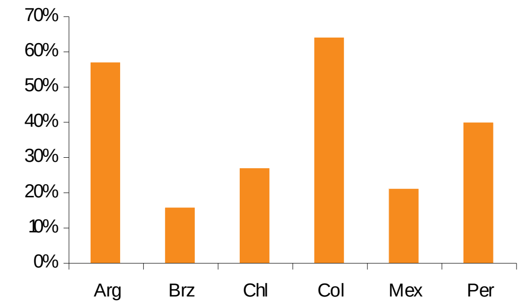


Source: Central Banks, RBS

Private sector exposure to FX

There has been tremendous FX reserve accumulation in the region in the past couple of years. Aggregate FX reserves for Argentina, Brazil, Chile, Colombia, Mexico and Peru jumped USD211bn from January 2006 to August 2008 – roughly USD7.0bn accumulation per month. This accumulation provides a cushion in view of external debt obligations ahead. However, over the next 15-months, there is approximately USD88.4bn in aggregate short-term amortization payments of market-related debt due by private sector borrowers in the region. This is equal to nearly 41% of the reserves accumulated in the last two years.

Private sector short-term external liabilities / FX reserves



Source: BIS, RBS

So in spite of this FX reserves cushion, refinancing risk will remain high for a prolonged period of time, limiting the region's access to external loan and bond markets. In addition to slower growth prospects in the region, there are structural weaknesses particular to each country that could exacerbate the vulnerability to dollar constraints in this current environment.

To better gauge this liability to limited access to external markets, we looked at each country's FX reserves against the stock of short-term external financial liabilities (external debt programs, commercial credit and inter-company loans maturing in the next 12 months) reported under each country's International investment position (IIP).

- **Colombia: High exposure exacerbated by structural weaknesses.** In Colombia, short-term debt obligations of USD14.9bn amount to a surmountable yet very high 64% of the country's USD23.4bn hard currency reserves. This reinforces our view on why COP will under perform in the current environment. A structural account deficit and risks of sharper revision in expected FDI after three very strong years of longer term flows will exacerbate the fall-out from a squeeze in dollar funding. Effectively, the trend in economic growth in Colombia had already reversed before the deterioration in the external backdrop. This raises risks of an even more pronounced deceleration in the remainder of the year and is negative from a refinancing risk perspective.

- **Peru: Heavy private sector FX exposure offsets reserve cushion.** Peru's USD33.4bn in FX reserves does not provide much comfort against significant short-term debt liabilities of USD27bn in the private sector (40% of FX reserves) and aggressive use of FX reserves (selling of

Amortization payments due 2008-2009

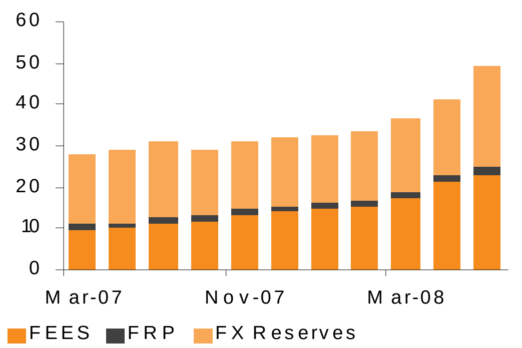
	Total	Q4 2008	H1 2009	H2 2009
Latin America		31.0	29.0	28.4
Emerging Europe		26.6	34.2	34.0
Emerging Asia		29.7	60.3	53.8
Bonds				
Latin America		8.2	26.8	14.9
Emerging Europe		5.0	12.2	11.3
Emerging Asia		17.9	36.8	36.5
Syndicated Loans		22.8	0.9	13.4
Latin America		21.5	22.0	22.7
Emerging Europe		11.8	23.5	17.3
Emerging Asia				

Source: IIF

USD) to defend USD/PEN. FX controls in place serve as a structural impediment in the Peruvian FX market which could highly exacerbate dollar liquidity constraints.

■ **Chile: High level of exposure offset by stabilization funds.** In Chile, short-term debt obligations of USD13.5bn also look high against USD24.2bn in reserves. But for Chile, the FX cushion provided by stabilization funds (on the order of USD25.1bn) brings short-term debt obligations as a proportion of hard currency reserves from 56% to 27%. We stick with the view that this cushion will translate into relative strength for CLP in the region, when the bulk of EM asset re-pricing goes through.

FX and stabilization funds



Source: BCCh, Chilean Finance Ministry, RBS

■ **Brazil and Mexico: High level of FX reserves undermined by large un-hedged corporate FX positions and exposure to FX derivatives.** FX reserves against the stock of short-term external financial liabilities ratios for Mexico and Brazil are much lower at 21% and 16%, respectively, underpinned mostly by the massive accumulation of FX reserves (particularly for Brazil) and relatively modest external leverage of the corporate sector. This is also particularly the case for Brazil. The unveiling of significantly large un-hedged positions in the corporate sector and losses on FX derivatives in both countries however, adds a layer of risk to the corporate sector. Ultimately it exacerbates the demand for hard currency and leads to significant deterioration in FX market technicals.

There is no hard data on FX exposure to derivatives and great divergence on the extent of the damage. In Brazil, the market is working with a number around USD20-30bn across potentially 200 small- to large-sized companies, though this has been denied by government sources. Yet there is anecdotal evidence. Several of Brazil's commodity blue-chips took a hit including Grupo Votorantim which announced it spent BRL2.2bn to eliminate FX risk; and Aracruz USD1bn.

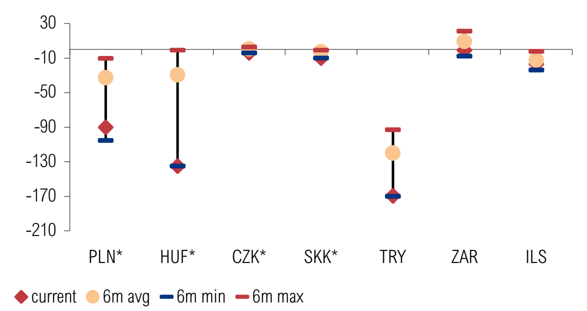
Considering greater liquidity that exists in Mexican options markets, we can infer a good amount of exposure there as well. Mexico's large supermarket chain Comerci filed for bankruptcy recently with estimated liabilities of USD2bn of which the bulk was said to be related to FX exposure and on a smaller scale Vitro also announced FX losses on excessive peso exposure.

Basis – easing but still wide

The strong demand for USD is evident. Inter-bank rates versus USD LIBOR basis market, where the basis spread has been trading near historical wide, is an indication of the strong interest to pay USD LIBOR versus receiving local currency in order to get USD upfront to cover USD shorts.

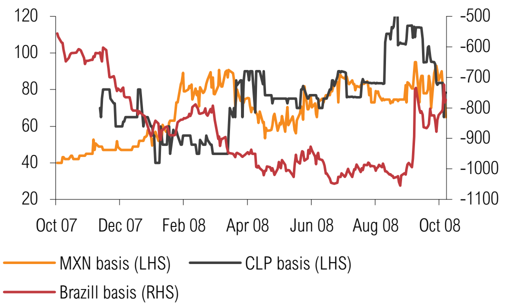
The widening in basis is particularly noticeable in the CEEMEA region, where most EM/LIBOR basis spreads are more actively quoted (see *Top view - CEEMEA basis swaps, 14 May*). When comparing the two regions, it is worth highlighting that the basis convention is quoted differently in Latin America from that of CEEMEA. In Latin America, basis is quoted as EM flat against USD LIBOR + margin, whereas in CEEMEA, basis is quoted as EM + margin against LIBOR flat. This is an important difference because in CEEMEA, when the demand for USD is strong relative to the local currency, basis will move to the left, but

CEEMEA basis versus LIBOR



Source: RBS, Bloomberg. * versus Euribor

Fig 1.Mexico, Chile, Brazil*: 2Y basis versus LIBOR



Source: RBS, Bloomberg, *estimated using Cupom Cambial - DI

the opposite is true for Latin America.

In Latin America, Mexico and Chile are the two countries where basis is tradable. There is liquidity for Argentina, Colombia and Peru. In Brazil, where basis is not directly tradable, we use the difference between the Jan 2010 CUPOM CAMBIAL and Jan 2010 DI. Jan 2010 DI is chosen over other futures as it is the most liquid compared with other maturities. As the CUPOM CAMBIAL fixed rate presents the onshore USD rate (6.95%), which is lower than the DI (14.69%), stronger demand for the USD should drive CUPOM CAMBIAL rates higher, resulting in a less negative yield difference between the CUPOM CAMBIAL – DI curves. 2Y basis is used to make it more comparable to that chosen maturity of the DI.

Three key points to note.

(1) **Brazil** basis is still near 6M high – indicating that demand for USD remains high relative to the BRL. The higher CUPOM CAMBIAL rate can be explained by (1) lack of USD in spot; (2) stops in USD receiver positions; (3) selling in USD/BRL NDF; and (4) BCB swaps auctions which puts an upward pressure on onshore USD rates.

(2) **Mexico** basis has been rising and only started to ease earlier this week – it shows that Mexico USD funding is also stretched, but efforts by Banxico on providing liquidity through aggressive intervention has alleviated to some extent the USD funding situation.

(3) **Chile** basis is actually below 6M average of 88bp, from a high of 114bp since mid September – indicates that USD liquidity in Chile is the least tight compared with Mexico and Brazil. This can be explained by (1) authorities buying USD versus selling CLP forward, injecting USD into the system; (2) allowing pension funds to extend the duration of the hedge from 3M to longer-tenor to ease short-term USD liquidity; and (3) perception of strong FX reserve position.

Basis in CEEMEA has started to move to the right (i.e. demand for USD or EUR has started to ease) in the past few days as a result of the recent efforts to inject liquidity into the market, though activity has been mainly in the short-end. We expect to see a similar pattern in Latin America basis market as the injected liquidity works through the system.

Correlations – basis and local market variables

In this section we investigate the correlation between Latin American basis and key market variables.

In Table 1 below, we display the 6M correlation between MXN, BRL and CLP 2Y basis against (1) the local rate curve; (2) local market 3M inter-bank rates; (3) difference between local market versus US inter-bank rate; (4) local FX; and (5) CDS to examine the relationship between basis and these local market variables. The result for EURIBOR/LIBOR basis is provided as a reference.

In **Mexico**, basis correlates quite well with *short rates*, i.e. as basis widens (i.e. demand for USD increases), local rates go up. The 'obvious' link here is risk aversion, i.e. as risk appetite falls, demand for USD and risk premium increase, resulting in higher rates in EM in general, particularly with the high carry and more 'owned' country which **Brazil** falls in that camp.

Risk aversion also forms the link between basis and *CDS*, i.e. as basis widens (driven primarily by risk aversion), EM CDS spreads rise as a result of higher premium. This explains the higher correlation between basis and CDS in

Table 1. Correlation Analysis between MXN, BRL and CLP basis with market variables (16 Oct)

6M Correlation between:	**Euro**	**MXN**	**CLP**	**BRL Jan 10**
basis & local curve	-0.67	0.13	-0.78	0.59
basis & short rates	-0.95	0.53	0.19	0.42
basis & short rates differential	0.92	-0.13	0.14	-0.65
basis & FX	0.66	0.27	0.50	0.78
basis & CDS		0.46	0.20	0.68

Source: RBS

Brazil.

Consistent with our intuition, basis should have a positive correlation with *USD/EMFX* – the increase in the demand for USD drives USD/EMFX higher, which agrees with our result.

The CLP basis and *curve* (using 2Y 10Y swaps) shows a relatively high correlation at -0.78, which means local curve steepens as basis falls. This could be explained by the purchase of CLP which has helped the short-end more than the long-end.

The BRL curve is showing a positive correlation with basis and is consistent with our view of pronounced steepening of EM local rate curves – that the short-end is driven mostly by liquidity/policy rate expectations while the long-end is affected by fiscal/inflation/credit premium considerations.

The other interesting read is the negative correlation between BRL basis and short-rate differentials. This means that as BRL basis widens (i.e. demand for USD increases relative to the BRL), the rate differential between USD LIBOR and Brazil DI narrows. The apparent explanation is as USD liquidity tightens, USD LIBOR shoots up faster than onshore local rates, resulting in the narrowing in the rate spread.

Central bank recourse – a necessary step…but barely enough

Sustained weakness in EMFX has put intervention back on central bank agendas in Latin America. Without exception, all of the regional Latin American central banks introduced changes to FX policy in the last couple of weeks. Initially, the common policy objective was to provide temporary dollar liquidity to smooth out market volatility. As such, the Brazilian and Chilean central banks resorted to short-dated FX repos signalling to the market that there would be no depletion of reserves. But this changed quickly and intervention strategies have since been much more aggressive with direct sales in spot and use of derivatives.

Intervention has been generally ineffective in moderating volatility as dollar liquidity continues to collapse. Moreover, intervention strategies can be counter-productive, as reserves are finite and can be quickly run down. The risk is that the drawdown in global liquidity continues to adversely impact EM and that policymakers resort – in some cases – to rate hikes or capital controls. We see the biggest risk of capital controls in Colombia, Peru and Argentina and risk of reversal in monetary policy (towards loosening) in all the countries.

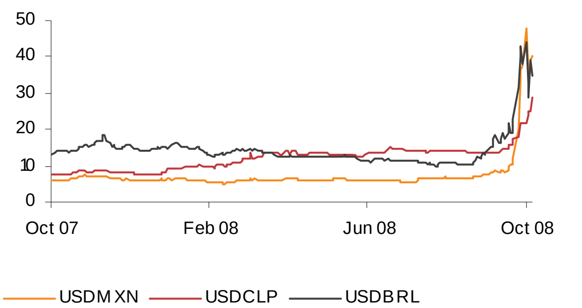
■ **Brazil: By far, the Brazilian Central Bank (BCB) has been most active.** With the use of short-dated FX repo lines, outright spot sales in FX markets, reverse FX swaps and derivatives (issuance of short-dated FX swaps). We estimate that between 19 September when the BCB first came into the market and 16 October, total intervention through this policy mix has been USD18.3bn or 9% of current FX reserves (FX reserves as per end-August-08). This essentially reverses all the spot purchases that BCB made this year between January-August.

In addition to these more direct measures BCB is extending (BRL5bn-worth) and guaranteeing external credit lines for Brazilian corporates abroad. BCB also plans to provide dollars to Brazilian banks abroad collateralised by prime securities. For both measures, BCB will use FX reserves.

■ **Mexico: Measured intervention. The extent of M**XN depreciation this month and ripple effect from corporate derivatives exposure finally convinced an overly conservative Banxico of intervene in the FX market on 8 October marking its first intervention since the Asia/Russia default crisis. At the first go, Banxico sold USD2.5bn, but unlike Brazil's BCB which adheres to a more discretionary model, Banxico announced additional dollar sales would be limited at USD400mn and made only under the condition that MXN depreciates 2% in respect to the fixing of the previous day. Since the start of intervention, Banxico has sold US10bn on a discretionary basis and USD1.2bn through the 2% trigger mechanism. This is equal to 11.2% of FX reserves (FX reserves as per end Aug-08).

While basis suggest that the dollar pinch in Mexico has improved somewhat since the intervention, MXN volatility has not subsided, which could be more related to market nervousness around the unveiling of more corporate derivative-related losses. Coincidently or not, Banxico Chief Ortiz has recently indicated that dollar sales may end soon. But the market is fickle and should further currency pressure force Banxico to remain present in the market, Banxico could resort to an options-based strategy with which it has used in the past to accumulate dollar reserves.

CLP vol lagging MXN and BRL vol

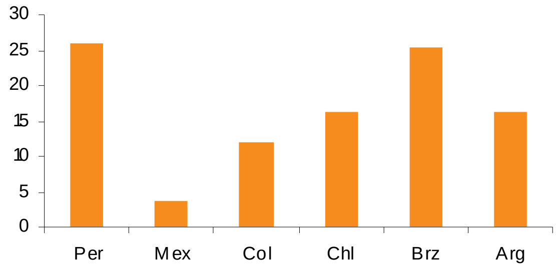


Source: RBS, *Implied 3M Market Vol (ATM Strike)

■ **Chile: Agile yet subdued intervention.** Similar to Brazil, Chile first used short-dated repos to provide dollar liquidity to the market, but quickly complemented this with FX swaps. So far, BCCh has offered USD1.5bn in FX swaps, placing only USD618m and in spot auctions has sold around USD853m for a total of USD1.47bn in intervention. In addition to these measures, Bcch temporarily modified reserve requirements for banks to allow them to meet requirements for FX deposits with other currencies than the USD.

Intervention has been less than 3% of FX reserves and stabilization funds together representing total hard currency reserves. This is a stark contrast to the proportional amount of intervention in the rest of the region. More importantly, CLP volatility has been lower than BRL and MXN. The caveat is any sharp increase in fiscal spending by the administration as economic growth slows more assertively as this would weaken the support base provided by the stabilization funds.

Reserve/import cover ratio (months)



Source: RBS

■ **Colombia and Peru: Inconsistent and overly-reactive intervention strategies.** The track record in Colombia and Peru on FX intervention is weak. Only recently, the Colombian government eliminated capital controls that kept speculators out of the market since May-2007. The central bank (Banrep) was one of the last central banks in the region to halt dollar buying in the FX market on 7 October. Since then, Banrep intervened via auction of dollar put-calls (USD180mn) on the trigger of the volatility mechanism and has stated it is prepared to intervene through discretionary intervention.

In Peru, the central bank (BCRP) intervenes directly and discretionary. Since mid June when BCRP reversed its intervention strategy and started to sell dollars in the market to defend the USD/PEN level at 3.00, it has sold a total of USD3.9bn, or 11% of FX reserves (FX reserves as of end Aug-08). This is roughly USD168m/daily, but on two occasions, daily dollar sales were upwards of USD400m. In addition, authorities implemented a series of capital controls since the beginning of the year in order to curb speculative flows. While this was a key driver for PEN weakness as global risk aversion deteriorated and dollar liquidity dried up, BCRP has not yet moved to remove controls.

Intriguingly, BCRP's recently announced plans to tap the external markets for dollar liquidity even though external debt payments by the sovereign for next year are covered. With a new cabinet in place, we view this as an attempt by the new administration to assert its mark and commitment to the current economic policy in place. Inconsistent polices in this environment however are penalized by the market and USD/PEN remains a one-way trade (to the upside).

Relatively low volatility in Colombia and Peru are reflective of low market volume. On a relative basis, the market is more overweight BRL and MXN and because of the better liquidity in the latter two they serve as a hedge against the rest of the region.

Market implications

At best, intervention strategy by central banks in the region will alleviate, but not reverse the pressure on dollar liquidity in the region in the near-term. The pull-back in foreign bank intermediation, the stock of short-term external debt obligations and large FX hedge imbalances are all key factors that will sustain demand for hard currency.

Private sector refinancing risk will remain high for a prolonged period of time limiting the region's access to external loan and bond markets. There is particular concern with Brazil and Mexico where high level of FX reserves is undermined by large un-hedged corporate FX positions and exposure to FX derivatives and coincides with the widening of basis. Chile looks more solid on the back of structural strengths which have not served to completely avert a dollar squeeze, but has provided a much larger cushion. This is in line with our view that CLP will out perform the region once the bulk of EM re-pricing goes through.

Short-end basis in the CEEMEA region has started to ease and basis in Latin America should eventually benefit from the recent (global and local) injection of liquidity. The risk is further deterioration in the global backdrop as this will dampen intervention efforts by the regional central banks. The risk remains a drawdown in global liquidity continues to adversely impact EM and that policymakers resort – in some cases – to rate hikes or capital controls. We see the biggest risk of capital controls in Colombia, Peru and Argentina and risk of reversal in monetary policy (towards loosening) in all the countries.