IT in Financially Stable Economies: Has it been Flexible Enough?

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Agenda

- Motivation, what we do and what we find
- Assessing the monetary policy response
- Assessing non-monetary-policy responses
- Tentative conclusions

Motivation

- Aggressive monetary policy response to the current crisis.
- Both with standard (e.g. overnight policy rates) and unconventional policies.
- This has raised a broad number of issues, in emerging and developed economies as well as within the Inflation Targeting (IT) economies:
- How does the reaction with standard policies compare with what the prescribed IT reaction?
- How have unconventional policies fared?

What we do

- We focus on a selection of nine IT central banks from Asia, Oceania and Latin America:
  - Australia, Brazil, Chile, Colombia, Indonesia, Korea, Mexico, Peru, New Zealand.
- Mostly stable financial/banking systems allows us to avoid thorny issues:
  - Quasi-fiscal consequences of credit risk in the balance sheet of the central bank.
  - Fiscal-Monetary policy coordination.
  - Impact of credit-easing or quantitative-easing policies on a broad set of asset prices (house prices, long term interest rates, equities).

What we do

- We address instead the following questions:
  - Has monetary policy in these financially-stable economies deviated from standard prescriptions of policy rules during normal times? To what extent? How can we interpret these deviations?
  - What have been the non-monetary-policy measures adopted?
  - Have these non-monetary-policy measures been effective in compensating/mitigating the impact of financial turmoil on money markets (both local currency and onshore USD) and the exchange rate?

What we find

- Monetary policy in the selected economies has deviated substantially (200-600bp) from prescriptions of a standard policy rule given expected inflation and the output gap.
- We suggest that this might be better understood as a shift in the persistence of monetary policy (Activism) and not a higher weight on the output gap (Dovishness)
- Using a compilation of non-monetary-policy measures adopted by the selected central banks we obtain more heterogenous results regarding the impact on local financial variables.
- In some economies, the measures adopted eased significanly the increase in local money market spreads during the financial turmoil. In others, these policies seemed to have been more of a preventive nature.
- We find limited evidence, if any, of exchange rate reactions to the policy measures during the period of heightened turmoil.

Assessing the MP response

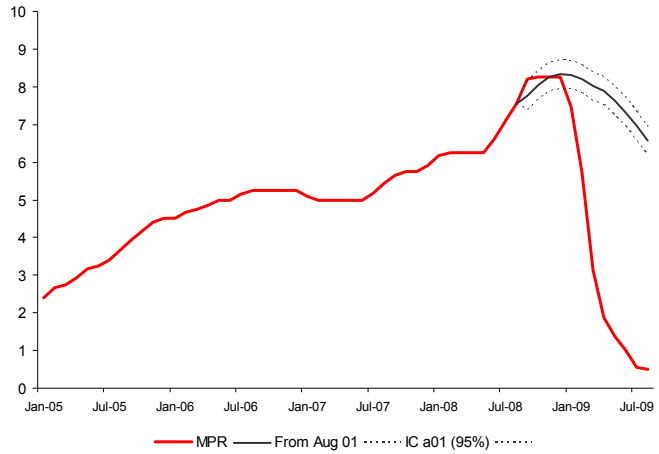
- We use as a benchmark for monetary policy a standard monetary policy rule based on observed information:

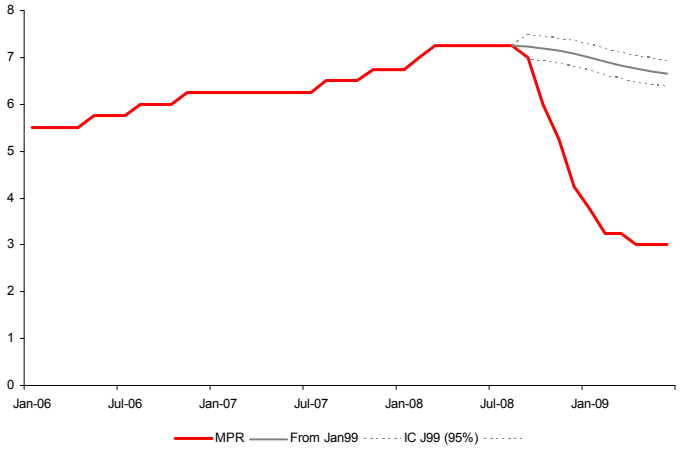
$$r_t = g + r\, r_{t-1} + (1- r)\left[g_p (p_{t-1} - p^*) + g_x (x_{t-1} - x^*)\right]$$

- The estimation frequency is monthly.
- The measure of output gap pressures is the difference between industrial production growth and its rolling 24 month average.
- Avoids end-of-sample issues of statistical filters.
- Consistent with Walsh's (2003) speed limits.
- Inclusion of persistence captures the principle of predictable monetary policy.

Assessing the MP response

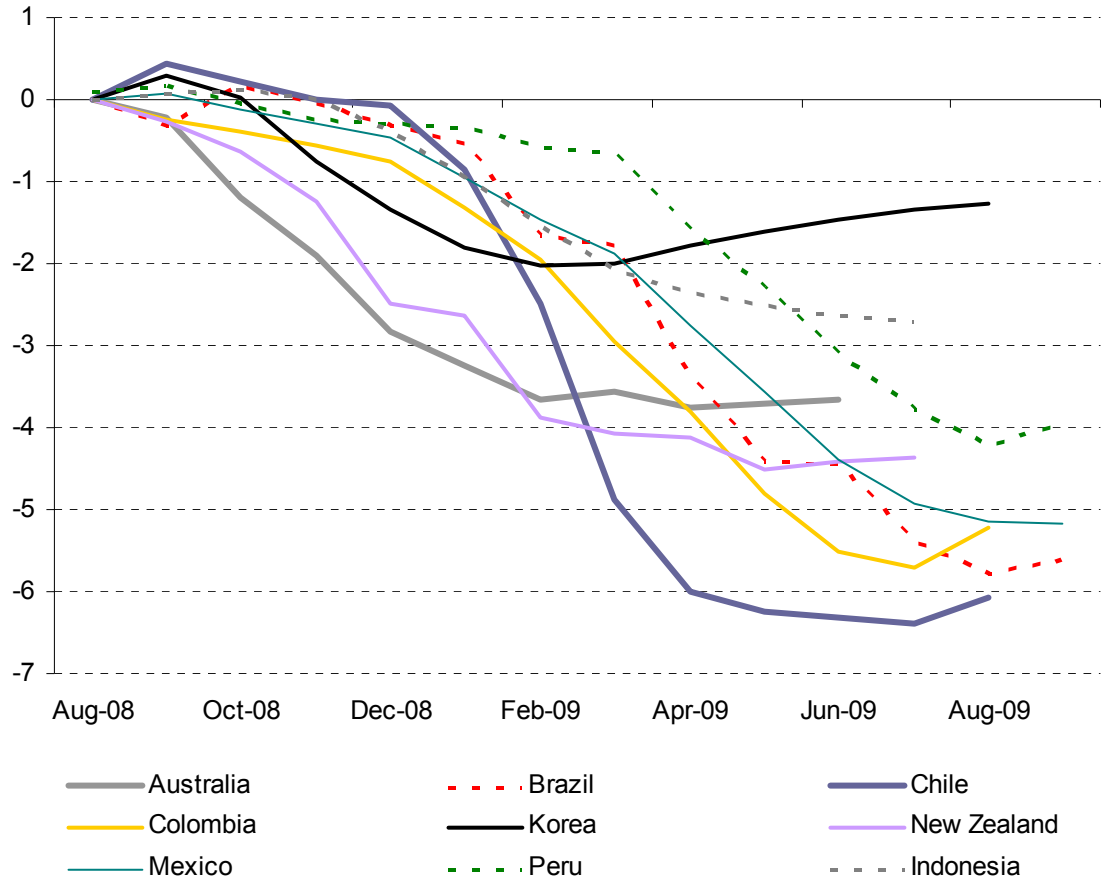
- Pre-crisis estimation window from the moment when central banks adopted current policy framework and were not subject to currency attacks: (e.g. Chile 2001, Brazil 2005) up to August 2008.
- Simulation of monetary policy response given output and inflation developments from September 2008 onwards. Comparison with actual monetary policy paths.
- Two examples, Chile and Australia:





Assessing the MP response

- Gaps between simulated paths for policy and actual stance:



- Earlier reaction by Australia, NZealand, Korea, while more delayed reaction in LATAM + Indonesia.
- Larger deviation in most LATAM.
- Fear of floating delayed response in LATAM and Indonesia?
- Weaker transmission mechanism led to more aggressive easing in LATAM?

Assessing the MP response

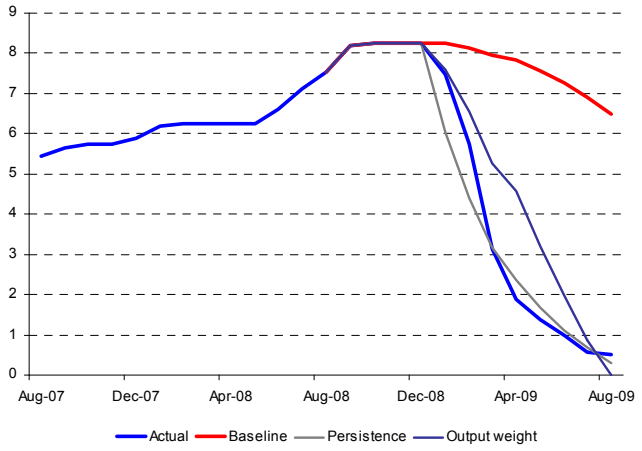
- Aggressive easing of monetary policy during financial stress consistent with Svensson (2009), Curdía and Woodford (2009).
- Structural interpretation outside of the scope of our work, but partial interpretation is possible of the gap between the observed (*ro*) and the prescribed monetary policy:

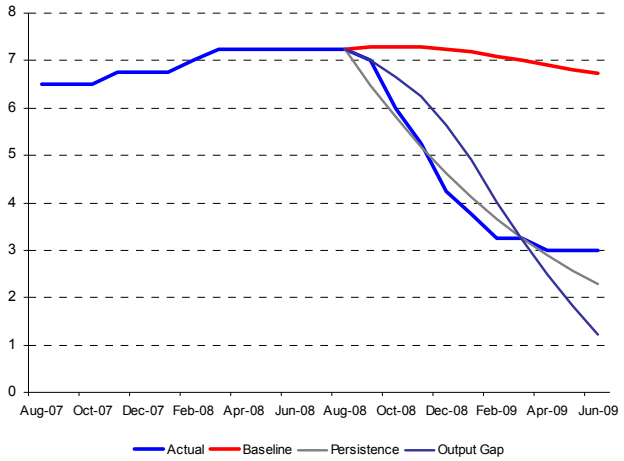
$$ro_t = r_t + e_t = g + r\, r_{t-1} + (1- r)\left[g_p (p_{t-1} - p^*) + g_x (x_{t-1} - x^*)\right] + e_t$$

- Three candidates for the interpretation of the monetary policy shock ϵ:
  - Activism (lower persistence)
  - Dovishness (higher weight on the output gap)
  - Expectations (widening gap between expected and current inflation)

Assessing the MP response

- To assess these candidates, we fit a path for policy by using, alternatively, a different persistence and a different weight of the output gap, chosen so as to minimize the squared deviations of effective and fitted policy path.
- Examples: Chile and Australia



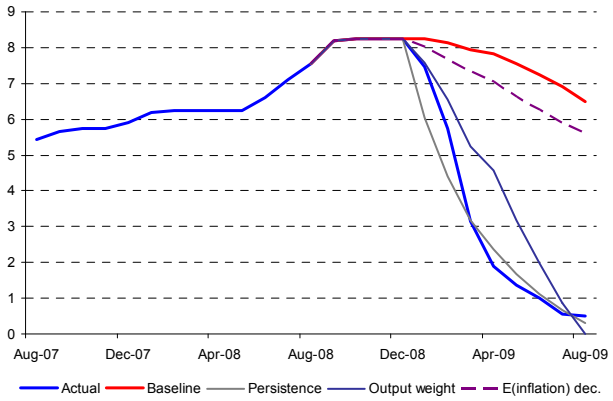


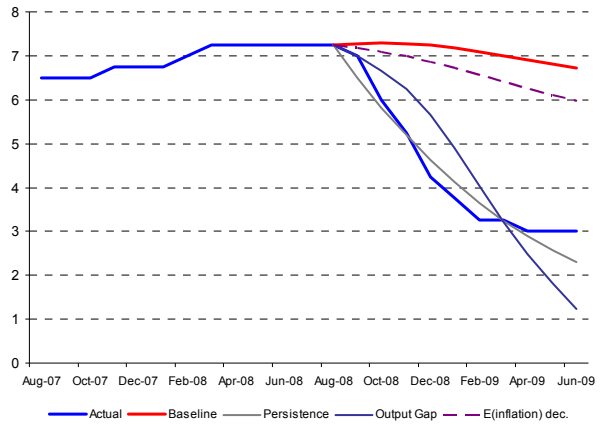
Assessing the MP response

- Concavity/convexity seems to differ, with the fitted path of lower persistence showing a dynamic adjustment more similar than the one with higher output gap.
- Moreover, the adjusted parameter for persistence is only 6 – 30% lower than the historical estimate, while the adjusted parameter for the output gap has to be an order of magnitude larger.
- We tend to interpret this as suggestive of lower persistence in monetary policy design rather than an increased weight on the output gap.
- The third interpretation is a large shift in expected inflation. We assess the likelihood of this interpretation by replacing the actual inflation gap in the policy rule with the expected inflation gap (weighted average of consensus forecast for 2009-2010)

Assessing the MP response

- Examples: Chile and Australia.





- Shifts in expected inflation do not seem be large enough to explain the degree of aggressiveness in monetary policy easing.
- Lower persistence remains as the prefered interpretation.

Assessing non-MP responses

- Focus on the more direct concerns of Central Banks: money market liquidity and the exchange rate.
- The selection of financially-stable IT economies allows to avoid thorny issues regarding credit risk in Central Bank balance sheets, coordination with the Treasury, and the impact of credit-easing or quantitative-easing policies on asset prices in general.
- Compilation of a set of non-monetary policy measures for the selected economies. These fall into three broad categories:
  - Facilities aimed at easing local currency liquidity (guarantees, expansion of collateral, extension of the term of REPO operations)
  - Facilities aimed at easing USD local liquidity (forex swaps, bilateral arrangements, directed forex liquidity)
  - Forex intervention (forward and spot USD sales/purchases)

Assessing non-MP responses

- Compilation of a set of non-monetary policy measures for the selected economies. Example: Australia:

Start Date	Ending Date	Extraordinary Action
24-Sep-08		Bilateral Swap with Federal Reserve at $10 bn (24/09/08), increased to $30 bn (29/09/08)
8-Oct-08		Frequency of six- and 12-month repos was increased to daily Acceptance of RMBS and ABCP of related parties as elligible collateral Restrictions on substituting collateral within an existing repo removed Repo Operations of 14 to 30 days (pesos) Term Deposit Facility with one- and two-week maturities introduced to absorb liquidity
12-Oct-08		State guarantee introduced for an unlimited amount for deposits until October 2011 and for debt securities with maturities up to five years.

Assessing non-MP responses

- Estimation of the impact of the specific measures adopted on three financial variables in each country:
  - Local currency money market short term interest rates.
  - USD onshore short term interest rates.
  - Nominal exchange rate.
- Allowance for all measures to affect all three variables:
  - Shifts in short term interest rates (both USD and local currency) can have exchange rate effects through uncovered interest rate parity conditions.
  - Forex purchases or sales can impact on money market interest rates depending on the degree of sterilization and whether these forex operations are spot or forward.
  - Easing tensions and uncertainty in one market can affect overall conditions in the rest of the markets.

Assessing non-MP responses

- Both the non-MP measure and its announcement should have an effect. Identification is through a dummy variable and its Δ.
- Controls: global financial variables: commodity prices, USD libor/ois spread, libor, VIX, effective nominal USD exchange rate, post Lehman Brothers dummy.

$$e_t = a + a_{vix} \ln VIX + a_{USD} \ln USD + a_{CRB} \ln CRB +$$
$$a_{lbro} D^{lbro} + a_{lois} \left(r^* - ois^* \right) + \sum_i \left(a_d^i D^i + a_{da}^i \Delta D^i \right)$$

$$i_t = b + b_r r_t + b_{re} r_{t+20} + b_{i^*} i_t^* + b_{vix} \ln VIX +$$
$$b_{lbro} D^{lbro} + b_{lois} \left(r^* - ois^* \right) + \sum_i \left(b_d^i D^i + b_{da}^i \Delta D^i \right)$$

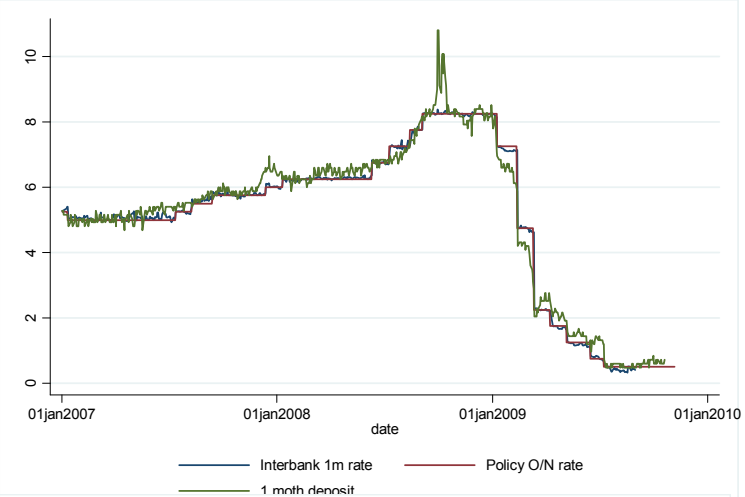
$$i_t^* = d + d_i i_t + d_r r_t^* + d_{vix} \ln VIX +$$
$$d_{lbro} D^{lbro} + d_{lois} \left(r^* - ois^* \right) + \sum_i \left(d_d^i D^i + d_{da}^i \Delta D^i \right)$$

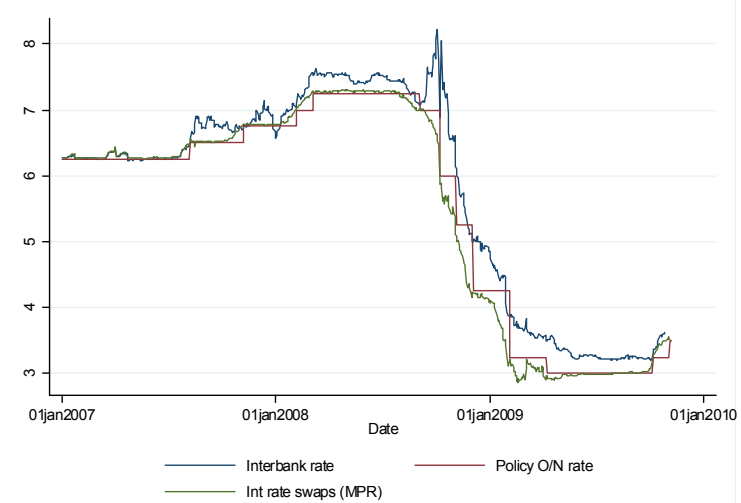
Assessing non-MP responses

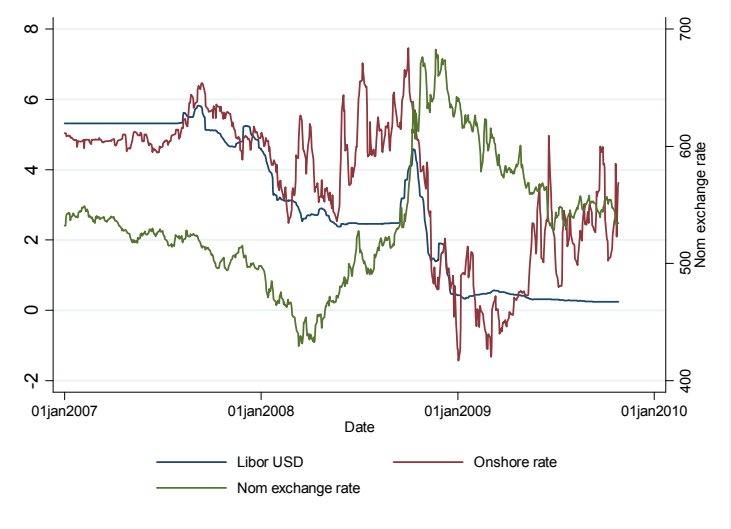
- Data for some variables is straightforward to collect.
- For local money market short term interest rates (both in local currency and USD) the task is less straightforward.
- Specificities of market infraestructure and practice imply that in each economy local currency money markets do not use standard indicators.
- For USD onshore interest rates there simply is not a direct way to obtain them.
- We use onshore forward contracts to construct implicit onshore USD interest rates.

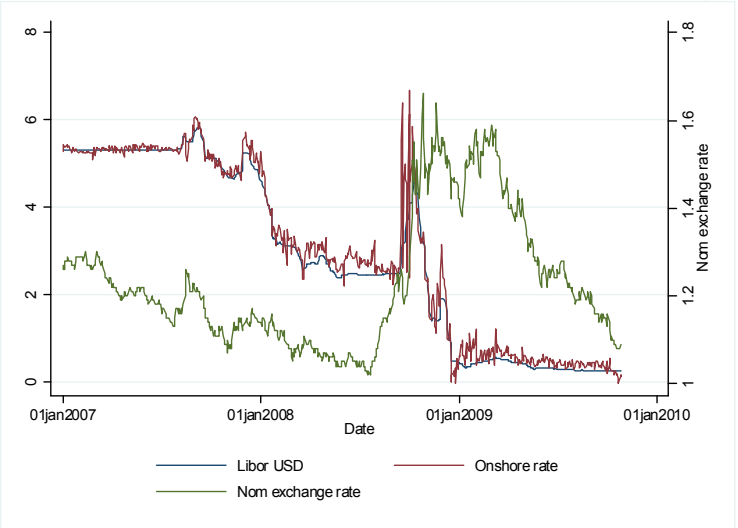
Assessing non-MP responses

- Examples: Chile and Australia (top: MPR, local curr money market interest rate, bottom: exchange rate, USD onshore interest rate, USD Libor)



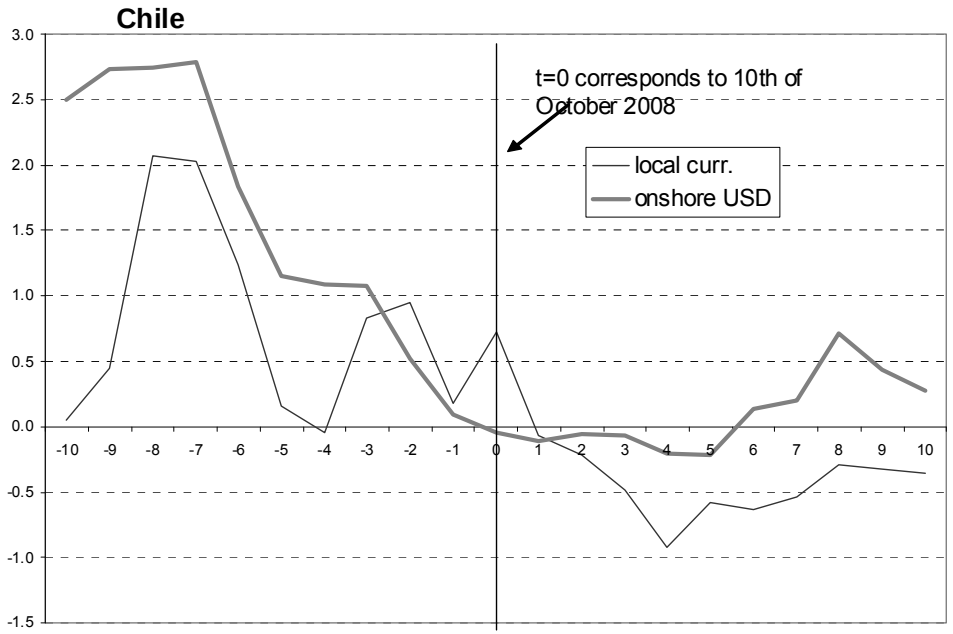


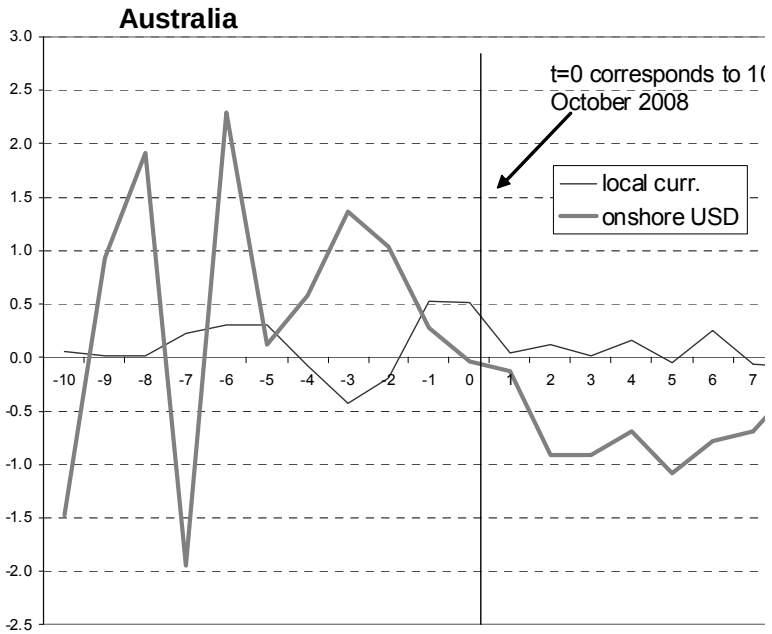




Assessing non-MP responses

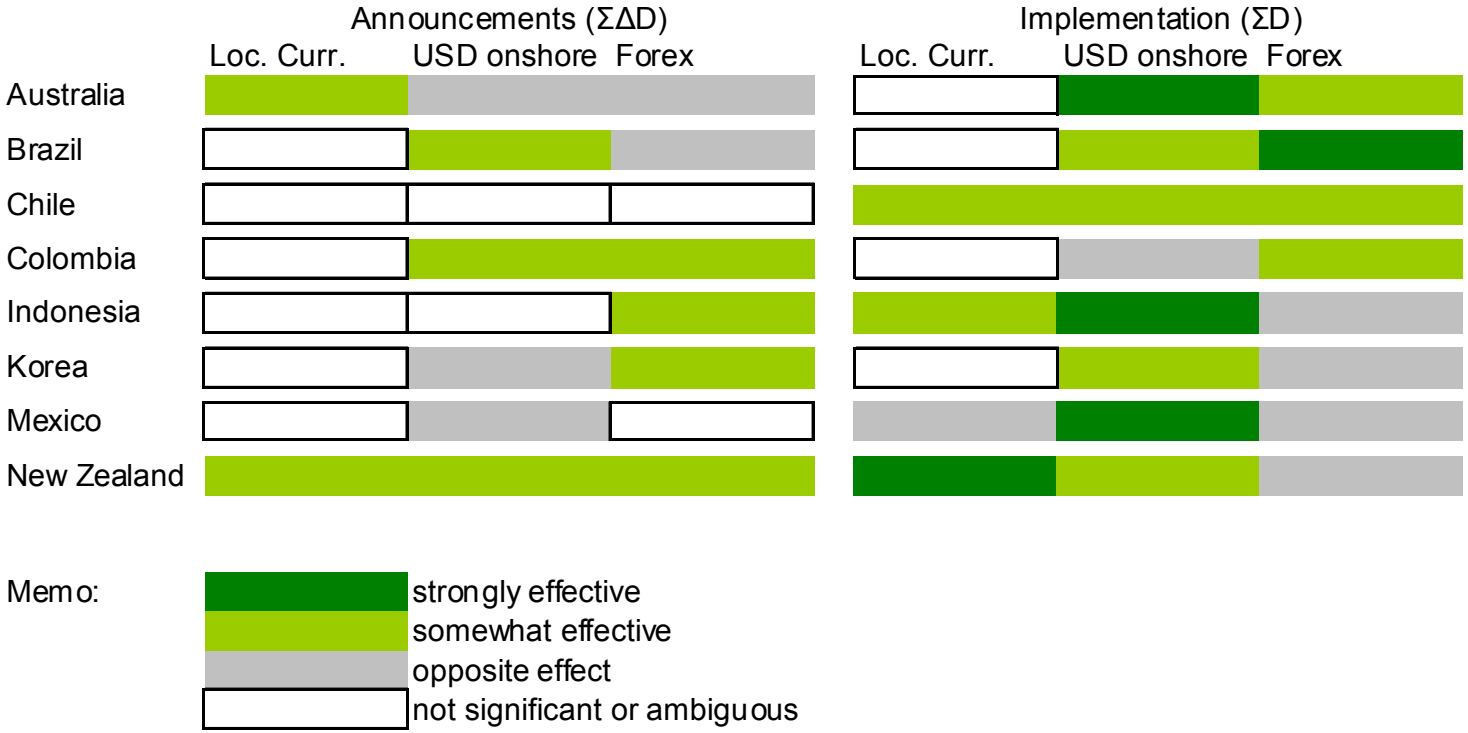
- In some situations the effectiveness of non-MP measures in easing local money market conditions is very apparent.
- Local currency and USD spreads (over swap and Libor respectively) fell sharply in Australia and Chile after mid Oct.





Assessing non-MP responses

- However, a systematic result supporting significant effects of both the announcements and the implementation of non-MP responses is not apparent from our results.
- Summary (qualitative) effects of measures on the three variables:



Conclusions

- As to the question on the title: yes it has proven flexible. Faced with exceptional events Central Banks did not change their overall framework, but did change their degree of activism (reduced persistence).
  - It is arguable whether a shift in the weight of the output gap could have implied a substantial deviation from the standard IT framework.
- In addition, most countries put in place measures to ensure an adequate transmission of monetary policy.
  - Although suggestive, the evidence we obtain is not supportive of a systematic effect of these measures across economies, across variables and across unconventional tools.
- This requires further research.

Conclusions

- Open questions:
  - Was IT flexible *enough?*
  - Why did countries in Latin America delay adjustment? Fear of floating given persistent levels of dollarization (Peru), or corporate currency mismatches (Brazil and Mexico)?
  - What determines the varying degrees os effectiveness of liquidity support measures across our sample?
  - Is a systematic and predictable approach to policy making with unconventional measures needed? Would that conflict with standard IT?

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