Discussion: Envisioning withdrawal of QE

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Overview

- Papers complement each other very well
  - Rex: Surges are different
    - What drives them? Role of global factors vis-a-vis domestic fundamentals
  - Ila/Josh: how do EMs respond to such surges (FX, interest rates, reserves)
    - The EMP they develop is a clever idea that allows you to pinpoint exactly where on the continuum of fixed-floating the policy response was
  - Natural extension of research combining both papers: what macroeconomic implications did different policy responses have in the wake of a surge?
    - Subsequent impact on domestic macro fundamentals
    - Implications for likelihood/severity of a crash/outflow

Surges (and crashes)

- Paper makes several contributions to the literature:
  - Quantum of capital matters – there are important threshold effects
  - Correctly focuses on “net” surges -- economically meaningful to assess macroeconomic impact on Ems
  - Separates asset-driven-surges from liability-driven-surges because the triggers/consequences different
  - Uses clever IV (vintage Rex!) including IMF country forecasts for GDP growth and REER overvaluation to avoid issues with lagged variables
  -

Comment #1: Why only surges? Why not crashes?

- Paper titled “Surges”
  - Why not study “crashes”? Why the asymmetry
  - Linking surges and crashes
    - Does existence of a surge make a crash more likely?
    - Do the same fundamentals matter for surges (inflows) /crashes (oitflows)? If not, what explains the symmetry
    - Or are outflows more non-discriminating than inflows? Are countries “punished for being good?” Pull factors attract surge but don’t prevent a crash
  - To my delight (dismay?) presentation had already preempted several of these questions!

Comment #2: Why are global factors not driving quantum of flows?

- Key Result: global factors act only as gate-keepers

  "Capital Surges towards EMEs only when these global conditions permit, but once the hurdles is passed, the volume of capital that flows is largely independent of it"

- A 100 bps decline in real US interest rate associated with 0.4% of GDP larger capital flows. This is very small, since surge sample had average inflows of10% of GDP

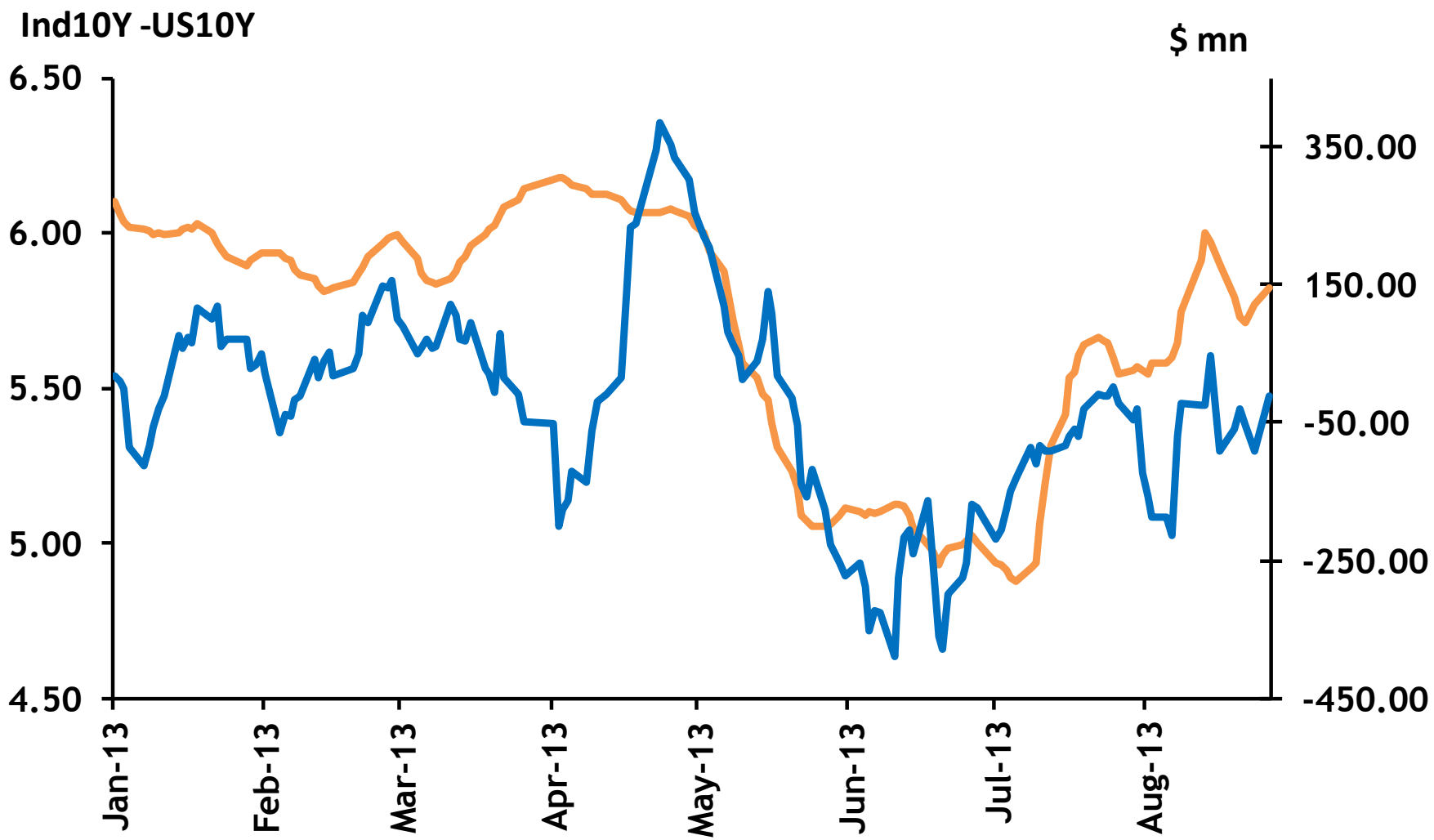
- Seems counterintuitive

  - Would expect thresholds in the "likelihood" decision (i.e. as long as US interest rates are in some range (loose, neutral, tight) the "gate is open")

  - But once the gate is open, the quantum of interest rates should matter

  - Isn't the whole debate on tapering now about quantum?

Interest Rate Differential and Debt Flows



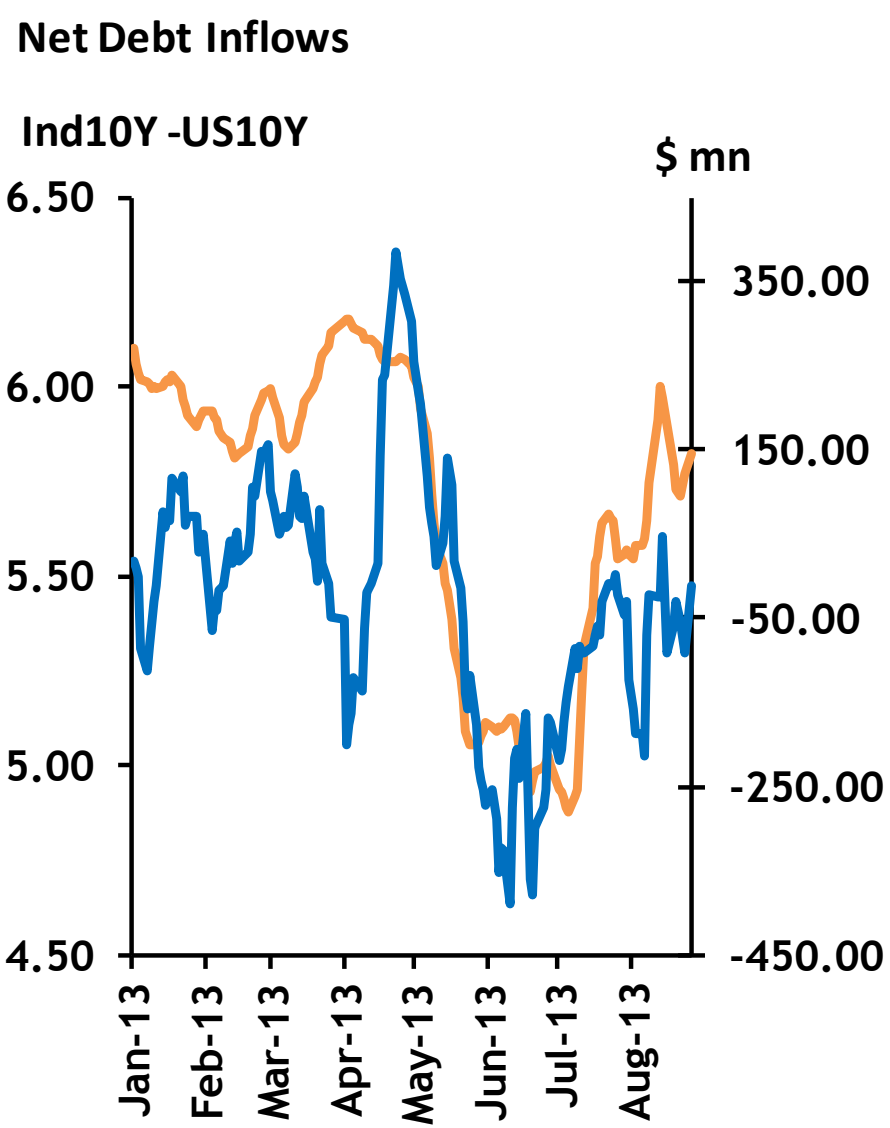
What could account for this?

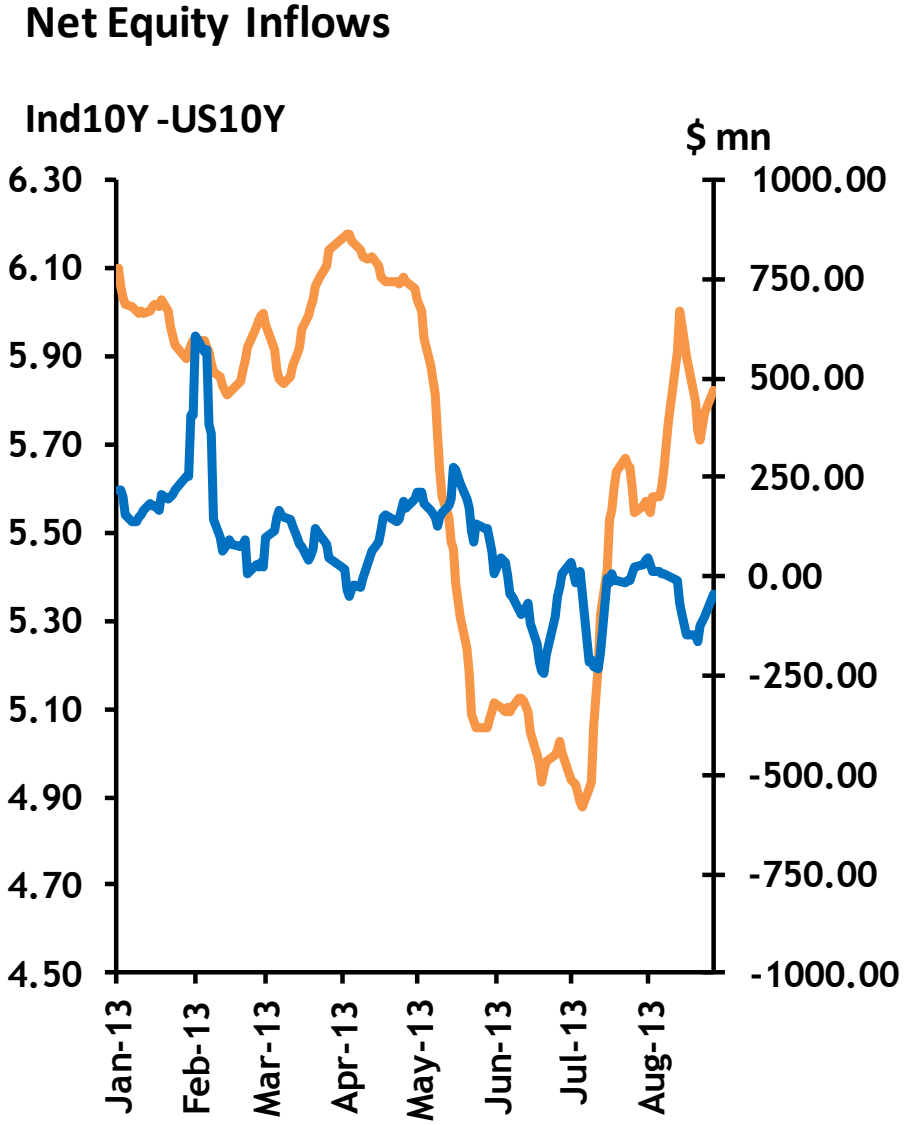
- Magnitude of surge/conditional on occurrence
  - RHS: *Real US interest rates(*), S&P 500 index volatility (*), Commodity Price Index, Regional Contagion, Real Domestic Interest Rate, REER deviation from trend (*), Optimal Current Account/GDP, Real GDP Growth, Capital Account Openness (*), Financial Interconnectedness, Exchange Rate Regime, Institutional Quality, Default Onset, Real GDP per capita(log)*
  - Theoretical justification for why Commodity Prices should be on RHS? Aren't they are a competing asset class to EM capital flows? Therefore won't they be strongly (inversely) correlated with US interest rates?
  - Given the probit regression results, won't US rates and regional contagion be strongly correlated?
  - Given the collinearity of "regional contagion" and "commodity prices" with US rates, are they suppressing the latter's estimated impact?
  - Try specification without them?

Decomposing into bond and equity flows

- Regression Results”
  - Contingent on a surge, neither domestic interest rates nor GDP matter for magnitude of inflows
  - Is that because we are lumping all kinds of flows (debt and equity) and muddying the waters
  - Separate surges into debt flows and equity flows
  - Debt more driven by the interest rate differential (see chart) but not equity (maybe inverse correlation)
  - Equity by growth – so independent variables may have more impact/meaning if surge is decomposed
- Would be interesting to see impact of interest rates on surges/crashes given debate in India about efficacy/validity of RBI measures

Next step: decomposing flows





Comment #3: connecting surges and crashes: are we asking the right question?

- Unconditional probability of a crash = 23%
- Conditional on a surge, crash probability rises to 25%
- Obvious Reason
  - Define crash to be 1% of GDP net-outflow
  - That's where the capital went, so that's where it should come out from in the event of an external shock?
  - But shouldn't it matter whether this was on the back of a 10% inflow or a 2% inflow?
  - So need to use a relative metric instead of an absolute one?
  - Instead, what proportion of inflows left in a crash? (so as not to penalize surge countries by use of an absolute benchmark)

Connecting surges and crashes: are we asking the right question?

- Defined this way, my prior is that surge countries would look better during crash times because their fundamentals were better?
  - If not,
    - Fundamentals worsened during surge?
    - Different fundamentals matter on way out compared to way in?
  - If so, what are the differences?
  - Are outflows are less discriminating than inflows?
- Next stage: better connect surges and crashes – potentially a very interesting story here

Policy Implication: fix the exchange rate ??

- Taking results at face value
  - Conditional on witnessing a surge….fix the exchange rate?
    - Fixed rate aggravates the surge (3% of GDP)
    - But, by definition, builds up reserves
    - And higher reserves, ceteris paribus, reduce the probability of a crash?
    - Consistent with Ila/Josh's result (52% of EMP accommodated through reserves; 37% through FX appreciation)
  - But, in normal times, float; because it reduces probability/magnitude of a surge?
    -

But why the policy asymmetry

- But then what explains asymmetry of policy response for outflow
  - Countries more willing to let the FX go on the way out, despite building up higher reserves. Why?
    - Real depreciation needed in new equilibrium
      - Given nominal rigidities, the real depreciation must be large accommodated through nominal depreciation? Or will painfall wage and price adjustments?
      - Beggar-they-neighbor effects?
      - Precuationary level of reserves ?
  - Key research questions: what drives the asymmetry of response

QE and EMP

- Paper makes several important contributions
  - Creates a holistic, quantitative index to capture the different pressures that QE/surges placed on EMs
  - Main contribution
    - Not that EMP show there was pressure when others didn't; e.g. significant overlap between "surges" and increased/changed EMP
    - Instead, main contribution, quantifying the policy response. What fraction of the pressure was accommodated through FX movements versus other instruments
    - Enables one to pin-point where on the fixed-floating continuum the response lay

Constructing the EMP

$$EMP = \Delta e + \rho I + \eta\Delta(i - i*)$$

- Key to construction of the index is
  - How is rho identified?
  - Can we use reserve changes to proxy for intervention?
  - Does uncovered interest rate parity hold?
- Key identifying assumption for rho is that "macroeconomic shocks are similar across contiguous periods" and therefore
  - Var(EMP**float**) = Var(EMP**fixed**)
  - But aren't shocks, themselves, endogenous to exchange rate regimes over a length of time? (time period here is often several years)

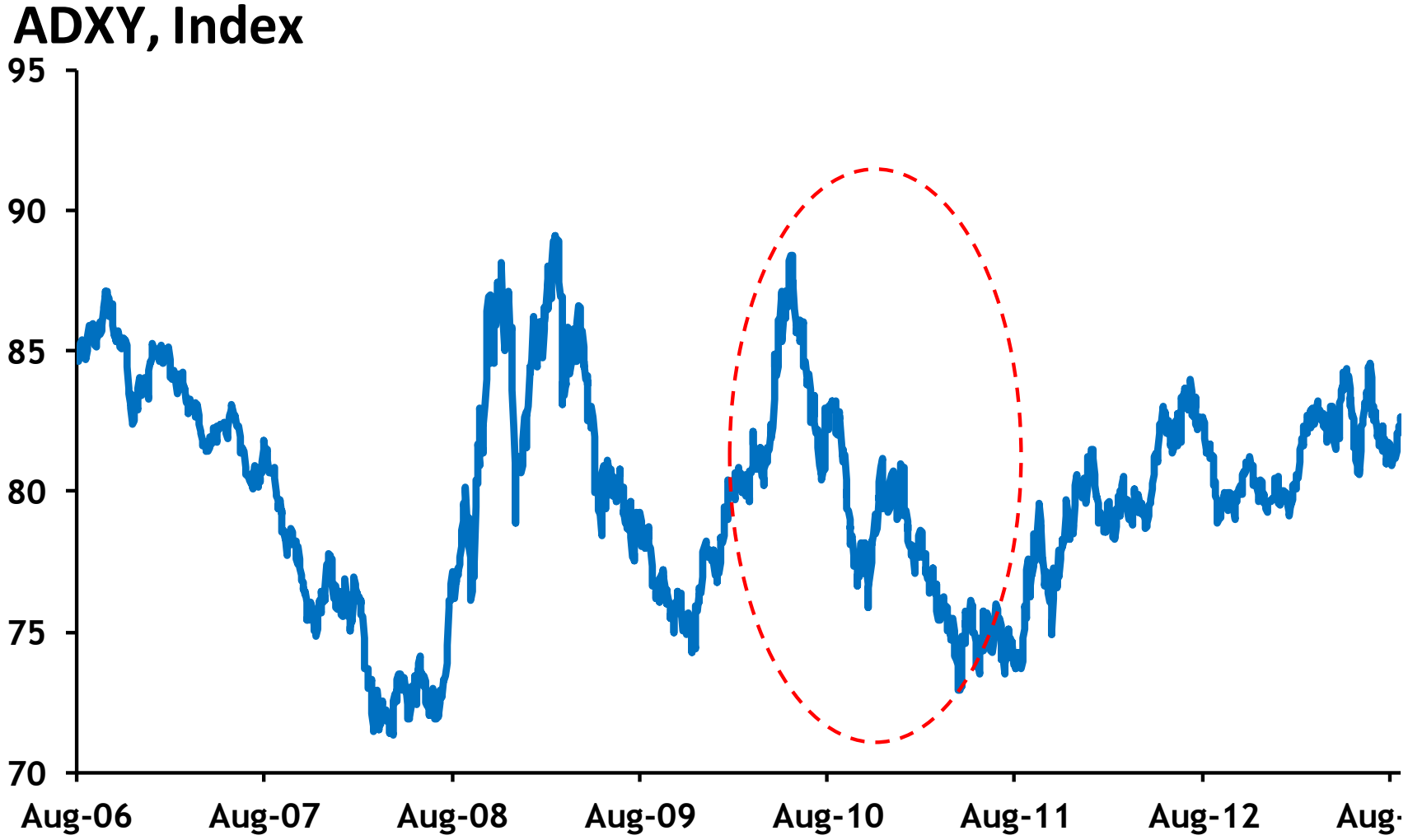
Macro shock not invariant to exchange rate regime

- Example: A fixed regime spurs more capital inflows than a floating regime in the expectation of an implicit exchange rate guarantee
  - Rex finds that existence of a fixed regime increases magnitude of capital flows by 3% of GDP – 8 times the impact of 100 bps reduction in US real interest rates!
- In cases of capital outflow, the shock could mitigate if FX is floating and is perceived to overshoot (stabilizing speculation)
- Isn't nature/quantum of a shock often function of the exchange rate regime? So can we really assume: $Var(EMP_{\mathbf{float}}) = Var(EMP_{\mathbf{fixed}})$
- Paper looks at floats at two different points in time for similar FX regimes, to conclude shocks are not very different; but this not answer the different exchange –rate regime

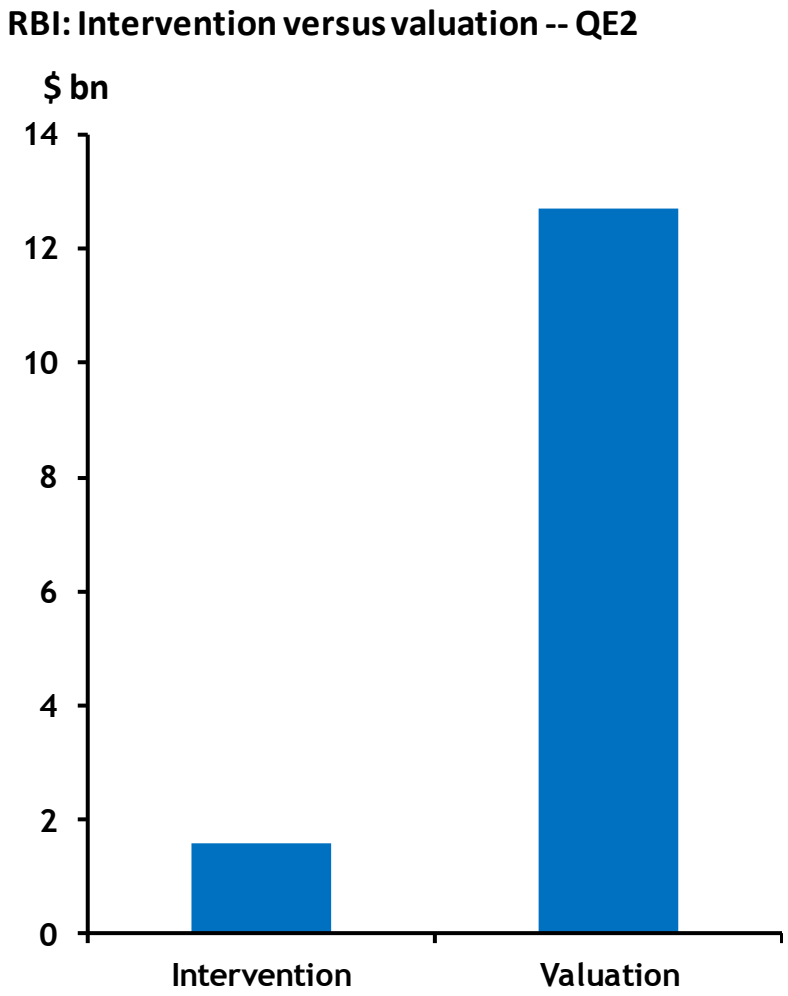
Reserve changes versus intervention

- Using reserve changes to proxy for intervention
- Reserve Changes = actual intervention + valuation effects + interest payments + swaps etc etc
- Not a bad approximation if there are no systematic biases
- But actual intervention can be very different from reserve change when there are systematic movements in the US exchange rate, because valuation effects move in one direction
- QE announcements systematically pushed down the US dollar against most currencies EQ
- Valuation effects positive and potentially large

15% depreciation of USD in QE2



The intervention that wasn't



Results found 52% of the EMP in India was absorbed by intervention during QE2; but are we just picking up valuation effects?

Are results biased? Ascribing too much intervention?

- So ascribing too much intervention
- Systematically understating the role of how much the currency was allowed to appreciate
- Same issue can occur in opposite shock – current environment USD strengthening – valuation effects are systematically negative
- So systematic biases can occur when looking at introduction/withdrawal of QE/surges – because it could affect the USD across the board

UIP consistently rejected in the data

- But we know that empirical research has consistently rejected:

$$i \neq i* + E(e)$$

- Possible explanations
  - Imperfect capital mobility (which authors control for)
  - Peso problem (using ex-post exchange rates to capture expectations)
  - Different default risks of assets in two countries (measured by deviations of the forward premium)
- But empirical research has controlled for all three of these objections, and still found equality does not hold

Ascribing too much weight on interest rate response

- Implication: Assumption of “risk neutrality” is wrong
- There must exist some degree of risk aversion
- In other words, EM interest rates must also embody a “currency” risk premium (in addition to a default premium)
- So we cannot use UIP to extract expectations of the exchange rate
- To the extent it is a “premium”, interest rate differential overstates degree of expected depreciation
- Ascribing too much weight on FX/interest rate in response

Opens up lots of interest avenues for future research

- Measurement issues apart, paper makes an important contribution
- Main contribution, quantifying the policy response. What fraction of the pressure was accommodated through FX movements versus other instruments?
- Where on the fixed-floating continuum was the response?
- Natural extension of research combining both papers: what macroeconomic implications did different policy responses have in the wake of a surge (Ajay's point)?
  - Subsequent impact on domestic macro fundamentals
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