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 (outflows)? 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 gatekeepers
  
  “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 of 10% 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

Ind10Y - US10Y

$ mn


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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 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

Net Debt Inflows

Ind10Y - US10Y

$ mn

-450.00
-250.00
-50.00
150.00
350.00
4.50
5.00
5.50
6.00
6.50
Jan-13
Feb-13
Mar-13
Apr-13
May-13
Jun-13
Jul-13
Aug-13

Net Equity Inflows

Ind10Y - US10Y

$ mn

-1000.00
-750.00
-500.00
-250.00
0.00
250.00
500.00
750.00
1000.00
4.50
4.70
4.90
5.10
5.30
5.50
5.70
5.90
6.10
6.30
Jan-13
Feb-13
Mar-13
Apr-13
May-13
Jun-13
Jul-13
Aug-13

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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
  - \( \text{Var}(\text{EMP}_{\text{float}}) = \text{Var}(\text{EMP}_{\text{fixed}}) \)
  - 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: \( \text{Var}(\text{EMP}_{\text{float}}) = \text{Var}(\text{EMP}_{\text{fixed}}) \)
- 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

▪ Implications for likelihood/severity of a crash/outflow