

# Discussion of "International Reserves before and after the global crisis: Is there no end to hoarding?"

Joshua Aizenman, Yin-Wong Cheung and Hiro Ito

Rajeswari Sengupta (IGIDR, India)

March 6, 2015

13th NIPFP-DEA Research Meeting, Neemrana, India

- EMEs increased reserves accumulation after 1990s crises.
  - Precautionary insurance against volatility associated with financial globalization
  - Mercantilist motive
  - Keeping up with the Joneses
- Post GFC, global macro landscape is volatile again; EMEs no exception.
- Reserve accumulation continued post GFC.

- EMEs increased reserves accumulation after 1990s crises.
  - Precautionary insurance against volatility associated with financial globalization
  - Mercantilist motive
  - Keeping up with the Joneses
- Post GFC, global macro landscape is volatile again; EMEs no exception.
- Reserve accumulation continued post GFC.
  - What has been the impact of GFC & structural changes in global economic environment on IR hoarding patterns?
  - Were some countries motivated to supplement IR with new policies post GFC?

- Panel fixed effects regressions, supplemented with PCA, for developing (73) & developed (22) countries

- Panel fixed effects regressions, supplemented with PCA, for developing (73) & developed (22) countries
  - Evaluates stability of factors accounting for IR hoarding for 3 sub periods, pre (1996-2006), during (2007-2009) and post (2010-2012) GFC.

- Panel fixed effects regressions, supplemented with PCA, for developing (73) & developed (22) countries
  - Evaluates stability of factors accounting for IR hoarding for 3 sub periods, pre (1996-2006), during (2007-2009) and post (2010-2012) GFC.
  - Group explanatory variables in 3 categories: Traditional macro, financial, new.

- Panel fixed effects regressions, supplemented with PCA, for developing (73) & developed (22) countries
  - Evaluates stability of factors accounting for IR hoarding for 3 sub periods, pre (1996-2006), during (2007-2009) and post (2010-2012) GFC.
  - Group explanatory variables in 3 categories: Traditional macro, financial, new.
  - 'New' conditioning variables not studied in detail before GFC (SWFs, macro-prudential policies, access to bilateral swap lines, gross saving, ODI, exports composition)
    - SWF may reduce exclusivity of IR as the main financial buffer.
    - Prudential regulations may reduce hot money inflows & need for IR hoarding.
    - Swap-lines may mitigate need for IR during volatile periods.

- Panel fixed effects regressions, supplemented with PCA, for developing (73) & developed (22) countries
  - Evaluates stability of factors accounting for IR hoarding for 3 sub periods, pre (1996-2006), during (2007-2009) and post (2010-2012) GFC.
  - Group explanatory variables in 3 categories: Traditional macro, financial, new.
  - 'New' conditioning variables not studied in detail before GFC (SWFs, macro-prudential policies, access to bilateral swap lines, gross saving, ODI, exports composition)
    - SWF may reduce exclusivity of IR as the main financial buffer.
    - Prudential regulations may reduce hot money inflows & need for IR hoarding.
    - Swap-lines may mitigate need for IR during volatile periods.
- Examines adequacy of IR holdings; over or under-hoarding in 2010-2012.
- Whether and to what extent countries under-hoarding IR were susceptible to currency depreciation in 2012-13.



- Factors determining IR hoarding evolve with global developments.

- Factors determining IR hoarding evolve with global developments.
  - Pre-GFC: Saving is associated with higher IR & ODI diverts assets away from IR account.

- Factors determining IR hoarding evolve with global developments.
  - Pre-GFC: Saving is associated with higher IR & ODI diverts assets away from IR account.
  - During GFC: Previous variables insignificant or opposite signs.

- Factors determining IR hoarding evolve with global developments.
  - Pre-GFC: Saving is associated with higher IR & ODI diverts assets away from IR account.
  - During GFC: Previous variables insignificant or opposite signs.
  - Post GFC: 'New' factors dominate (swap lines, savings, ODI, SWF)

- Factors determining IR hoarding evolve with global developments.
  - Pre-GFC: Saving is associated with higher IR & ODI diverts assets away from IR account.
  - During GFC: Previous variables insignificant or opposite signs.
  - Post GFC: 'New' factors dominate (swap lines, savings, ODI, SWF)
- Developed countries: different motivations for IR holding

- Factors determining IR hoarding evolve with global developments.
  - Pre-GFC: Saving is associated with higher IR & ODI diverts assets away from IR account.
  - During GFC: Previous variables insignificant or opposite signs.
  - Post GFC: 'New' factors dominate (swap lines, savings, ODI, SWF)
- Developed countries: different motivations for IR holding
- Brazil, India, Indonesia, SAfrica, Turkey: under-hoarding during 2010-2012
- Negative correlation between currency depreciation & over-hoarding of IR in 2012-13.

## I. 'New' variables

### SWFs:

- Out of 73 developing countries, barring oil producers, how many with SWFs?
  - Once IR reaches a level high enough to cover self-insurance needs, countries with high saving rates may opt for SWFs.
  - Estimate a threshold effect in IR; interact SWF dummy with savings rate?
- Instead of SWF dummy, why not use the actual assets in the funds?

## I. 'New' variables

### SWF:

- Out of 73 developing countries, barring oil producers, how many with SWFs?
  - Once IR reaches a level high enough to cover self-insurance needs, countries with high saving rates may opt for SWFs.
  - Estimate a threshold effect in IR; interact SWF dummy with savings rate?
- Instead of SWF dummy, why not use the actual assets in the funds?

### Swap Lines:

- How many developing countries had access to bilateral swap lines (Brazil, Mexico, Korea, Philippines)
- Only a certain 'type' of countries (high reserves) were eligible for swap lines – possible endogeneity?
- Interact swap lines with IR opportunity cost to check if acting as substitutes?



## I. 'New' variables

### SWF:

- Out of 73 developing countries, barring oil producers, how many with SWFs?
  - Once IR reaches a level high enough to cover self-insurance needs, countries with high saving rates may opt for SWFs.
  - Estimate a threshold effect in IR; interact SWF dummy with savings rate?
- Instead of SWF dummy, why not use the actual assets in the funds?

### Swap Lines:

- How many developing countries had access to bilateral swap lines? (Brazil, Mexico, Korea, Philippines)
- Only a certain 'type' of countries (high reserves) were eligible for swap lines – possible endogeneity?
- Interact swap lines with IR opportunity cost to check if acting as substitutes?

### ODI:

- Any evidence from literature establishing negative or positive link between ODI and IR?

## II. Results for developing countries

- Post-GFC: 'New' factors dominate results

## II. Results for developing countries

- Post-GFC: 'New' factors dominate results
  - Commodity volatility, macro-prudential measures, export composition: Not significant.
  - SWF: Different sign for post-GFC and full sample.
  - ODI: Different sign for post-GFC and pre-GFC.

## II. Results for developing countries

- Post-GFC: 'New' factors dominate results
  - Commodity volatility, macro-prudential measures, export composition: Not significant.
  - SWF: Different sign for post-GFC and full sample.
  - ODI: Different sign for post-GFC and pre-GFC.
    - Can understand new variables becoming significant post-GFC but why sign changes?

## II. Results for developing countries

- Post-GFC: 'New' factors dominate results
  - Commodity volatility, macro-prudential measures, export composition: Not significant.
  - SWF: Different sign for post-GFC and full sample.
  - ODI: Different sign for post-GFC and pre-GFC.
    - Can understand new variables becoming significant post-GFC but why sign changes?
    - Is there anything specific about post-GFC period driving these?

## II. Results for developing countries

- Post-GFC: 'New' factors dominate results
  - Commodity volatility, macro-prudential measures, export composition: Not significant.
  - SWF: Different sign for post-GFC and full sample.
  - ODI: Different sign for post-GFC and pre-GFC.
    - Can understand new variables becoming significant post-GFC but why sign changes?
    - Is there anything specific about post-GFC period driving these?
    - Are these results driven by structural changes or by a few countries?

## II. Results for developing countries

- Post-GFC: 'New' factors dominate results
  - Commodity volatility, macro-prudential measures, export composition: Not significant.
  - SWF: Different sign for post-GFC and full sample.
  - ODI: Different sign for post-GFC and pre-GFC.
    - Can understand new variables becoming significant post-GFC but why sign changes?
    - Is there anything specific about post-GFC period driving these?
    - Are these results driven by structural changes or by a few countries?
- Traditional factors-Financial exposure: Different sign for post-GFC and full sample
- During GFC: Higher opportunity cost increases IR: Why so?
- Macro-prudential policies have a positive effect on IR: Counter-intuitive; what are these policies?

### III. General

- No explanation for results of the GFC period (2007-2009): conjectures about market conditions.



### III. General

- No explanation for results of the GFC period (2007-2009): conjectures about market conditions.
  - Instead of simply dividing into sub-periods, maybe more GFC specific such as interact with VIX etc?
- Why not formally test for structural breaks in the IR/GDP series?

### III. General

- No explanation for results of the GFC period (2007-2009): conjectures about market conditions.
  - Instead of simply dividing into sub-periods, maybe more GFC specific such as interact with VIX etc?
- Why not formally test for structural breaks in the IR/GDP series?
- If interested in evolution of determinants, why not look at change in IR/GDP?

### III. General

- No explanation for results of the GFC period (2007-2009): conjectures about market conditions.
  - Instead of simply dividing into sub-periods, maybe more GFC specific such as interact with VIX etc?
- Why not formally test for structural breaks in the IR/GDP series?
- If interested in evolution of determinants, why not look at change in IR/GDP?
- Post-GFC: Too small a sample period of only 3 years (2010-12 model weak even for prediction exercise)

### III. General

- No explanation for results of the GFC period (2007-2009): conjectures about market conditions.
  - Instead of simply dividing into sub-periods, maybe more GFC specific such as interact with VIX etc?
- Why not formally test for structural breaks in the IR/GDP series?
- If interested in evolution of determinants, why not look at change in IR/GDP?
- Post-GFC: Too small a sample period of only 3 years (2010-12 model weak even for prediction exercise)
- What about countries without SWFs and/or swap line access?

### III. General

- No explanation for results of the GFC period (2007-2009): conjectures about market conditions.
  - Instead of simply dividing into sub-periods, maybe more GFC specific such as interact with VIX etc?
- Why not formally test for structural breaks in the IR/GDP series?
- If interested in evolution of determinants, why not look at change in IR/GDP?
- Post-GFC: Too small a sample period of only 3 years (2010-12 model weak even for prediction exercise)
- What about countries without SWFs and/or swap line access?
- Renewed capital inflows in 2010: India, Malaysia, Chile & Colombia allowed currencies to appreciate while Korea & Peru increased IR; shift in Trilemma post GFC towards greater MI, less ERS?

- Interesting and insightful analysis bringing into light some less-discussed factors that might help explain IR patterns.
- Throws light on the dynamic nature of IR accumulation.
- Important policy implication: New factors might mitigate IR hoarding going forward.
- Points towards a possible regime-switch in IR accumulation-future research might test this more formally.

Thank You