

## Discussion of

“Monetary Policy Spillovers and the Trilemma in the New Normal: Periphery Country Sensitivity to Core Country Conditions” (J. Aizenman, M. Chinn, H. Ito)

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Vienna

July 2015

The views expressed in the presentation do not necessarily reflect the views of the Deutsche Bundesbank.

# Motivation and aim of paper

- **Monetary trilemma** (Mundell (1963)): trade-off between monetary independence, exch. rate stability, financial openness.
- Challenged by Rey (2013): International MP transmission via credit growth, bank leverage, capital flows. Countries sensitive to a „global financial cycle“, irrespective of the ER regime.
- This paper re-visits trilemma vs. dilemma.
  - How does MP/financial conditions in center economies (CE) affect MP/financial conditions in other countries? Paper not only considers interest rate linkages but also other financial linkages.
  - Determinants (i.a. role of exchange rate regime, fin. openness)?

## Two-step approach

- (1) Regress non-CEs' short-term interest rates, stock prices, term spreads, REERs on corresponding CEs' variables.

$$R_{it}^F = \alpha_{Fit} + \sum_{g=1}^G \beta_{Fit}^G Z_{it}^G + \sum_{c=1}^C \gamma_{Fit}^C X_{it}^C + \phi_{Fit} Y_{it} + \varepsilon_{it}$$

- (2) Regress coefficient on exchange rate regime, financial openness and other potential determinants.

$$\hat{\gamma}_{Fit}^C = \theta_0 + \theta_1 OMP_{Fit} + \theta_2 MC_{Fit} + \theta_3 LINK_{Fit} + \theta_4 INST_{Fit} + \theta_5 CRISIS_{Fit} + u_{Fit}$$

- Analysis for 100 developed and developing economies over 1990-2013, 3y or 5y non-overlapping windows

## Selection of (many) results

- CEs' financial variables were dominant factors for non-CEs' financial variables (shares of countries with signif. coeffs.).
- Chinese financial developments less important.
- Direct trade, financial development, CA balances, national debt matter for linkages.
- Open macro policies (exchange rate regime, fin. openness) matter indirectly when interacted with other variables. →  
„The requiem for the trilemma need not yet be written.“

# Assessment of paper/overview of comments

- Very important topic
- Very careful and broad analysis
  - 100 countries, 4 financial variables, impressive number of potential determinants, role of China, ...
- Comments
  - (I) Comments on the two-step approach
  - (II) Alternative methods and some additional results on international financial cycles
  - (III) Further comments

# I Comment on methodology

- Advantage: simple, easy to understand
- What would be good to have/questions:
  - Step 1:
    - **Dynamics** (i.a. transmission via trade takes time)
    - **Interaction between various financial variables; between non-center economies**
    - **Factors capturing comovements beyond observed global factors** (e.g. foreign output)
  - Step 2:
    - **How serious generated regressand problem** (e.g. Feenstra and Hansen (1997))?
    - Can **interaction terms** be included in step 1 instead?

## II Alternative methods

- There exist models which reduce dimensionality and overcome shortcomings in step 1.
- **Global VARs** (Pesaran and coauthors; Georgiadis and Mehl (2015) on the trilemma/dilemma debate)
- Factor models and extensions
  - **multi-level factor models** (e.g. Kose et al. (2003), Breitung and Eickmeier (2015)), **multi-level factors models combined with VAR analysis** (Aastveit et al. (forthc.))
  - **TVP factor models** (e.g. Del Negro and Otrok (2008), Eickmeier, Lemke, Marcellino (2015), Abbate et al. (2015))

## II Additional results on international financial cycles

- Breitung and Eickmeier (2015): Application of 3-level (overlapping) factor model to large dataset between 1995 and 2011
  - Latent global, regional, variable-type specific factors
  - Interaction btw. macro and financial variables of 24 AEs and EMEs
  - Includes int. rates, asset prices, credit, money, stock market vola
- Here I show first variance decomposition from model with
  - 1 global (G), 1 regional (EME/AE) (F), 1 variable-type-specific (macro/financial) (H) factor for each variable.
  - Results qualitatively similar for more factors

## II Additional results on international financial cycles cont.

- Average variance shares for all/groups of variables in %

	G	F	H	u
All variables	14	13	17	56
Advanced countries	10	12	20	58
Emerging market economies	18	14	13	54
All macro	11	10	26	53
All financial	17	15	10	58
All interest rates	33	17	9	41
All stock prices	11	11	38	40
All house prices	9	12	4	75
All credit	17	16	11	56

## II Additional results on international financial cycles cont.

- Average variance shares for all/groups of variables in %

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- Strong international comovement of financial variables (consistent with ACI), similar as for macro variables, largest for interest rates and stock prices

## II Additional results on international financial cycles cont.

- Average variance shares for all/groups of variables in %

	G	F	H	u
All variables	14	13	17	56
Advanced countries	10	12	20	58
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- Global factors similarly important for AEs and EMEs → strong links between non-CEs and CEs (consistent with ACI)

## II Additional results on international financial cycles cont.

- Average variance shares for all/groups of variables in %

	G	F	H	u
All variables	14	13	17	56
Advanced countries	10	12	20	58
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- Macro and fin. variables share common factors. Fin. factors independent from macro factors matter as well. (consistent with ACI) → may want to consider global macro influences

## II Additional results on international financial cycles cont.

- Average variance shares for all/groups of variables in %

	G	F	H	u
All variables	14	13	17	56
Advanced countries	10	12	20	58
Emerging market economies	18	14	13	54
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- Regional factors matter.
- → important to allow for links between non-CEs

## II Additional results on int. fin. cycles cont.

### Model with financial factor

	G	F	H	u
All variables	14	13	17	56
All interest rates	33	17	9	41
All stock prices	11	11	38	40
All house prices	9	12	4	75
All credit	17	16	11	56

### Model with int. rate, house price, stock price, credit etc. factors

All variables	17	4	20	59
All interest rates	7	2	40	50
All stock prices	32	1	34	33
All house prices	25	2	31	41
All credit	16	8	13	63

- Shares expl. by fin. factors larger for some fin. variables.  
But fit not larger with more disaggregated financial factors.
- → important to carefully select model and perhaps account for interaction between different financial variables

## II Additional results on international financial cycles cont.

- To sum up
  - Consistent with ACI
    - Strong comovement of fin. variables, as for macro variables.
    - Global factors similarly important for AEs and EMEs → strong link between peripheral and CE cycles.
    - Macro and financial variables share common factors, but financial factors indpt from macro factors matter as well → perhaps consider global macro influences as well
  - But
    - Regional factors matter. → important to allow for links between peripheral countries
    - Results may change when interaction of different types of financial variables allowed for.

## II Additional results on international financial cycles cont.

- Comparison difficult
  - ACI focus on shares of countries with (joint) statistical significance of CEs' factors. However, economic significance important as well.
    - Why focus on significance levels of 10% or 20%?
    - How do you deal with insignificant coefficients in step 1?
  - Factors estimated from our model orthogonal, variance can be decomposed (has also been an issue in Forbes and Chinn (2004)).

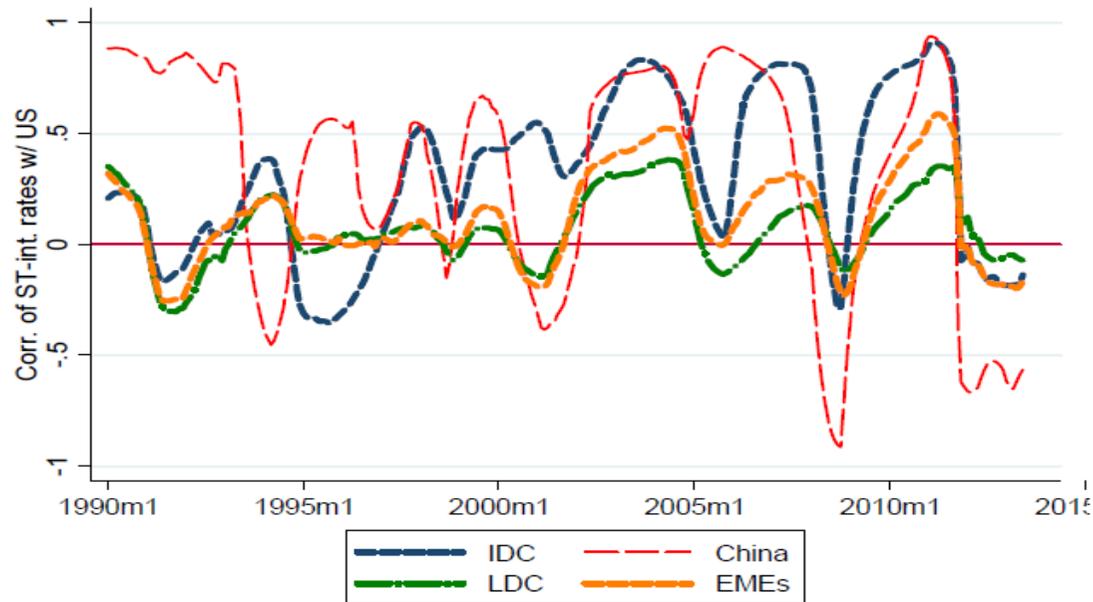
### III Further comments

- #1 You may want to add financial quantities (e.g. credit, capital flows) to your analysis.
  - e.g. Rey (2013), Eickmeier, Gambacorta and Hofmann (2014), Cetorelli and Goldberg (2011), Goldberg (2013)
  - Data probably available for fewer countries.
  - On the other hand, you have already many results and may want to focus more.
- #2 Is endogeneity of  $Y(it)$  in step 1 an issue?
- #3 You find that China's MP and fin. conditions barely matter. Various MP instruments in China (incl. money supply, bank lending, see, e.g., Fernald et al. (2014))

### III Further comments cont.

- #4 (Unconditional) correlations between financial variables fluctuate strongly over time.

Figure 1: Correlations of the Short-Term Interest Rates with the United States



- Is this also the case for conditional correlations (from step 1)? If yes, it is appropriate to rely on 3y and 5y windows?
  - Plots of dependent variable and regressors in step 2.

# Summary

- Very topical paper, with careful analysis, interesting results
- Are results stable with more sophisticated modelling approach?
- Focus on economic importance of CEs' financial conditions rather than on statistical significance.
- Perhaps add financial quantities (or focus the paper more).

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