# Discussion on "Value-Added Exchange Rates for China: Facts and Implication"

RIETI-IWEP-CESSA Joint-Workshop

December 13-14, 2014 @ Beijing

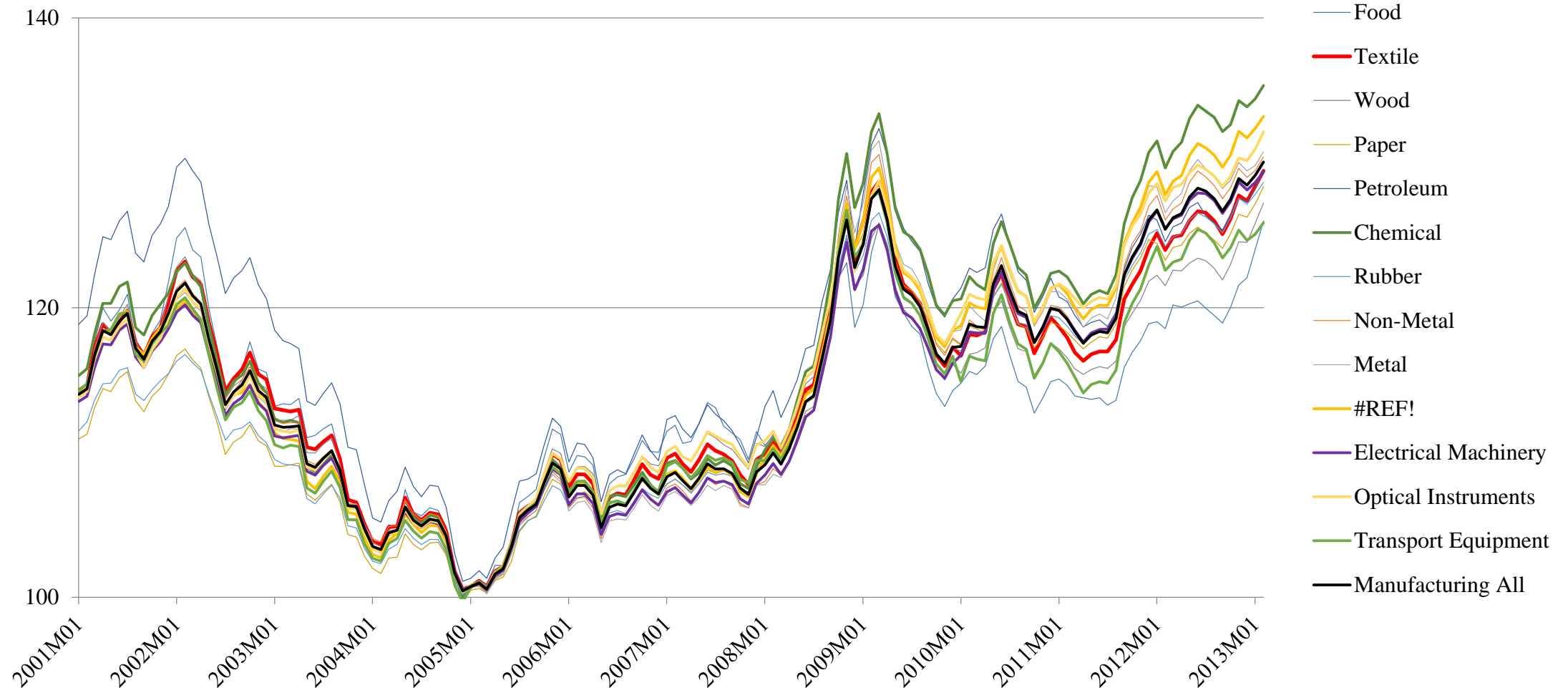Junko Shimizu, Gakushuin University

# Summary of the paper

- This paper calculates value-added EER for RMB and
  - Compare the data by industry level
  - Compare the data between "Tradable" and "Non-tradable"
  - Compare the data between VEER and IMF –EER & BIS-EER.

- As a results, the authors confirmed as follows:
  - Manufacturing industries' VEERs and service industries' VEERs are quiet different in China.
  - The appreciation levels for tradables are much higher than non-tradables.
  - By comparing VEER with conventional EER,  RMB appreciates 7-8% more after adjusting weights by GVC.

- It is the first industry-level VEER calculation for RMB.
  - This paper's observations will be the very good indications when we debate the proper level of RMB exchange rates.

# Back ground to consider Value-added REER

- With the widely spread of Global Value Chains (GVCs) in the world, ***the trade in intermediate goods*** has am important implication to measure the competitiveness by REER.
  - The conventional REER is based on the assumption that goods traded ***are final goods only***.
  - If we consider the intermediate trade, then a change in exchange rate is more complex.  For example, a nominal appreciation makes goods more expensive to export, but also intermediate inputs cheaper to import.
- Therefore, we need to measure the effects of changes on demand for value-added, since demand for value added translates into demand for workers and capital. There are some other related researchs:
  - Value-Added Real Effective Exchange Rates, VAREER (Bems and Johnson, 2012)
  - Integrated Effective Exchange Rate, IEER (Thorbecke, 2011)
  - Goods Real Effective Exchange Rates, GOREER (Bayoumi, Saito, Turunen, 2013)

# Comparison with RIETI's NEER and VEER by industry for China

**China's Nominal Effective Exchange Rate by Industry**



Legend:
- Food
- Textile
- Wood
- Paper
- Petroleum
- Chemical
- Rubber
- Non-Metal
- Metal
- #REF!
- Electrical Machinery
- Optical Instruments
- Transport Equipment
- Manufacturing All

Source: Source: Website of RIETI (Authors' calculation).
Data is available at http://www.rieti.go.jp/users/eeri/en/index.html

# Comparison with RIETI's NEER and VEER by industry

- Basically, VEERs' appreciations are larger than RIETI'S NEERs.
  - The differences might be explained by "value-added".
  - Among industries, the difference in Textile is the largest. It means that the Textile industry is the most value-added industry in China. Is it OK?

Comparing with RIETI NEER by Industry and VEER by Industry for RMB

| | Food | **Textile** | Wood | Paper | Petroleum | Chemical | Rubber | Non-Metal | Metal | General Machinery | Electrical Machinery | Optical Instruments | Transport Equipment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RIETI EER Change from Jan 2001 to April 2014 | 14.4% | **18.0%** | 15.4% | 20.0% | 9.1% | 19.6% | 19.6% | 18.0% | 19.8% | 16.2% | 17.0% | 14.7% | 17.1% |
| VEER Change from Jan 1999 to April 2014 | 31.0% | **49.0%** | 34.0% | 31.0% | 34.0% | 33.0% | 31.0% | 35.0% | 31.0% | 29.0% | 29.0% | 29.0% | 30.0% |

# Comment1. "Tradable" and "Non-tradable"

- How do they calculate the country weights of "Non-Tradable" industries?
  - Table 5 shows Top 5 countries' weights for each industry. For example, in the case of "Education", Top5 countries weights are Euro 36.99%, USA 15.61%, AUS 14.84%, JPN 8.16%, GBR 6.02%. What do these figures stand for?

# Comment 2. VEER and conventional EER weights comparison

- Table 6 shows the differences between Value-added weight and BIS weight.
  - The smallest differences in USA  28.48%(VEER) →22.01% (BIS)    Final trades are large
  - Almost same weights in EURO  22.4% (VEER) and 22.49% (BIS)    Same as conventional trade
  - The largest differences in Asian countries
    - KOREA  5.04%(VEER) →9.11% (BIS)
    - Japan 14.21%(VEER) →18.45% (BIS)    Intermediate trades are large
    - Taiwan 1.67%(VEER) →6.76% (BIS)

- Value-added weights adjusts the final goods trading partner countries more important than GVC partner countries.
  - GVC partner countries exchange rates' large movement might affect the GVC itself. We need to consider such a regional trade linkage.

# Comment 3. Difference between VEER and VREER

- The authors mentioned that this paper focus on EER because they examine "pure" effect of value-added in constructing EER, rather than the price effect.
  - In calculating VEER, only country's weight matters.
  - Bems and Johnson (2012), who calculated 42 countries value-added REER by using GDP deflator, decomposed the gaps into components due to differences between gross and value-added trade weights v.s. differences between CPIs and value-added prices, and they confirmed that the changes in weights do not play a large role.
- Comparing the both graphs, VREER captured the GVC expansion's effect on trade since 2003 in China more clearly.
  - It might be so difficult to capture such a structural change by only country weights but any price effects.

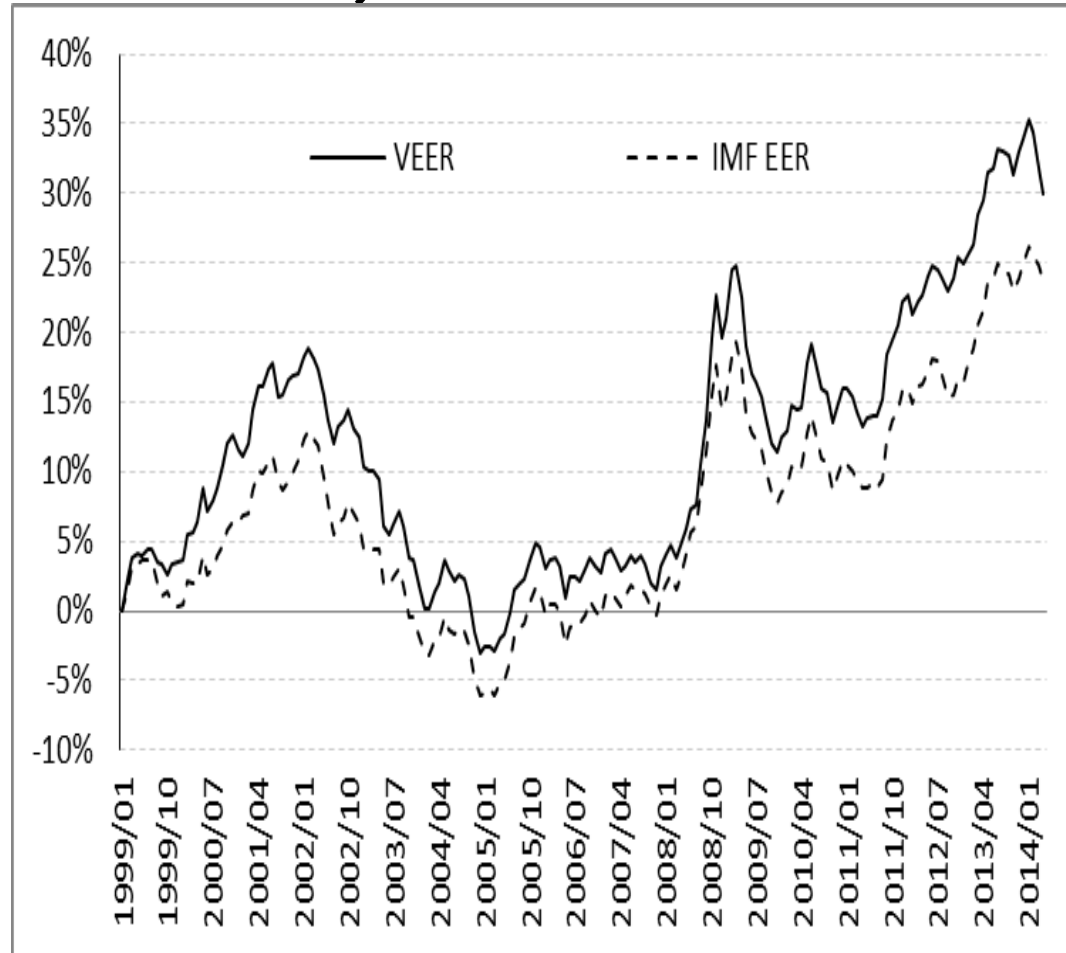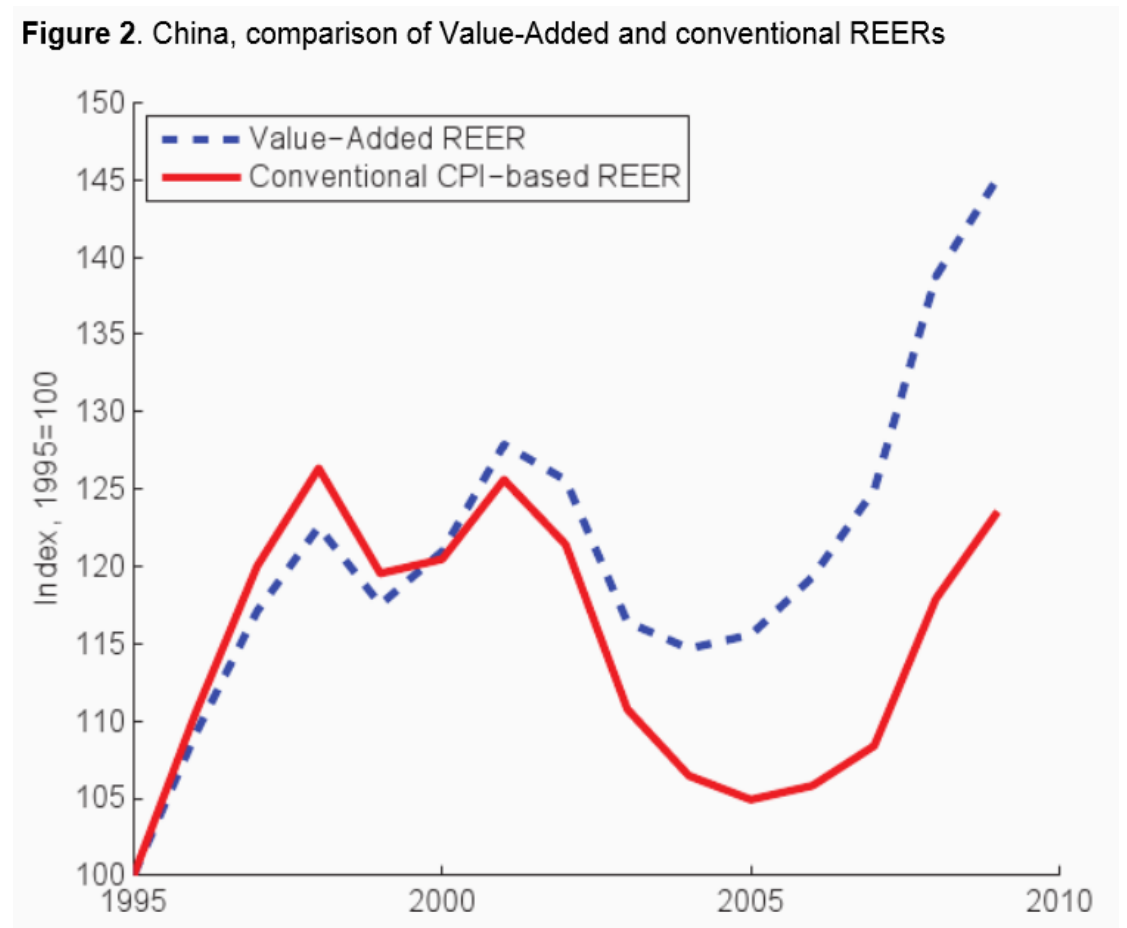# The Difference between Value-added and conventional data (RMB VEER and RMB VREER)



Figure 5 in this paper



**Figure 2**. China, comparison of Value-Added and conventional REERs

**Bems and Johnson** (2012)

# Thank you!