Comments on:
Hwee Kwan CHOW
“Is the RMB Asia’s Dominant Reference Currency? A Reconsideration

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Chow identifies problems with the Frankel-Wei regression with RMB on the RHS

\[ \Delta e_t^i = \gamma + \delta_{USD} \Delta e_t^{USD} + \delta_{EUR} \Delta e_t^{EUR} + \delta_{YEN} \Delta e_t^{YEN} + \delta_{RMB} \Delta e_t^{RMB} + \varepsilon_t \]

- Un-orthogonalized RMB creates a multi-collinearity problem
- Orthogonalized RMB is still subject to a simultaneity problem due to common shocks affecting the movements of the RMB and other Asian currencies

- Comments: Common factors do not create simultaneity problems
- Perhaps, Chow is concerned about the possibility that the RMB movement is influenced by other Asian currencies’ movements (i.e., the RMB basket includes currency i)
Chow uses two sets of VAR models for each Asian currency

\[ \Delta e_t = \beta_0 + \sum_{k=1}^{p} \beta_k(L) \Delta e_{t-k} + \varepsilon_t \]

where \( \beta_k(L) \) is a \( 4 \times 4 \) matrix of lag polynomials

\[ (1): \quad \Delta e_t = \left( \Delta e_\text{us}_{rmb,t}, \Delta e_\text{eur}_{rmb,t}, \Delta e_\text{jpy}_{rmb,t}, \Delta e_\text{i}_{rmb,t} \right) \]

\[ (2): \quad \Delta e_t = \left( \Delta e_{rmb,usd,t}, \Delta e_{eur,usd,t}, \Delta e_{jpy,usd,t}, \Delta e_{i,usd,t} \right) \]
Chow obtains impulse responses of currency $i$ to a shock to the US dollar and a shock to the RMB exchange rate

- Obtain impulse responses of $\Delta e_{\text{usd}_t^rmb}$ to a shock to $\Delta e_{\text{usd}_t^rmb}$ in the VAR equation under (1)
- Also obtain impulse responses of $\Delta e_{\text{i}_t^rmb}$ to a shock to $\Delta e_{\text{usd}_t^rmb}$ in the VAR equation under (2)
- Chow finds that a US dollar shock had a significant impact on Asian currencies before the GFC, but its impact declined after the GFC, and that the a RMB shock had either a stronger or a similar impact on Asian currencies, in comparison to a US dollar impact, in the post-GFC period
- Chow concludes a de facto RMB bloc has not emerged in Asia
- But are the two impulse responses really comparable?
Suggestions (1)

- To address the issue of common shocks, the VAR should include some exogenous global or regional shocks ($z_j = \text{oil prices, VIX, etc}$):

$$\Delta e_t = \beta_0 + \sum_{k=1}^{p} \beta_k(L) \Delta e_{t-k} + \sum_{j=1}^{r} \alpha_j z_j + \varepsilon_t$$

- To verify potential simultaneity problems for the RMB, run the F-W equation for the RMB by including other Asian currencies on the RHS and show that at least some emerging Asian currencies are statistically significant

$$\Delta e_t^{RMB} = \gamma + \delta_{USD} \Delta e_t^{USD} + \delta_{EUR} \Delta e_t^{EUR} + \delta_{YEN} \Delta e_t^{YEN} + \delta_{WON} \Delta e_t^{WON} + \cdots + \delta_{NTD} \Delta e_t^{NTD} + \varepsilon_t$$
Suggestions (2)

• The VAR equation to be estimated may be:

\[ \Delta e_t = \beta_0 + \sum_{k=1}^{p} \beta_k(L) \Delta e_{t-k} + \sum_{j=1}^{r} \alpha_j z_j + \varepsilon_t \]

where \( \beta_k(L) \) is a \( 5 \times 5 \) matrix of lag polynomials,

\[ \Delta e_t = (\Delta e_{us\ sdr\ ,t}, \Delta e_{eur\ sdr\ ,t}, \Delta e_{jpy\ sdr\ ,t}, \Delta e_{rmb\ sdr\ ,t}, \Delta e_{i\ sdr\ ,t}) \]

• Here the RMB variable is either orthogonalized (residuals from a F-W regression using the US dollar, euro and yen) or un-orthogonalized

• Then conduct impulse response analysis for a US dollar shock or a RMB shock

• Also obtain variance decomposition of \( \Delta e_{i\ sdr\ ,t} \) and find the contribution of variation of US dollar shocks and RMB shocks to the variation of \( \Delta e_{i\ sdr\ ,t} \)
Is there a RMB bloc in Asia in the post-GFC period?

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- Chow concludes that the results do not support the claim that a de facto RMB bloc has already emerged in Asia.
- However, it is hard to arrive at this conclusion, given the current results.
- She may get a different result by using the suggested VAR with orthogonalized RMB.
Thank you

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