Comments on
"East Asia Currencies: Moving towards Stable Basket Anchors"

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What Purpose is

- Since around the Asian currency crisis of 1997, East Asian countries have developed their exchange arrangement.
  - Before the Asian currency crisis
  - After the Asian currency crisis
- Some new factors affecting the exchange arrangement
  - Ascending role of the Chinese yuan
  - Global financial crisis of 2007-2008

- Re-examine the status quo of currency arrangement in East Asian area

What Findings are

- After the global financial crisis, the East Asian currencies show a trend of neither move towards fixed nor floating foreign exchange regime, but a currency basket
- The US dollar still plays an important role in the East Asian area
- The Chinese yuan's influence in East Asian area increases a little
- The global financial crisis showed a positive impact on the US dollar and the Euro, but negative influence on the Chinese yuan and the Japanese yen

What Strengths of Xu & Yang's Empirical Analysis are

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- Enormous literature review on advanced studies
- Chinese yuan is thought as an anchor
  - $d \ln(\frac{Y_{i,t}}{CHF_t}) = c + w_{i,1} \times d \ln(\frac{EUR_t}{CHF_t}) + w_{i,2} \times d \ln(\frac{JPY_t}{CHF_t}) + w_{i,3} \times d \ln(\frac{CNY_t}{CHF_t}) + w_{i,4} \times d \ln(\frac{USD_t}{CHF_t}) + \epsilon_{i,t}$
- Analytical methodology
  - Instrumental variable method to avoid multicollinearity
    - $d \ln(\frac{CNY_t}{CHF_t}) = c + \theta_{i,1} \times d \ln(\frac{EUR_t}{CHF_t}) + \theta_{i,2} \times d \ln(\frac{JPY_t}{CHF_t}) + \theta_{i,3} \times d \ln(\frac{USD_t}{CHF_t}) + \omega_{i,t}$
    - $d \ln(\frac{CNY_t}{CHF_t}) = \omega_{i,t}$
  - Linear regression model with time-varying coefficient

Comment 1 (Empirical Procedure)

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- Unit root test$\Rightarrow$Cointegration test$\Rightarrow$Kalman filter
- $d\ln(\frac{Y_{i,t}}{CHF_t})$, $d\ln(\frac{EUR_t}{CHF_t})$, $d\ln(\frac{JPY_t}{CHF_t})$, $d\ln(\frac{CNY_t}{CHF_t})$, $d\ln(\frac{USD_t}{CHF_t})$ $\Rightarrow$ Stationary
- Is "cointegration test" necessary?
- In general, when data series follow a unit root process, it is necessary to identify whether cointegration relationships exist over the long run.
- No cointegration test in advanced studies (Frankel and Wei 1994, Ogawa and Sakane 2006)
- If the cointegration test is necessary, we have to discuss more $\cdots$
    - ► Selection of lag order
    - ► Statistical significance of adjustment and cointegration vectors

Comment 1 (Empirical Procedure)

Selection of Lag Order

- The number of cointegration relationships will change according to lag order.
- It is therefore important to choose an appropriate lag order, in order to identify the number of cointegration relationships.
- What is the criteria of lag order?
  - ▶ A lag order without serial correlation but with cointegration relationships.
  - ▶ Two or more lag orders that fulfill the criteria of selection, other benchmarks based on the information criteria.

Comment 1 (Empirical Procedure)

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Statistical Significance of Adjustment and Cointegration Vectors

- When data series follow unit root process, it is necessary to identify whether cointegration relationships exist over the long run. In this case, a cointegration test can be employed to determine cointegration relationships. The error correction model that is used in the cointegration test is as follows:

$$\Delta X_t = \sum_{k=1}^{p-1} \Gamma_k \Delta X_{t-k} + \Pi X_{t-1} + \varepsilon_t$$

- $\Pi = \alpha \beta^{'}$, α is a matrix in terms of adjustment vectors, $\beta^{'}$ is a matrix in terms of cointegration vectors, X_{t-1} is a $n \times 1$ vector, and $X_{t-1} = (X_{1,t-1}, X_{2,t-1}, \cdots, X_{n,t-1})^{'}$.
- How to identify the statistical significance of adjustment and cointegration vectors?

Comment 1 (Empirical Procedure)

Methodology (Chi-Square Tests)

- In order to determine the characteristics of each data series in the cointegration system, Chi-square tests on the cointegration vector and the adjustment vector are useful. The null hypotheses of Chi-square tests are given as follows:
    - ▸ (a) Any data series do not include in the long-term equilibrium relationships. In other words, although the data series are included in the cointegration system, the test statistics are not statistically significant over the long run.
    - ▸ (b) Any data series that are included in the cointegration system satisfy the property of stationarity, but the property of stationarity does not relate to other cointegration vectors.
    - ▸ (c) Any data series that are included in the cointegration system have the property of weak exogeneity over the long run.

Comment 1 (Empirical Procedure)

Methodology (Chi-Square Tests)

- The additional tests (a) and (c) are useful for identifying a cointegration relationship. Because the number of cointegration relationships varies depending on lag order, there is a possibility of over-identification or under-identification in selecting a model. However, the risk of erroneous identification in model selection can be reduced by testing the relationships of data series over the long run, as well as data series exogeneity.

- The additional test (b) can identify whether error correction mechanisms are based on exogenous factors such as individual effects on error terms.

Comment 2 (Dominant Role of USD)

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- Most of the Asian currencies have increased their weights on the US dollar after the global financial crisis
    - Indonesia, Thailand, Malaysia, the Philippines, Korea, Taiwan ↗
    - Hong Kong and Vietnam⇒ 100%
    - Singapore ↘
- Why did the East Asian countries re-peg the US dollar?
    - One of the answer: Coordination failure
- What is the authors opinion?

Comment 3 (Basket Currencies)

- To stabilize trade balance, the real effective exchange rate must be managed.⇒ Basket currency is useful.
- Since the main trading partners of East Asian countries are USA, EU, Japan, it is important for East Asian countries to manage their exchange rate by reference to a common currency basket.
- However, the intra-regional (within ASEAN+3) trade volume has been over 50% of its total volume to the world.
- How should the East Asian countries tailor to the needs of intra-regional exchange rate stability?