中国社会科学院世界经济与政治研究所
Institute of World Economics and Politics, CASS

East Asia Currencies:

Moving towards Stable Basket Anchors

Qiyuan Xu and Panpan Yang

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A. yuan Bloc? (Subramanian and Kessler , 2013)

$$d \ln \left(\frac{X_t}{CHF_t} \right) = \rho_1 * d \ln(\frac{US\$_t}{CHF_t}) + \rho_2 * d \ln(\frac{RMB_t}{CHF_t}) + \rho_3 * d \ln(\frac{EUR_t}{CHF_t}) + \rho_4 * d \ln(\frac{JPY_t}{CHF_t}) + \alpha + \varepsilon_t \quad (1)$$

Table 2b: Evolution in average magnitude of co-movement coefficients

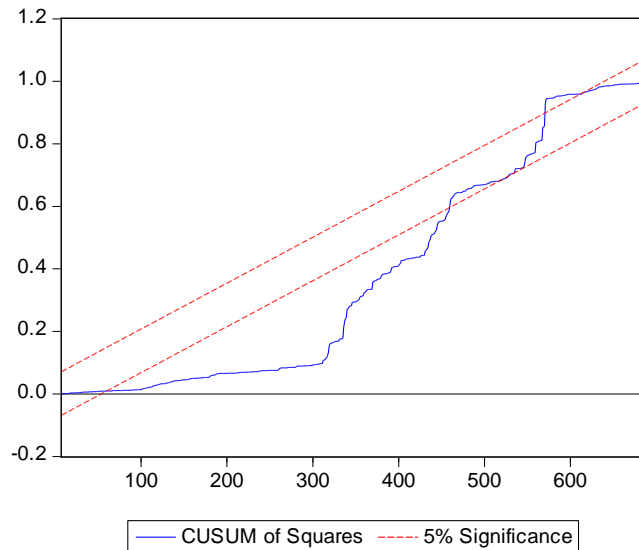| Currency	July 2005–August 2008	July 2010–July 2013	Change
US dollar	0.56	0.43	-0.13
RMB	0.12	0.21	0.09
Euro	0.47	0.38	-0.09
Yen	-0.02	-0.02	0.00

Note: For each currency, the number represents the simple average of the relevant coefficient (ρ_1 for US dollar, ρ_2 for RMB, etc.) estimated from equation (1) for 52 countries in the sample.
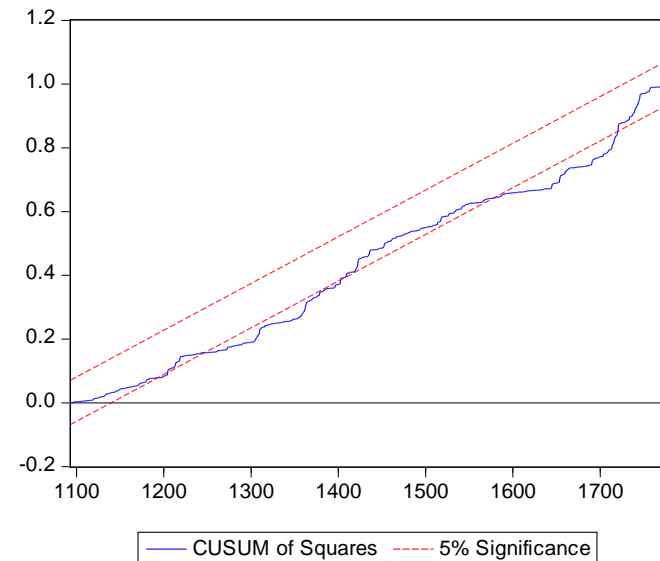*Source:* Authors' calculations.

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Stability test: CUSUM of Squares Test
Thailand Buht

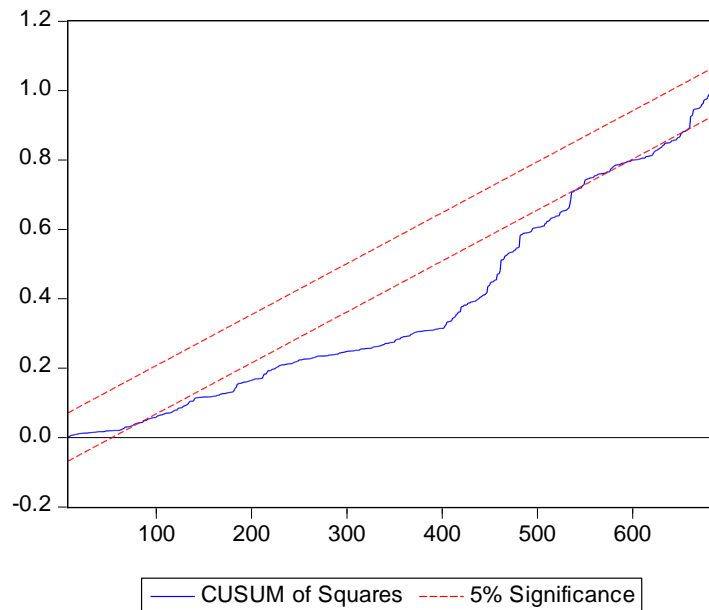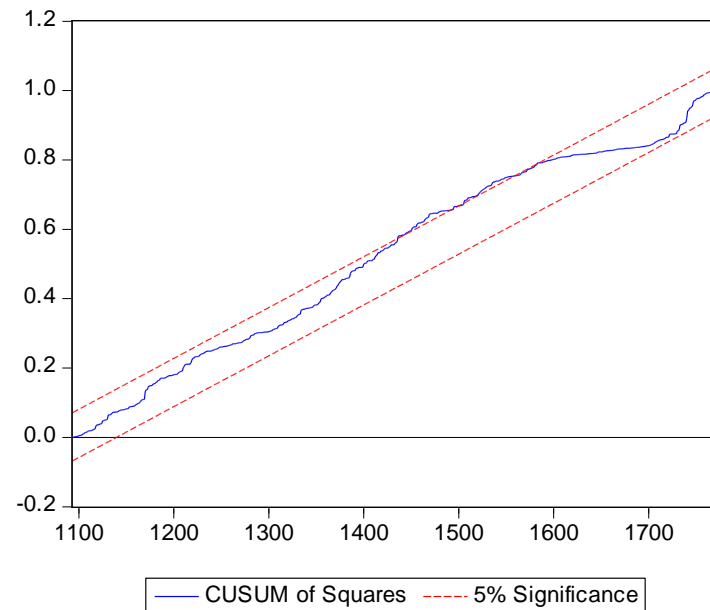### July 2005- Aug. 2008

July 2010- July, 2013

Stability test: CUSUM of Squares Test
Philippines Peso

July 2005- Aug. 2008

July 2010- July, 2013

- July 2005- Aug. 2008
- July 2010- July, 2013

1. This two stage analysis are not reliable.
2. The weights in the baskets are probably time-varying.

• B. Methodology

signal equation:

$$d\ln(\frac{Y_{i,t}}{CHF_t}) = c + w(t)_{i,1} * d\ln(\frac{EUR_t}{CHF_t}) + w(t)_{i,2} * d\ln(\frac{JPY_t}{CHF_t}) + w(t)_{i,3} * d\ln(\frac{CNY_t}{CHF_t}) + w(t)_{i,4} * d\ln(\frac{USD_t}{CHF_t}) + \varepsilon(t)_i$$

$$\varepsilon_t : \quad N(0, \sigma^2)$$

state equation: recursive form

$$w(t)_{i,1} = w(t-1)_{i,1}$$
$$w(t)_{i,2} = w(t-1)_{i,2}$$
$$w(t)_{i,3} = w(t-1)_{i,3}$$
$$w(t)_{i,4} = w(t-1)_{i,4}$$

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C.onclusions

- **4.1 Towards a more stable basket?**

More stable baskets, but not one.

Figure1 The time varying basket composition of the reference currencies for East Asian economies
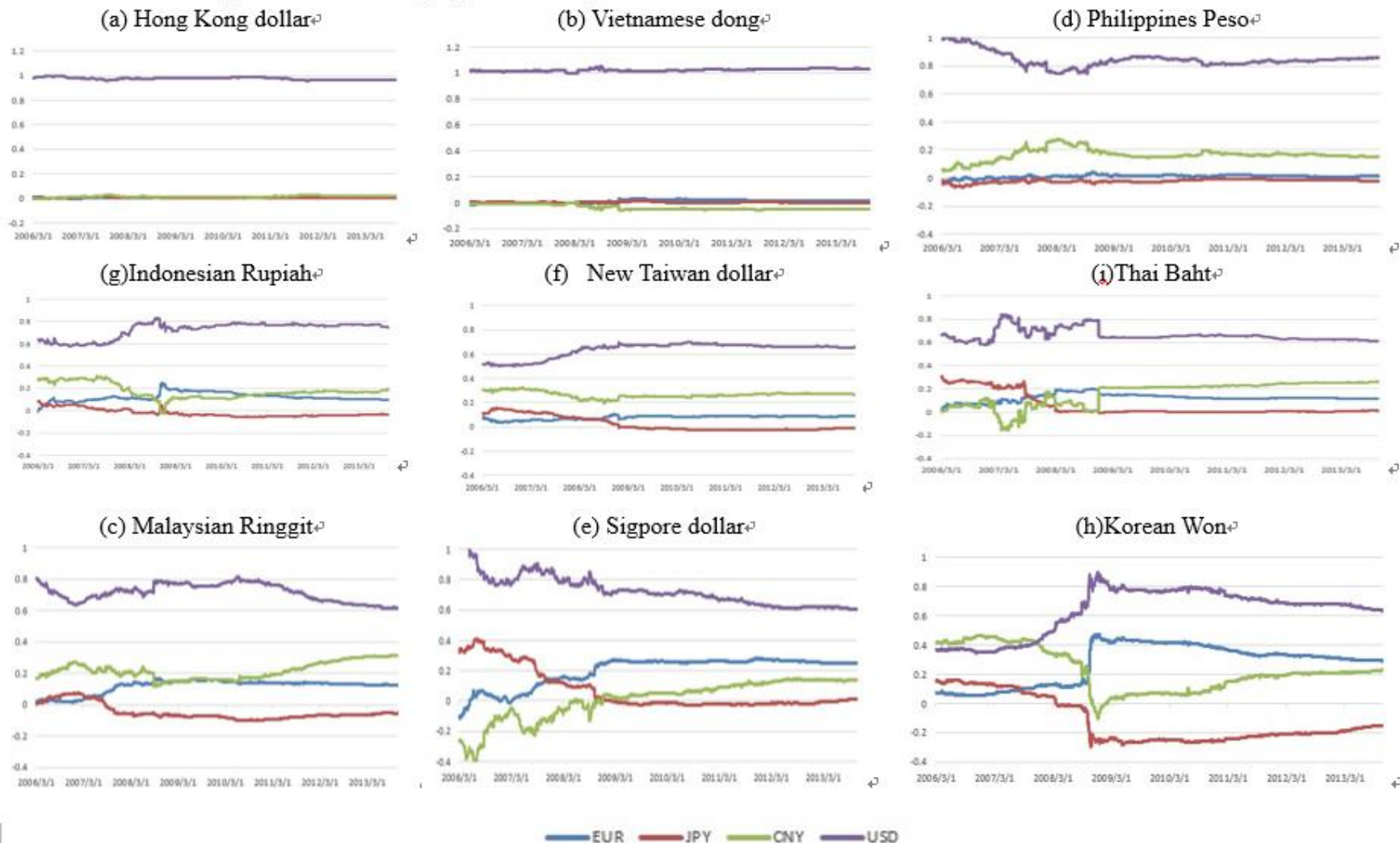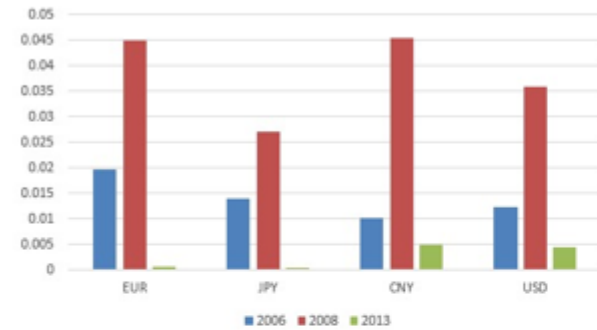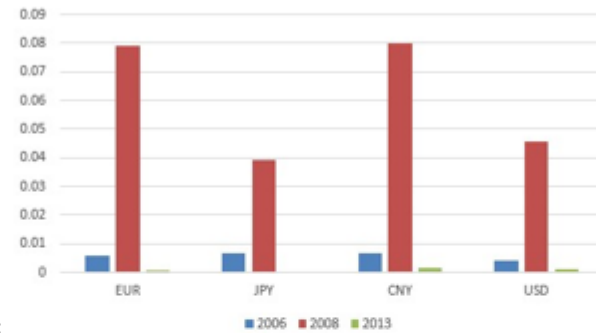
Figure 2 More and more stable anchor composition: the standard deviation for time varying parameter of the reference currency in 2006, 2008 and 2013
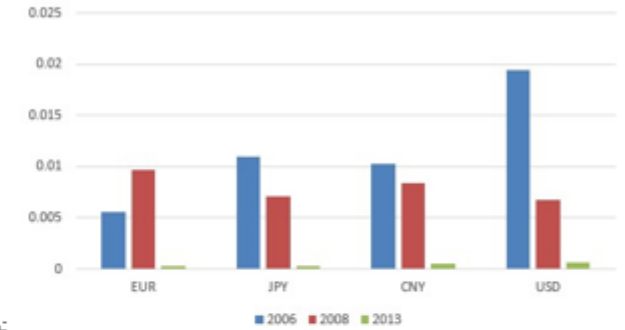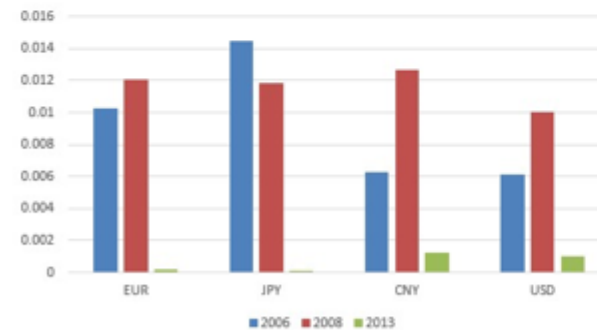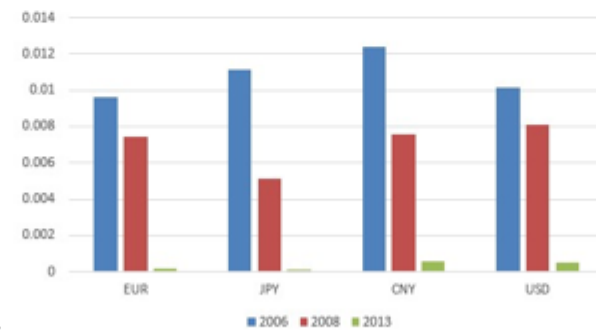
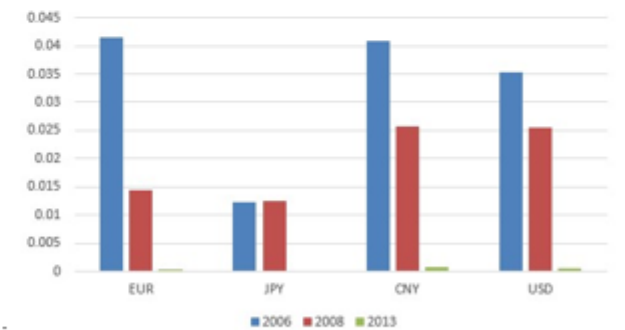(a)Indonesian Rupiah

(b)Korean Won

(c) Malaysian Ringgit

(d) New Taiwan dollar

(e) Philippines Peso
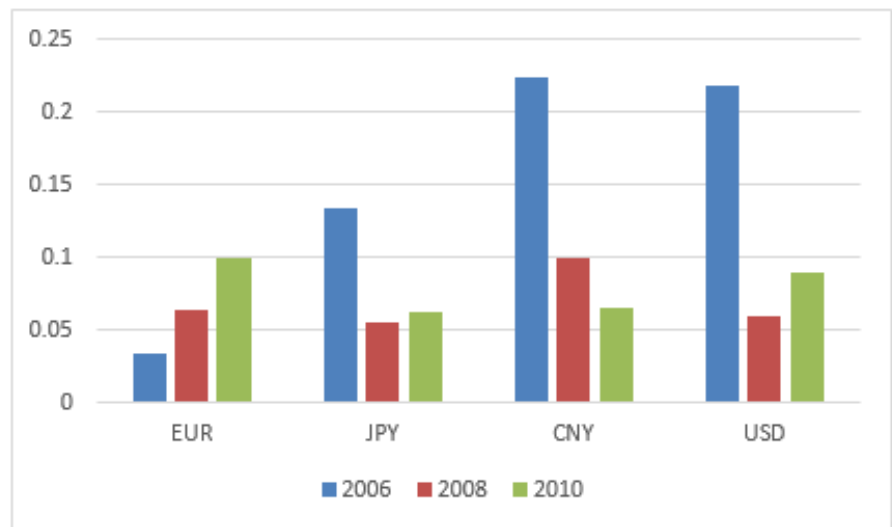
(f) Sigpore dollar

Note: We calculate the daily parameter's standard deviation for these four reference currencies in the year of 2006, 2008 and 2013 respectively. These figures show that the volatility of the reference currencies' shares are large before or during the crisis, while it becomes almost zero in 2013. Hong Kong and Vietnam's currencies are excluded, because of the de facto peg to US dollar.

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Figure 3 The convergence index of the anchor composition in 2006, 2008 and 2013

Note: Hong Kong and Vietnam are excluded, because of the de facto peg to US dollar. For each of the seven Asian currencies, there is a time varying coefficient for euro. We calculate the average of the coefficient time series in the year of 2006, 2008 and 2013respectively.And we can get the stand deviation for the average of euro coefficient across the seven economies. In the same way, we get all the stand deviations for other reference currencies.

- 4.2 the US dollar still plays a dominant role in the basket, and renminbi's influence increases just a little

- 4.3 quite opposite to the conventional wisdom, the global financial crisis shows a positive effect to US dollar and euro and negative effect to renminbi and Yen.

- In 2005, US dollars accounted for 78% of the currency basket.

- But before the crisis this proportion had already declined to 70%.

- Then there was a sharp rise of US dollars proportion during the financial crisis. strengthened for more than 5%.

Thank you!

xuqiy@163.com

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