

---

Comments on  
**“Predicting RMB exchange rate out-of-sample:  
Can offshore markets beat random walk?”**

Makoto Muto(RIETI Research Assistant / Hitotsubashi University)

# Summary

---

## ▶ Motivation

- Deregulation moves forward of RMB transaction in recent year.
- Investors and researchers are interested in RMB trends.
- Therefore, information about the RMB prediction model is useful.

## ▶ Purpose

- The author analyzes the usefulness of the CNH-CNY spread against the RMB prediction.

# Summary

---

## ► Model

- The author thinks the EC model as a benchmark model, including the CNH-CNY spread.

$$\Delta S_{t+k} = \alpha + \beta z_t + \varepsilon_t$$

where  $S_t$  denotes the natural log of nominal RMB exchange against US dollar at time  $t$ ,  $z_t$  denotes the CNH-CNY spread.

- By way of comparison, the author thinks random walk model.

$$S_t = \mu + S_{t-1} + \varepsilon_t$$

where  $\mu$  denotes drift term.

# Summary

---

## ▶ Method

- These models are performed the following analysis.
  - Regression analysis by the in-sample
  - Comparison of the out-of-sample R-squared  
(Analysis that imposed restrictions on the coefficient)  
(Analysis that considering the threshold arbitrage)
  - Dynamics of recursive slope coefficient estimates

# Summary

---

## ▶ Conclusion

- The regression analysis by the in-sample

In the case of short-term prediction, the CNH-CNY spread has affected CNH and CNY.

- Comparison of out-of-sample R-squared

Result of sample period of 2012-2015 and result of sample period of 2011-2015 are different.

But, the analysis that imposed restrictions on the coefficient and the analysis that considering the threshold arbitrage are successful.

- Dynamics of recursive slope coefficient estimates

Sign condition of the coefficient of CNH and CNY is almost correct.

- Therefore, CNH-CNY Spread is useful for prediction in a short period of time.

# Comment

- ▶ The difference between the reaction of CNH and CNY
- It is clearly greater in the reaction of CNH against spread of change.

Table 1: Comparison of slope coefficient

	in-sample(daily)	in-sample(weekly)	Dynamics of recursive slope coefficient estimates
CNY	3.233	2.635	about 0.6
CNH	-7.173	-32.29	about -10

※Created from “Predicting RMB exchange rate out-of-sample: Can offshore markets beat random walk?”

- ① Is this due to the difference of the CNH market and the CNY market environment?
  - ② Or, Is this due to differences in the adjustment speed?
- Or, both? Other than that?

## Comment: case ①

---

- ▶ The difference in the CNH market and the CNY market.
- When CNH and CNY was divergence from equilibrium.
  - CNH market is adjusted by mainly investor's arbitrage.
  - CNY market is adjusted by mainly frequent intervention of the monetary authorities.



- CNY has been to some extent stable. CNH always moves away from equilibrium.
- Therefore, the coefficient of CNH might have become larger.

## Comment: case ①

---

- ▶ Predictive model of CNH and CNY against CNH-CNY spread may be different.
  - CNY is not deviate from equilibrium.
  - CNH deviate from equilibrium.
- ⇓
- CNY is random walk model.
  - CNH is EC model.
  - Possibly, such hypothesis might be considered..



## Comment: case ②

---

▶ Differences in adjustment speed.

- CNY coefficient is small.

When the CNY has deviated from equilibrium, the adjustment is slow. (in comparison with the CNH)

- CNH coefficient is large.

When the CNH has deviated from equilibrium, the adjustment is earlier.



Lag might need to EC model.

- In addition, by analyzing the adjustment coefficient, the difference in the adjustment speed might be seen clearly.