

Building a Simulation Model of the Currency Basket Peg System

JCIS-CIEF

October 7th-11th, 2006 Taiwan

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1

★ Table of Contents ★

Motivation

-Key concepts and backgrounds-

Framework

-Model description-

Experimental results with Simulation

-Result and highlight data-

Summary and Future Plan

★ **Table of Contents** ★

- Motivation**
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Motivation

- 4. Make the Framework for the currency basket peg system
- 4. Make the model of the currency basket peg system on the computer.
- 4. Use the past real data of interests and the exchange rate (Before and after the Asian currency crisis, between 1996 and 1999).

4

Background

- The Asian currency crisis of 1997-1998
 - Crush of Thai Bahts result in economic confusion in whole East Asian area.
 - Excessive dollar peg in East Asia give birth to Asian currency crisis.
- ➔ Rising the needs for the alternative exchange rate system.

5

★ Table of Contents ★

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Framework
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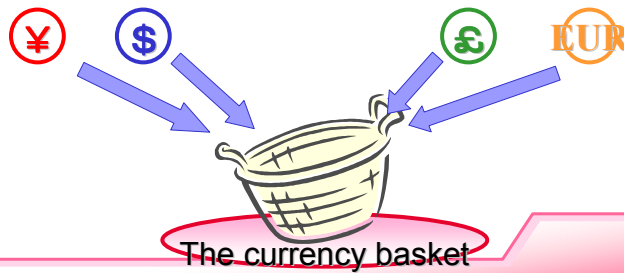
Experimental results with Simulation

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How the currency basket peg system works

4. Defined as an exchange rate system that one country's currency is linked to the currency basket which can be got to average the multiple currency to volume weighted with specific weight.

$$1 \text{ Chiru} = w_1 \times \$ + w_2 \times ¥ + w_3 \times £ + w_4 \times \text{EUR}$$



7

Advantages of the currency basket peg system

The currency basket is made up of multiple currencies so that the system reduces the exchange risk, which is taken by the transnational corporation.



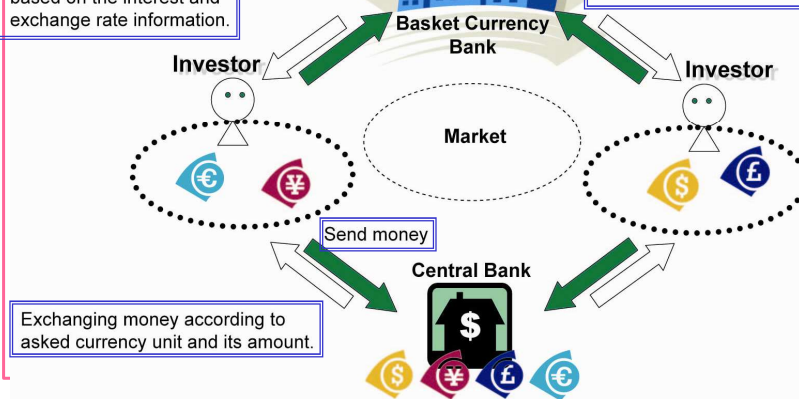
9

Model description

$$1 \text{ Chiru} = w_1 \times \$ + w_2 \times ¥ + w_3 \times £ + w_4 \times €$$

Restructuring properties based on the interest and exchange rate information.

Basket Currency's interest and exchange rate depend on the amount of money occupied properties of the Basket Currency Bank.



Exchanging money according to asked currency unit and its amount.

★ Table of Contents ★

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Framework

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Summary

- ⚡ Our model is a dynamic micro model realizing that characteristics of each agent interact.
 - ① Investor has a view scope (short/long)
 - ② Investor has a risk preference (high/low).
- ⚡ Our model make the currency basket peg system institutionalize independently.
 - It does not necessarily get the optimal weight that the market works. Institutionalizing the currency basket peg system independently, our model keep the optimal weight and the system stable.

16

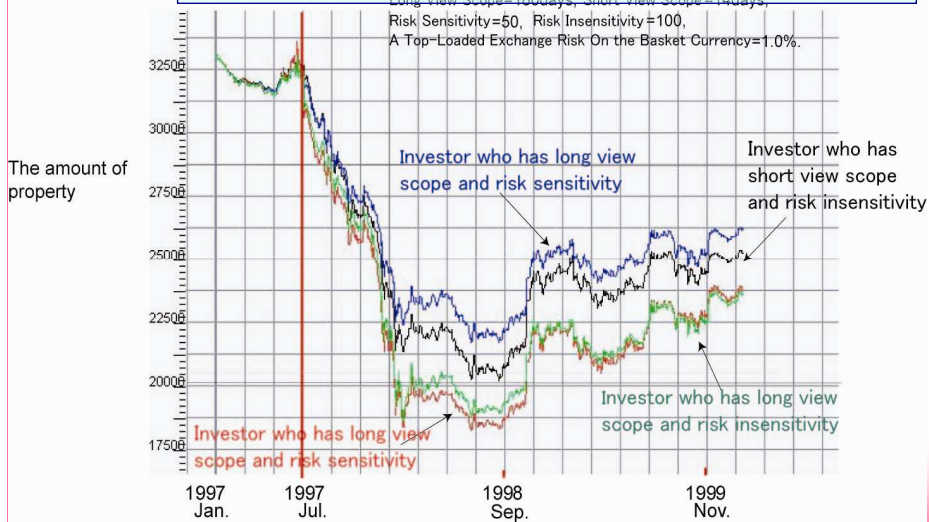
Important points of our experiment

- ⚡ In our model, we use the past real data of each currency all but the basket currency.
- ⚡ Investor Agents must change the rate of the construction of properties.
- ⚡ Looking at the extent to which the Investor's properties lose its weight

17

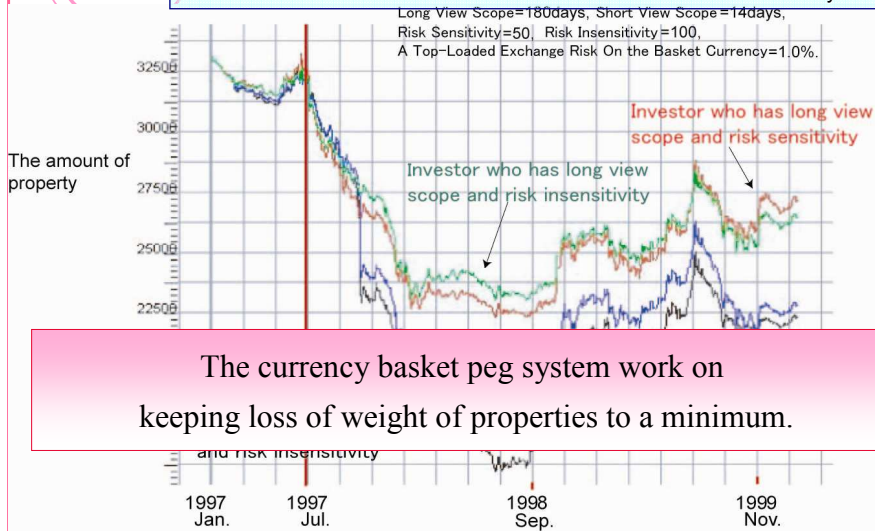
There is no currency basket peg system in the world

Long View Scope=180days, Short View Scope=14days,
Risk Sensitivity=50, Risk Insensitivity=100, A Top-Loaded Exchange Rate
on the Basket Currency=1.0%



There is a currency basket peg system in the world

Long View Scope=180days, Short View Scope=14days,
Risk Sensitivity=50, Risk Insensitivity=100, A Top-Loaded Exchange Rate
on the Basket Currency=1.0%



The currency basket peg system work on keeping loss of weight of properties to a minimum.

★ **Table of Contents** ★

Motivation

Framework

Experimental results with Simulation

Summary and Future Plan

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- 4. Our model enable us to give an instrument to think about the currency basket peg system in terms of the interaction of each agent.
- 4. Incorporate the model of the foreign exchange market (Usami et. al, 2006)
 - Generate the interests and the exchange rate in the system.
- 4. Look for the possibility to contribute to the theoretical study about the currency basket peg system.
 - Identify the basic characteristics of the currency basket peg system
 - Figure the cost when the government construct the system

21

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22