Is East Asia an optimum currency area? - Issues for East Asian Currency Cooperation

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Lessons from the Asian Currency Crisis

- East Asian countries had the following problems:
  (1) Double mismatch of financial institutions' B/S in terms of currencies and maturities
  (2) Officially or *de facto* dollar pegging exchange rate policy
  (3) No regional financial cooperation in East Asia for currency crisis prevention and management

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- Current Regional Currency Cooperation in East Asia
- A Multi-step Process toward East Asian Currency Cooperation
- Possibility of a Common Currency in East Asia
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- Conclusion

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Two initiatives for regional monetary and financial cooperation

- **Chiang Mai Initiative (CMI)** of ASEAN+3 Finance Minister Meeting (ASEAN+3)
  (1) Establish a network of currency swap agreements for currency crisis managements
  (2) Conduct a surveillance process for currency crisis prevention
- **Asian Bond Market Initiative (ABMI)** of ASEAN+3 and **Asian Bond Fund (ABF) Initiative** of EMEAP
  (1) Foster and develop domestic bond markets
  (2) Promote cross-boarder transactions of local currency denominated and regional monetary unit denominated bonds

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Current problem: Coordination failure in exchange rate systems

- A variety of exchange rate systems among East Asian countries (IMF classification)
- Flexible: Japan, Korea, Philippines
- Managed floating: Thailand, Singapore, Indonesia, New ASEAN Countries. China and Malaysia (since July 2005)
- Fixed: China and Malaysia (before July 2005)
- Currency Board (Strictly fixed): Hong Kong and Brunei
- Coordination failure in choosing exchange rate systems and conducting exchange rate policies (Ogawa and Ito (2002))
- Possibility of misalignments of intra-regional exchange rates among East Asian currencies caused by the US$ depreciation under the coordination failure of exchange rate systems

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AMU and AMU Deviation Indicators

- We show deviation measurements of each East Asian currency from an average of East Asian currencies to investigate widening deviation among East Asian currencies.
- Asian Monetary Unit (AMU) as a regional monetary unit for East Asia that means a weighted average of East Asian currencies (ASEAN10+3 (China, Japan, and South Korea) currencies)
- AMU Deviation Indicators that are measured for each of East Asian currency to deviate from the AMU. (Ogawa and Shimizu (2005))
- The weight of each currency in the basket is based on both the countries' respective shares of GDP measured at Purchasing Power Parity (PPP), and trade volumes (the sum of exports and imports) in the total of sampled countries for the relevant country.
- The AMU Deviation Indicators are set to be zero during their benchmark period of two years in 2000 and 2001 when trade imbalances of East Asian countries were the smallest during the recent decade.
- See http://www.rieti.go.jp/users/amu/en/index.html.

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Linkages of East Asian currencies with the US dollar

- Linkages with the US dollar
- The Malaysian ringgit has weakened since 2005 when the monetary authorities of China and Malaysia announced to change their exchange rate system to a managed floating exchange rate system with reference to a currency basket.
- The Chinese yuan has not yet been changed so much in terms of its linkage with the US dollar. It shows that the monetary authority of China keeps stabilizing the Chinese yuan against the US dollar.
- Linkages with a Currency basket
- The monetary authorities of both Singapore and Thailand adopt a currency basket which includes the US dollar, the euro, and the Japanese yen.

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AMU Deviation Indicators

Figure 2. Nominal AMU Deviation Indicators
(benchmark year=2000/2001, basket weight=2003-2005, daily)

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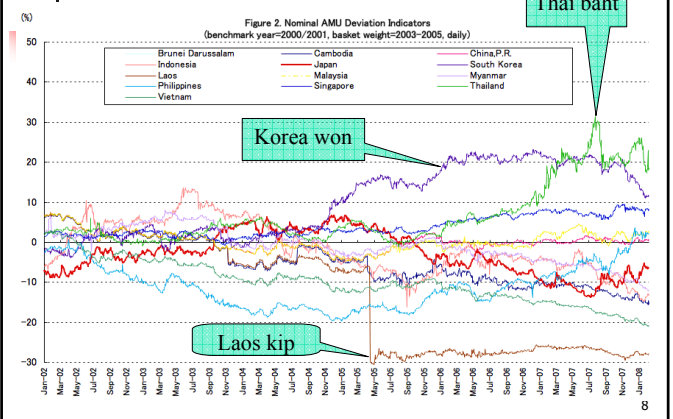
Widening deviation among East Asian Currencies

- Figure 2 => Deviations among the East Asian currencies has been widening since the end of 2004.
- (1) The Korean won has been appreciating against the AMU or a weighted average of East Asian currencies since the end of 2004. It is overvalued by more than 20% compared with the benchmark years.
- (2) The Thai baht has been appreciating very quickly since the end of 2005. It is overvalued by more than 20% compared with the benchmark years.

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Steps toward a common currency basket system in East Asia

- 1st step: policy dialogue about exchange rates and exchange rate policies and surveillance by using AMU and AMU deviation indicator at Economic Review and Policy Dialogue (EPRD) of ASEAN+3
- 2nd step: managed floating exchange rate system with reference of individual G3 currency basket plus surveillance by using AMU deviation indicator
- 3rd step: managed floating exchange rate system with reference of common G3 currency basket plus surveillance by using AMU deviation indicator
- 4th step: "core countries" peg to the AMU plus coordinated monetary policies
- 5th step: introducing bilateral Grid method based on the AMU plus coordinated intervention

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Coordination of exchange rate policy in East Asia

- East Asian countries have strong economic relationships with each other within the intra-region as well as the United States and European countries.
- It is the most desirable for East Asian countries to stabilize both exchange rates among the intra-regional currencies and their exchange rates against outside currencies such as the US$ and the euro.
- -> stabilize exchange rates of East Asian currencies against a **common G3 currency** (US$, euro, and JPY) basket
- It is the second best that they should stabilize intra-regional exchange rate in a situation where regional production networks have been establishing.
- -> stabilize exchange rates of East Asian currency against a **common regional monetary unit**.

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The Role of the Japanese yen

- 1st step: the Japanese yen should be included in the AMU because the AMU is used as a deviation indicator at the surveillance process of EPRD of ASEAN+3
- 2nd &3rd steps: the Japanese yen is one of the G3 currencies that the monetary authorities of ASEAN+2 target in conducting their exchange rate policies.
- 4th & 5th steps: the core countries should include Japan as an anchor country. In this case, the Japanese yen should be a regional key currency in terms of keeping its value appreciating against the US dollar and the euro and conducting disinflationary stance of monetary policy.

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Is East Asia an OCA?

- The ASEAN+3 countries should be an Optimum Currency Area (OCA) in order to succeed in adopting a common exchange rate policy or a common currency policy.
- Ogawa and Kawasaki (2007) investigate whether the ASEAN+3 countries is an OCA while we take into account a fact that a currency basket system should be desirable for these economies who have strong economic relationships with not only the United States but also the rest of world.
- The Generalized-PPP (G-PPP) model is used to investigate an OCA or a common currency policy area while specifying a currency basket as an anchor currency.

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S-VAR: Is the region an OCA?

Bayoumi, Einchengreen and Mauro (2000): 1968-1996							
	JP	KR	CH	IN	PH	ML	SG	TH
JP	1.0							
KR	0.17	1.0						
CH	-	-	-					
IN	0.03	0.11	-	1.0				
PH	0.03	0.07	-	0.16	1.0			
ML	-0.02	0.17	-	0.49	0.05	1.0		
SG	0.02	0.21	-	0.32	0.01	0.40	1.0	
TH	0.32	0.21	-	0.16	0.15	0.02	0.33	1.0

OCA Criteria

- Mundell (1961): Factor mobility
- McKinnon (1963) : Openness of a country's economy
- Bayoumi, Eichengreen, and Mauro (2000), Sato, Zhang, and Mcaleer (2001): Symmetry of aggregate supply shocks between two countries using the Structural VAR approach
- Kawasaki (2000), Ogawa and Kawasaki (2001): G-PPP Approach

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S-VAR: Is the region an OCA?

Sato, Zhang, and Mcaleer (2001): 1980Q1-1997Q1							
	JP	KR	CH	IN	PH	ML	SG	TH
JP	1.0							
KR	-0.03	1.0						
CH	-0.02	-0.18	1.0					
IN	-0.20	0.01	-0.04	1.0				
PH	0.16	0.01	0.05	-0.05	1.0			
ML	-0.03	-0.03	-0.02	0.32	0.02	1.0		
SG	-0.08	-0.08	0.17	0.06	0.12	0.30	1.0	
TH	-0.18	0.15	-0.16	0.16	-0.03	0.06	0.05	1.0

S-VAR: Is the region closer to an OCA?

Sato, Zhang,and Mcaleer (2001): 1980Q1-2000Q3							
	JP	KR	CH	IN	PH	ML	SG	TH
JP	1.0							
KR	0.22	1.0						
CH	-0.03	-0.04	1.0					
IN	0.05	0.45	0.06	1.0				
PH	0.12	0.13	0.04	0.16	1.0			
ML	0.22	0.37	0.04	0.44	0.08	1.0		
SG	-0.03	0.11	0.17	0.18	0.12	0.32	1.0	
TH	0.09	0.30	0.02	0.31	0.04	0.17	0.06	1.0

Structural VAR vs. G-PPP

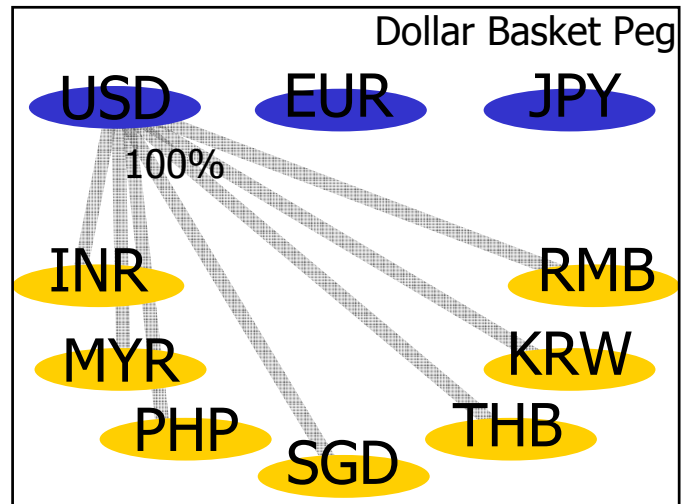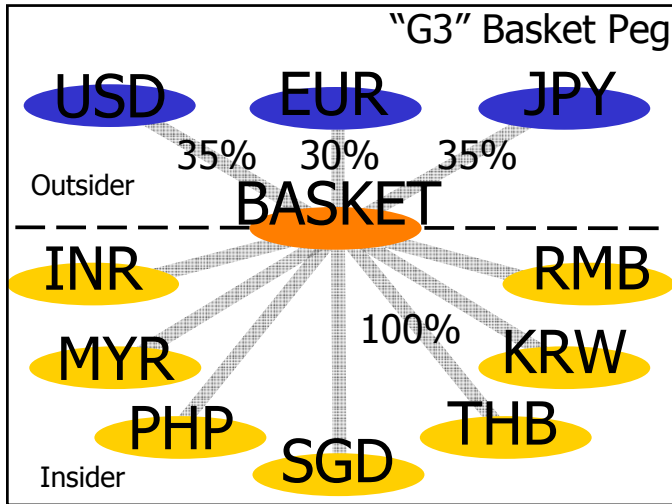|	S-VAR	G-PPP
Point	Symmetry of AS shock between a home and a host country	Stable relationships in the long-run measured by REER among counties.
Features	▪ The symmetry of shocks is no more than a sufficient condition for an OCA.	▪ The long-run equilibrium can be regarded as the outcome of adjustment by the openness of the economy or factor mobility. ▪ Can choose the host currency in the sense of Mundell (1961).

S-VAR: Is the region closer to an OCA?

Our rough calculation: 1998Q1-2007Q3							
	JP	KR	CH	IN	PH	ML	SG	TH
JP	1.0							
KR	0.52	1.0						
CH	0.15	0.18	1.0					
IN	0.31	0.59	0.10	1.0				
PH	0.32	0.48	0.04	0.60	1.0			
ML	0.39	0.68	0.15	0.74	0.69	1.0		
SG	0.30	0.37	0.03	0.26	0.45	0.44	1.0	
TH	0.30	0.59	0.16	0.55	0.36	0.44	0.35	1.0

Dollar Basket Peg

USD   EUR   JPY

100%

INR   RMB

MYR   KRW

PHP   THB

SGD

"G3" Basket Peg

USD EUR JPY
35% 30% 35%
Outsider
BASKET
INR   RMB
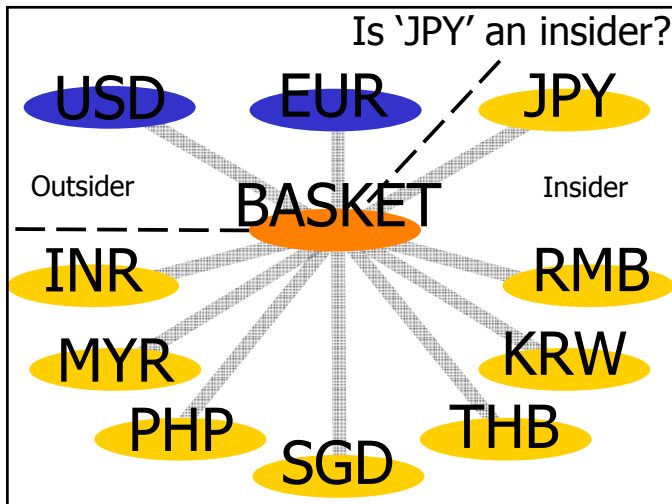100%   KRW
MYR
PHP   THB
SGD
Insider

G-PPP Approach

- Linear combination of real exchange rates in the common currency policy area exhibit stationary property in the long run.

$$\zeta_1 \cdot re_{m+1,1} + \zeta_2 \cdot re_{m+1,2} + \mathsf{L} + \zeta_m \cdot re_{m+1,m} = 0$$

- Currency Area is denominated in terms of an anchor currency.

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Is 'JPY' an insider?

USD EUR JPY
Outsider   Insider
BASKET
INR   RMB
MYR   KRW
PHP   THB
SGD

Empirical analysis

- Possible countries in the region
  - Rank 1: ASEAN5 and Japan, + Korea, + China, and + Korea and China
  - Rank 2: ASEAN5 + Korea, + China, and + Korea and China
- Data
  - Pre crisis period; 1987:1-1997:6
  - Post crisis period; 1998:1-2007:3
  - Calculating the "Prior Euro (not ECU) " and the Euro real exchange rates by GDP weighted Euro-CPIs.

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G-PPP: Is the region an OCA?

1987M1-1997M6							
	JP	KR	CH	IN	PH	ML	SG	TH
ASEAN 5								
+ KR					X	X		
				X				
+ CH								
+ KR	X	X	X		X	X		X
+ CH				X		X		X

Possibilities of Cointegrating relationship among countries

G-PPP: Is the region closer to an OCA?

1998M1-2007M3							
	JP	KR	CH	IN	PH	ML	SG	TH
ASEAN 5	X			X	X	X	X	X
							X	
+ KR	X			X	X	X	X	X
							X	
+ CH	X			X	X	X	X	X
+ KR + CH	X			X		X	X	X

Possibilities of Cointegrating relationship among countries

Empirical results

- In terms of cointegration relationships among the currencies, some East Asian currencies have a long-run stability, which can form a common currency policy area.
- Countries cannot form a common currency policy area with Japan in the "pre-crisis period"
- Selected Asian countries can form a common policy currency area with Japan after the crisis.

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RMU for Coordinated Exchange Rate Policy as the First Step toward a common currency

- It is the most important for East Asian countries to take a first step toward regional monetary coordination in East Asia by introducing a Regional Monetary Unit (RMU) into the region. The ASEAN plus 3 Financial Ministers Meeting has established a research group to study an RMU for coordinated exchange rate policy.
- As a criterion of the new surveillance system, the monetary authorities of ASEAN plus 3 should put forward advance the creation of an RMU and RMU Deviation Indicators for East Asian currencies. These should contribute to the coordination of exchange rate policies in East Asia, thereby enhancing the monetary authorities' surveillance capabilities.

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