



Regional Monetary Cooperation after the Global Financial Crisis

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Contents

- Asymmetric responses of East Asian currencies to the global financial crisis
- Coordination failure in currency policy among East Asian countries
- Effects of the RMB on China and neighboring countries
- Regional monetary cooperation in East Asia



Weighted average of East Asian currencies

- AMU and AMU Deviation Indicators
(see <http://www.rieti.go.jp/users/amu/index.html>)
 - (1) AMU (Asian Monetary Unit): a weighted average of East Asian (ASEAN+3 (China, Japan, and Korea))
 - (2) AMU Deviation Indicator: position of each East Asian currency against the AMU based on benchmark period (2000-2001)
- AMU has been appreciating against a currency basket of the US\$ and the euro since August 2008.
- AMU has been appreciating against the US\$ since May 2009 after it depreciated against the US\$ from April 2008 to April 2009.
- AMU has had twice appreciation against the euro during and after the global financial crisis.



AMU Shares and Weights of each currencies

Table 2. AMU Shares and Weights of East Asian Currencies

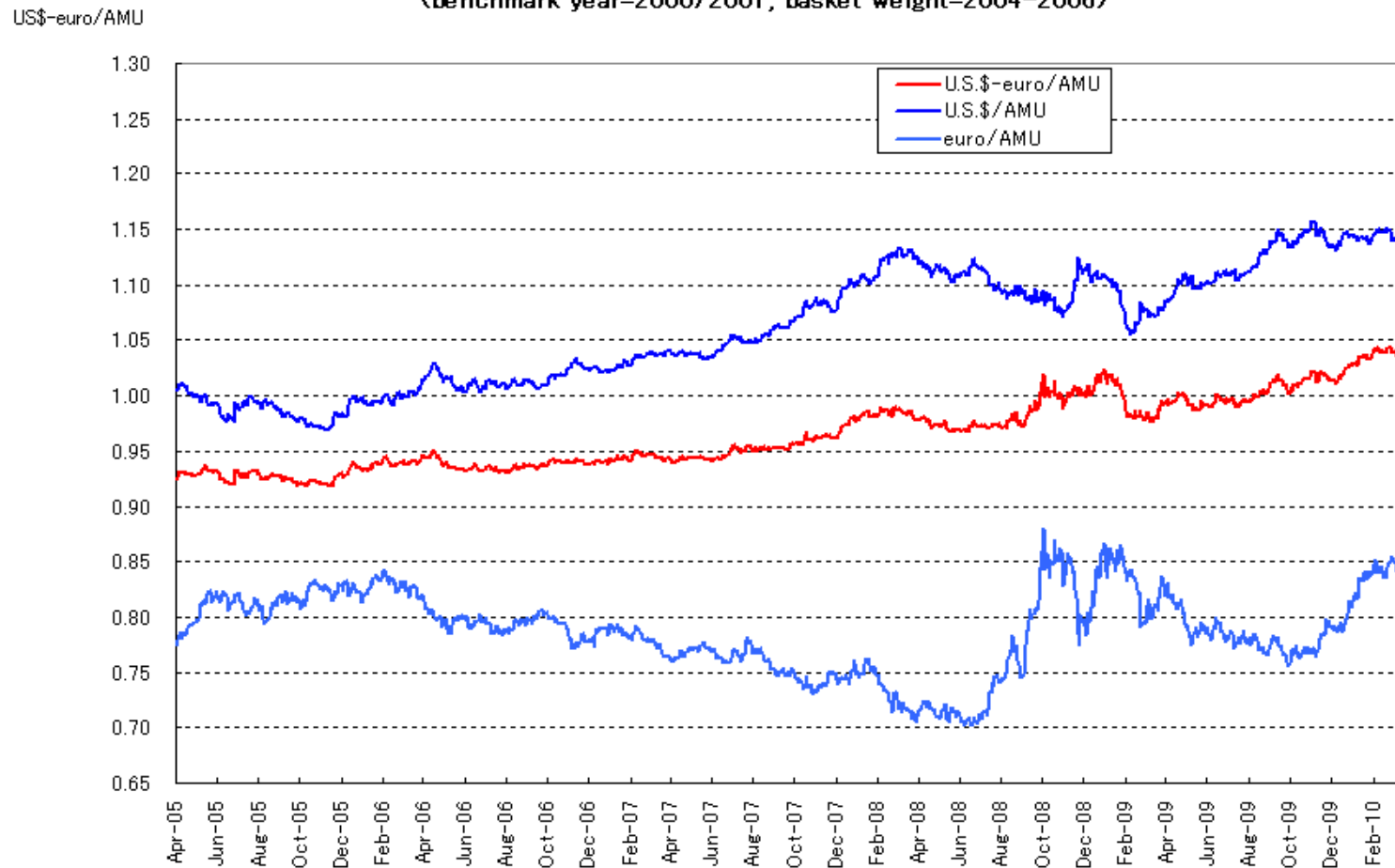
(revised in 9/2008****, benchmark year=2000/2001)

	Trade volume* %	GDP measured at PPP** , %	Arithmetic average shares % (a)	Benchmark exchange rate*** (b)	AMU weights (a)/(b)
Brunei	0.33	0.14	0.24	0.589114	0.0040
Cambodia	0.10	0.16	0.13	0.000270	4.8148
China	25.32	43.18	34.25	0.125109	2.7376
Indonesia	5.10	5.70	5.40	0.000113	477.8761
Japan	24.21	31.19	27.70	0.009065	30.5571
South Korea	12.90	8.30	10.60	0.000859	123.3993
Laos	0.09	0.08	0.09	0.000138	6.2500
Malaysia	7.63	2.42	5.03	0.272534	0.1844
Myanmar	0.32	0.31	0.32	0.159215	0.0198
Philippines	2.53	2.02	2.28	0.021903	1.0387
Singapore	12.79	1.46	7.13	0.589160	0.1209
Thailand	6.54	3.59	5.07	0.024543	2.0637
Vietnam	2.14	1.44	1.79	0.000072	248.6111



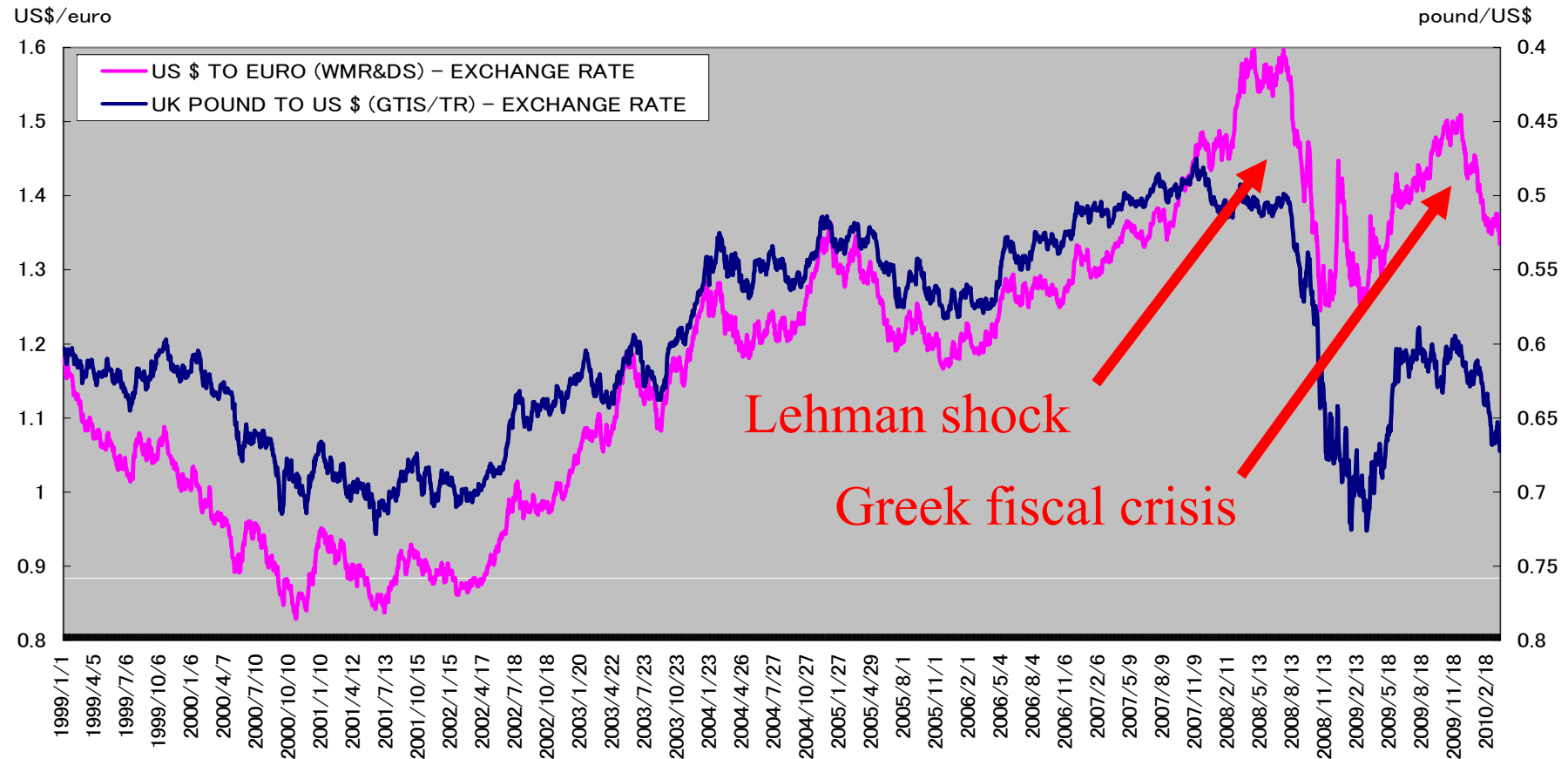
Movements of AMU against US\$ and euro

Figure 1. AMU in terms of the US\$-euro
(benchmark year=2000/2001, basket weight=2004-2006)





Movements of euro and pound against US\$



Data: Datastream
4/30/2010

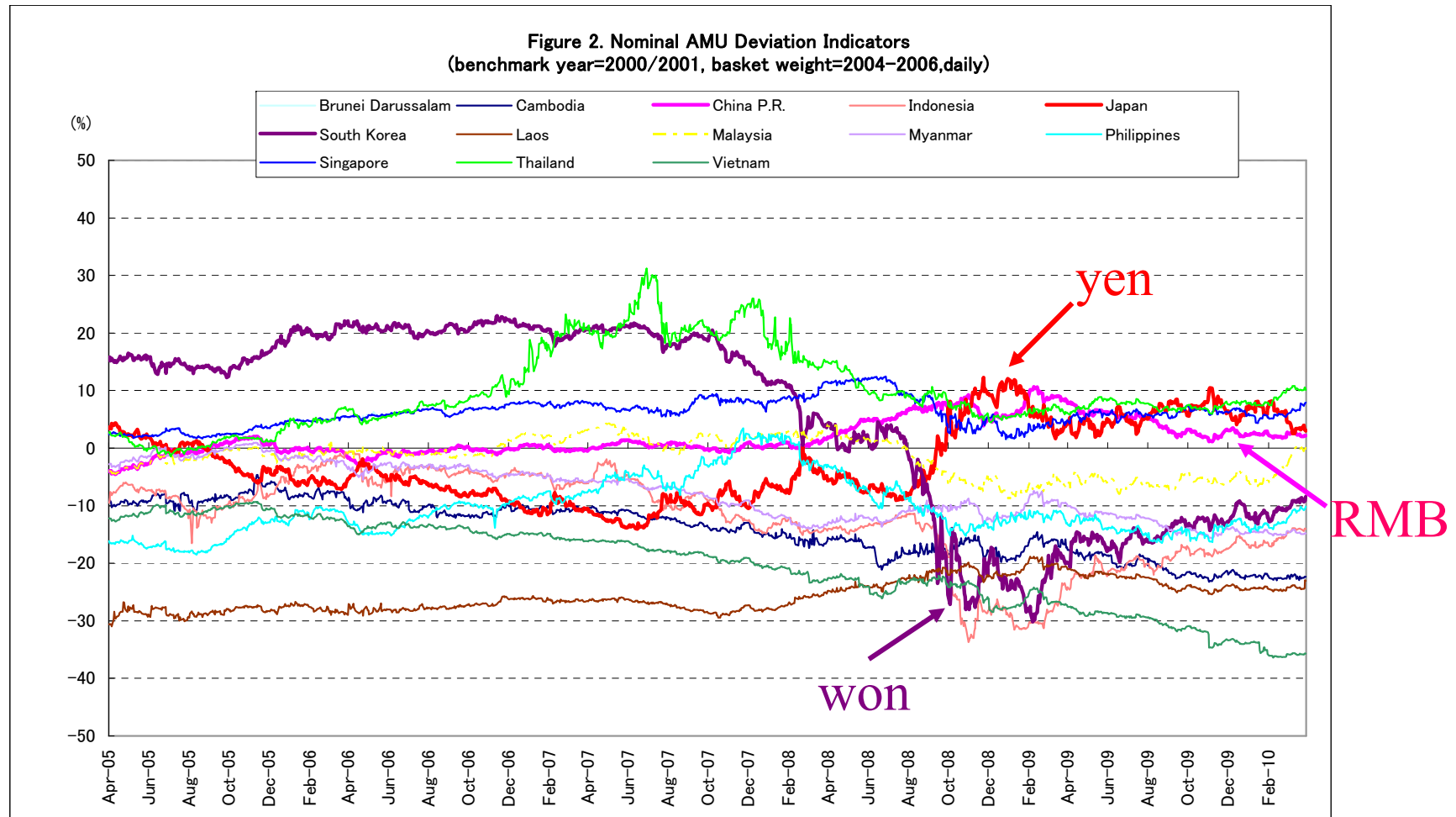


Asymmetric reactions of East Asian currencies

- AMU Deviation Indicators of East Asian currencies shows their asymmetric reactions caused by the global financial crisis.
- The Japanese yen has been overvalued in terms of the AMU since October 2008.
- The Chinese yuan has been depreciating against the AMU since March 2009.
- The Korean won changed from 20% of overvaluation in October 2007 to 30% of undervaluation in March 2009. It depreciated by 50% points in terms of the AMU. It has been appreciating against the AMU since then.



Nominal AMU Deviation Indicators of East Asian currencies

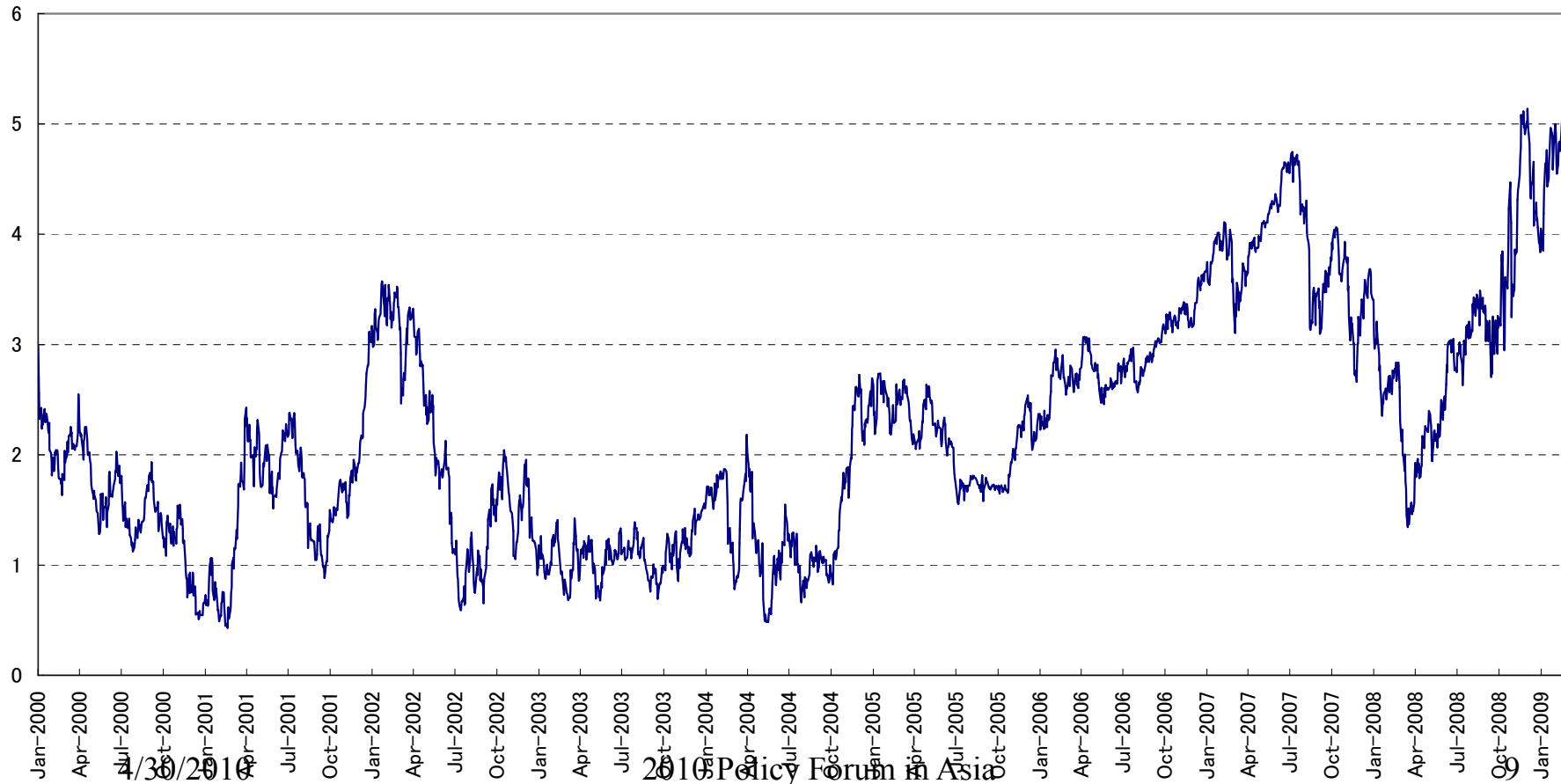




Weighted Average of Nominal AMU Deviation Indicators

Weighted Average of Nominal AMU Deviation Indicators (daily)

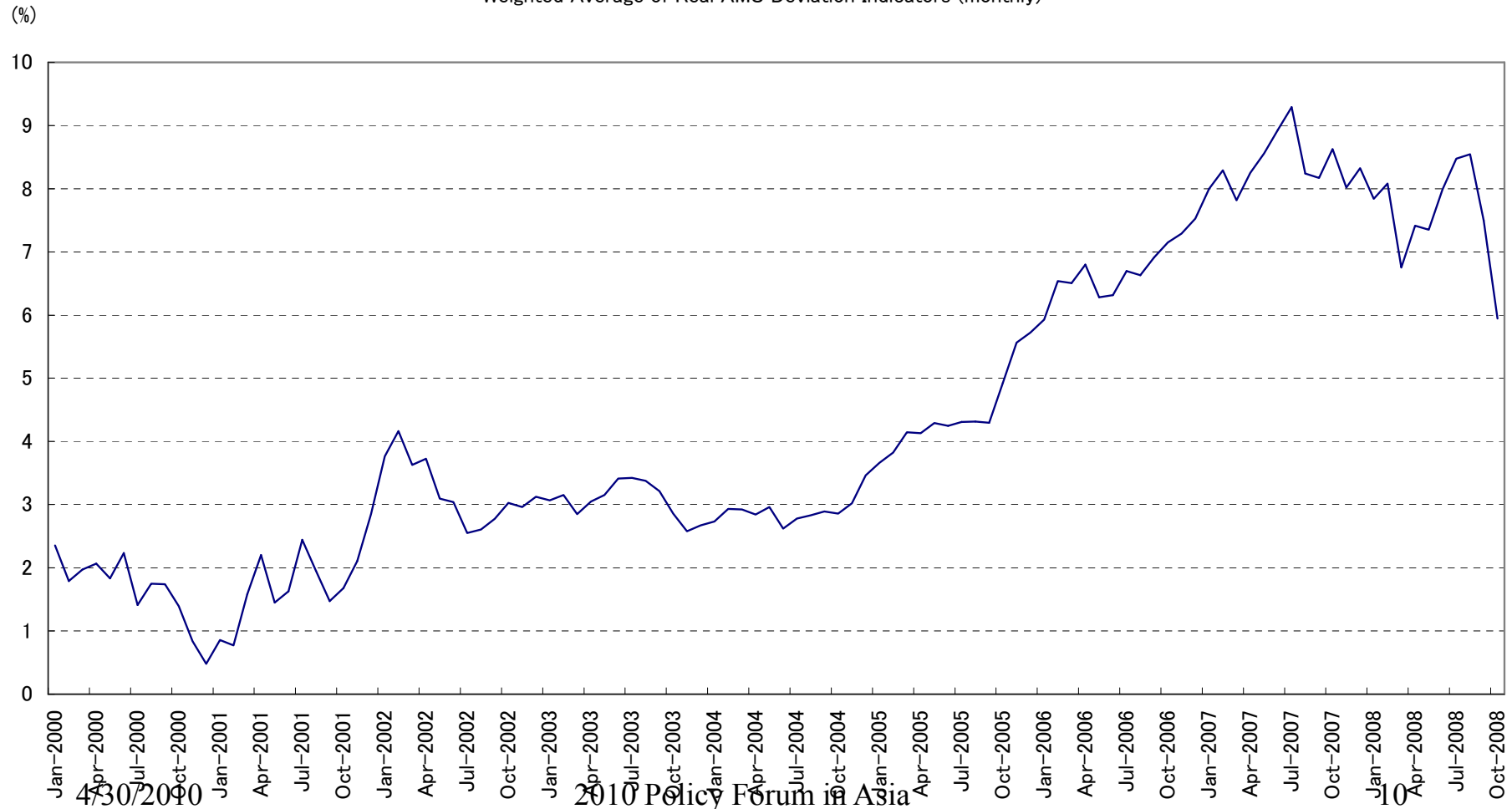
(%)





Weighted Average of Real AMU Deviation Indicators

Weighted Average of Real AMU Deviation Indicators (monthly)



4/30/2010

2010 Policy Forum in Asia

10



Backgrounds of the asymmetric reactions

- Backgrounds of the asymmetric reactions of East Asian currencies
- (1) Different exchange rate system adopted among East Asian countries (“coordination failure” in currency policy (Ogawa and Ito (2002)))

Japan and Korea adopt flexible rate system.

China has fixed RMB to the US\$ since July 2008 although it made announcements of adopting a managed floating rate system with reference to a currency basket.

Some of ASEAN target a currency basket.

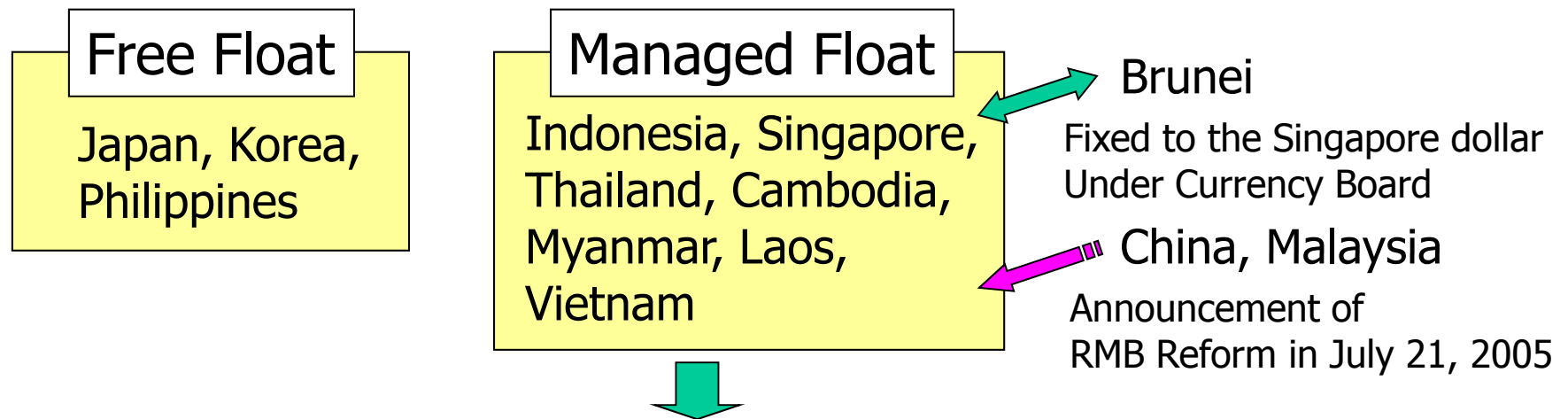
- (2) Active regional capital flows:

US and European financial institutions conducted yen carry trades by borrowing the yen and investing in the Korean won before the global financial crisis. During the crisis they closed the yen carry trade and Korea faced sudden stops and moreover backward flows from Korea.



Exchange rate regimes in East Asia

- Officially announced exchange rate regimes



Officially announced EX rate regimes may differ from actual ones. We employ Frankel and Wei (1994)'s method to investigate actual (*de facto*) regimes employing.



Actual exchange rate regimes in East Asia (Ogawa and Yoshimi (2009))

- Frankel and Wei (1994)'s method

$$\Delta \log e^{HOME/SFR} = a_0 + a_1 \Delta \log e^{USD/SFR} + a_2 \Delta \log e^{EURO/SFR} + a_3 \Delta \log e^{JPY/SFR} + \varepsilon_t$$

$e^{i/SFR}$: EX rate of i in terms of the Swiss franc ($i = HOME, USD, EURO, JPY$).

- Full sample: 1/3/2000-2/27/2009
- Sub-sample
 - Period 1: 1/3/2000-1/13/2005
 - Period 2: 1/14/2005-7/20/2005
 - Period 3: 7/21/2005-8/7/2007
 - Period 4: 8/8/2007-9/14/2008
 - Period 5: 9/15/2008-2/27/2009

China keeps *de facto* dollar peg even after the RMB reform.

Chinese yuan	US dollar	euro	Japanese yen	Adj. R2
Full samples	0.9864 *** (0.0030)	0.0079 (0.0058)	0.0026 (0.0025)	0.988
Period 1	1.0002 *** (0.0002)	-0.0002 (0.0004)	-0.0001 (0.0001)	1.000
Period 2	0.9998 *** (0.0002)	0.0001 (0.0006)	0.0002 (0.0002)	1.000
Period 3	0.9541 *** (0.0121)	0.0125 (0.0313)	0.0279 *** (0.0108)	0.955
Period 4	0.9652 *** (0.0151)	-0.0128 (0.0251)	0.0030 (0.0122)	0.963
Period 5	0.9882 *** (0.0122)	0.0320 * (0.0165)	-0.0099 (0.0086)	0.990
South Korean won	US dollar	euro	Japanese yen	Adj. R2
Full samples	0.7843 *** (0.0293)	0.5669 *** (0.0563)	0.0529 ** (0.0242)	0.434
Period 1	0.8037 *** (0.0287)	-0.0083 (0.0643)	0.2361 *** (0.0246)	0.635
Period 2	0.5128 *** (0.0826)	0.0285 (0.2258)	0.1963 * (0.0878)	0.478
Period 3	0.7430 *** (0.0371)	0.3056 *** (0.0965)	0.0900 *** (0.0332)	0.634
Period 4	0.9392 *** (0.0761)	0.5535 *** (0.1266)	-0.0802 (0.0615)	0.576
Period 5	0.6409 *** (0.2341)	1.1006 *** (0.3161)	-0.1729 (0.1645)	0.200



Effects of the RMB on China, Japan, and Korea (Ogawa and Iwatsubo (2009))

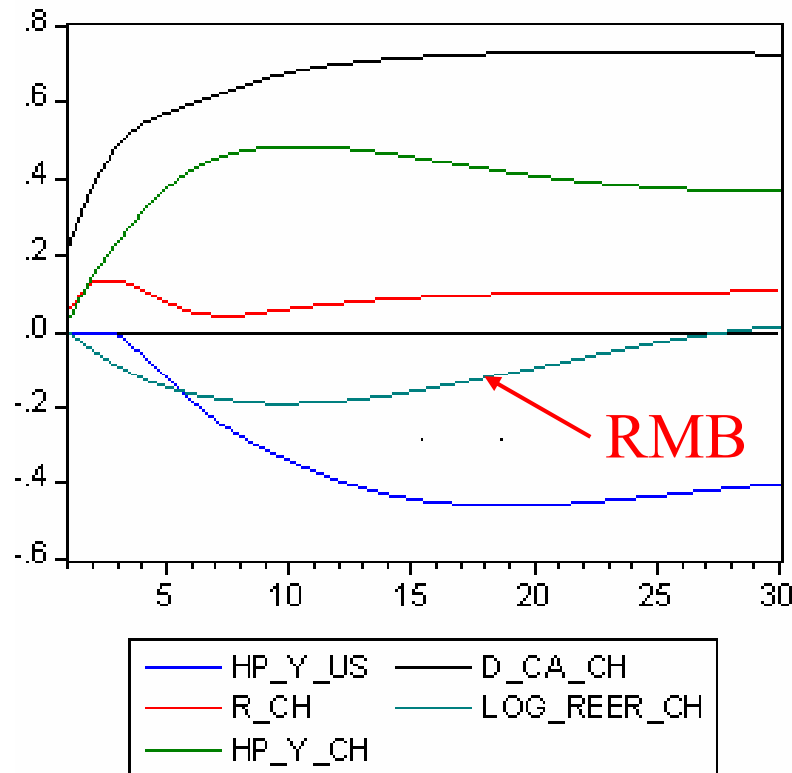
- Structural VAR models with contemporaneous restrictions based on the neo-classical and Keynesian theories are used to investigate effect of the RMB exchange rate on current account of not only China but also Japan and Korea.
- The 5-variable structural VAR models are used to analyze impulse responses to an exchange rate shock as well as an US GDP shock.
- We conduct factor decomposition of current accounts of East Asian countries by the forecast error variance decomposition.
- The sample period: 1994Q1 to 2006Q4.



Impulse response of current account (China)

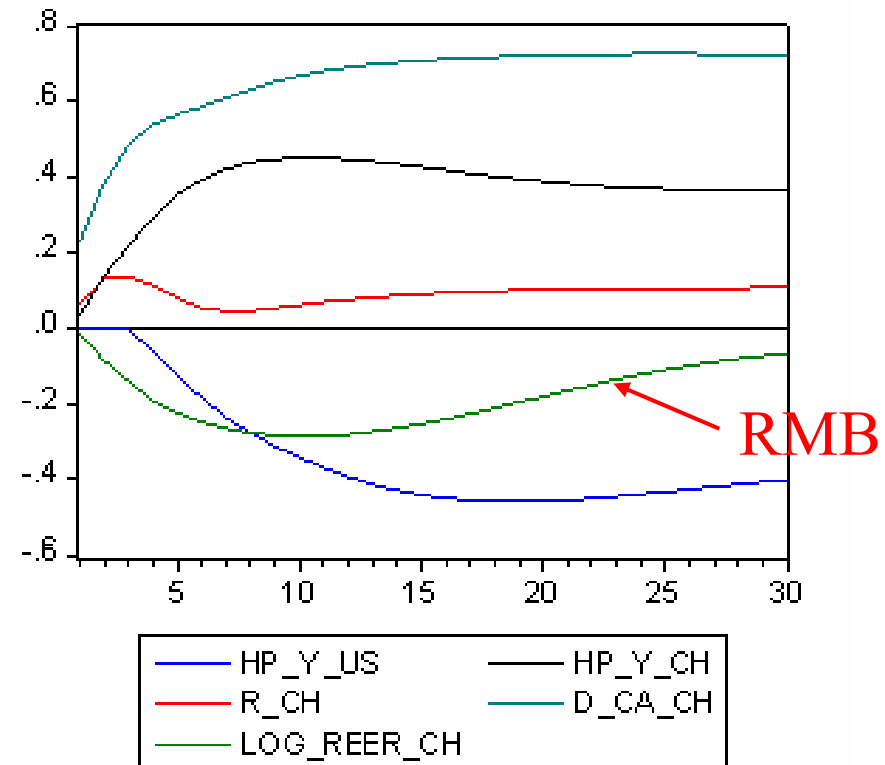
Neo-classical Model

Accumulated Response of D_CA_CH to Cholesky
One S.D. Innovations



Keynesian Model

Accumulated Response of D_CA_CH to Cholesky
One S.D. Innovations

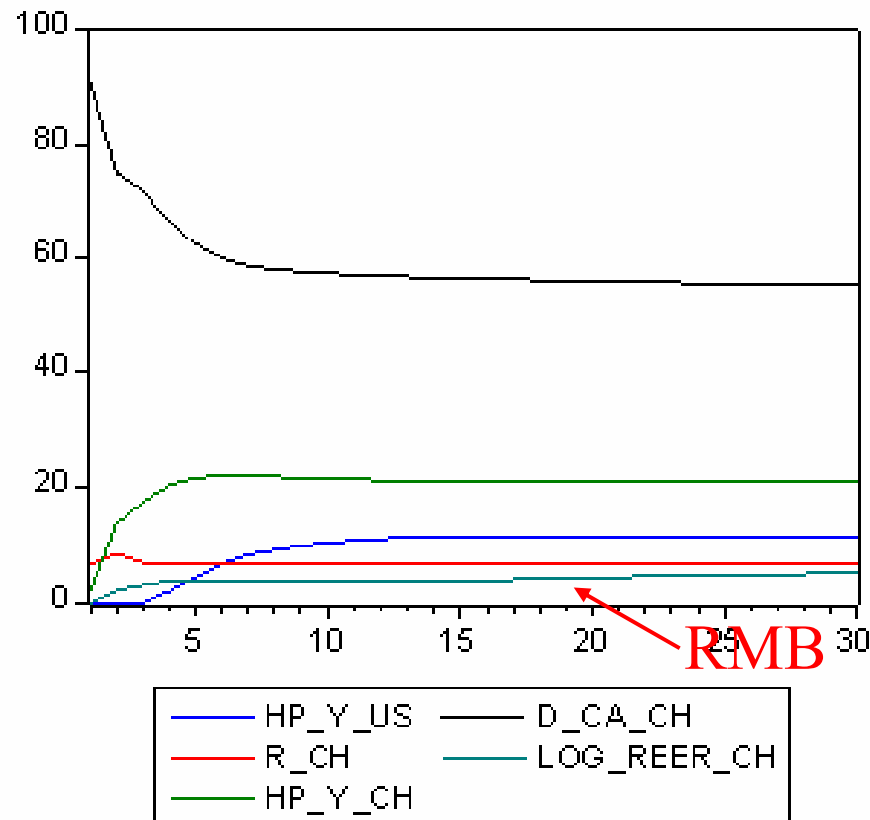




Variance decomposition of current account (China)

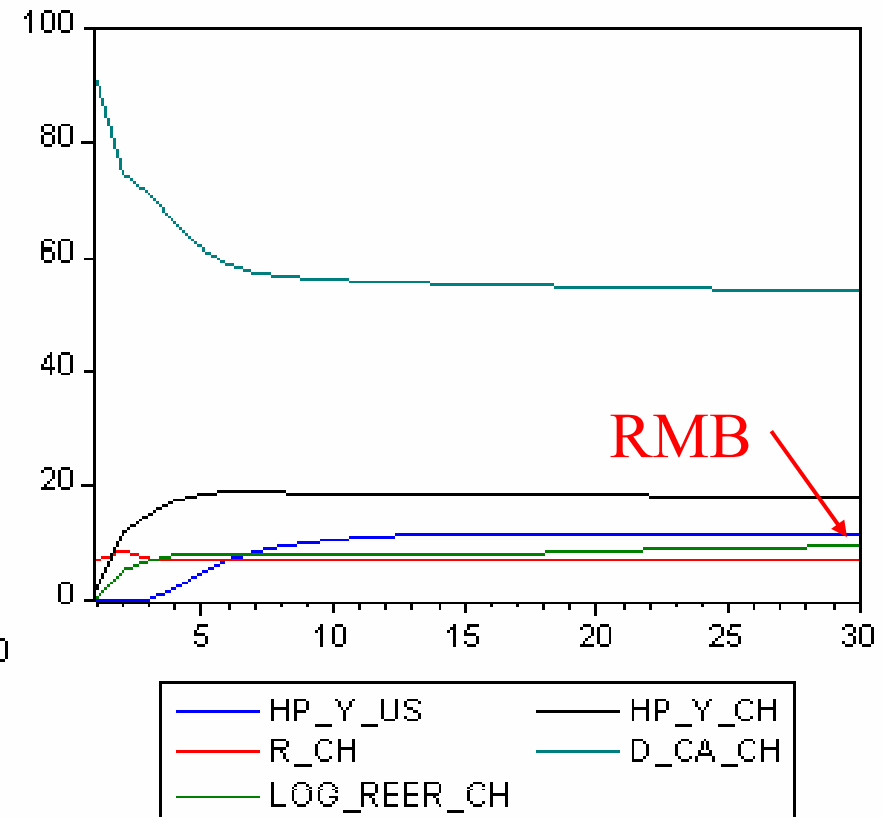
Neo-classical Model

Variance Decomposition of D_CA_CH



Keynesian Model

Variance Decomposition of D_CA_CH

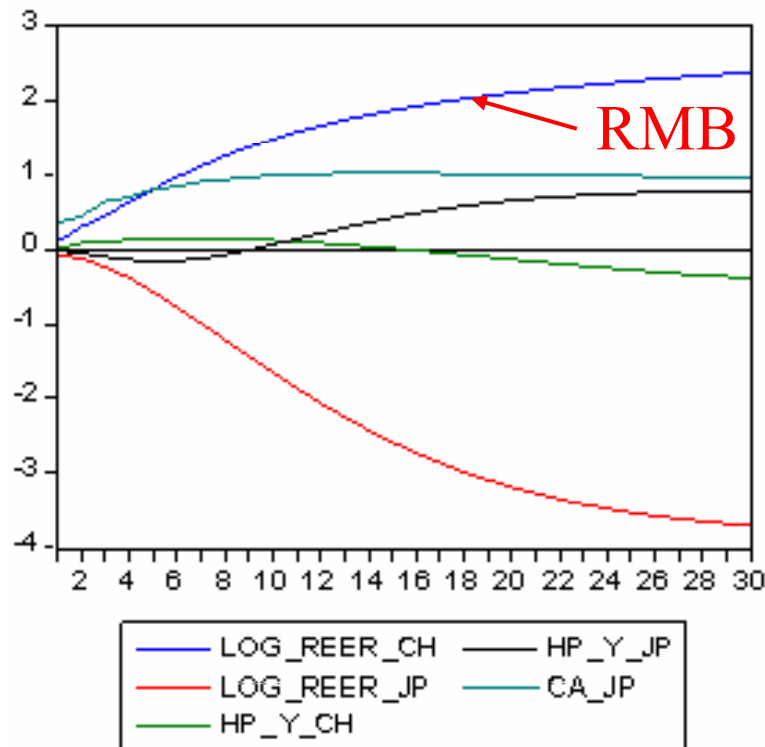




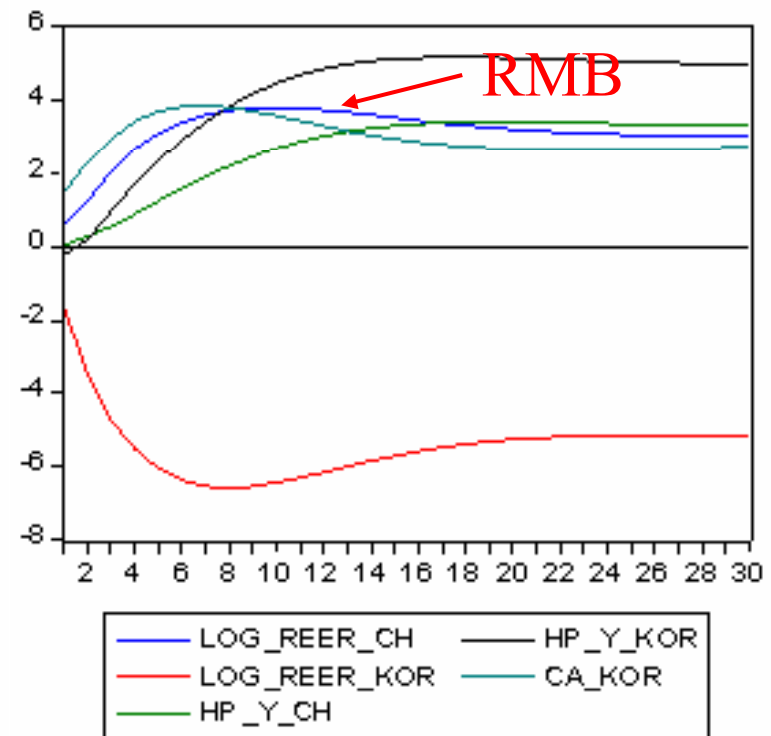
Accumulated Response of Current Account of Japan and Korea to RMB (Five-variable VAR)

Japan Korea

Accumulated Response of CA_JP to Cholesky
One S.D. Innovations



Accumulated Response of CA_KOR to Cholesky
One S.D. Innovations





Analytical results

- The exchange rate of RMB has negative short-run effect but no long-run effect on current account of China while GDP of China has positive effect on its current account.
 - The exchange rate of RMB has a positive direct effect on positive current accounts of Japan and Korea.
- ⇒ Revaluation of RMB would have relatively smaller contribution to reducing the current account surplus of China. GDP and, in turn, savings are more important factor for reducing the current account surplus.
- ⇒ On one hand, revaluation of the RMB would improve current accounts of Japan and Korea and some ASEAN member countries.



Current regional monetary cooperation in East Asia

- CMI (Chiang Mai Initiative) was established by ASEAN+3 Financial Ministers in 2000.
 - (1) Network of bilateral currency swap arrangements for crisis management
 - (2) Surveillance process for crisis prevention (Economic Review and Policy Dialogue (ERPD) of ASEAN+3). It focused on macroeconomic variables **except for exchange rates**.
- From CMI to CMI Multilateralization (CMIM) in 2010.
 - (1) Foreign reserve pooling
 - (2) Multilateral decision-making process for implementing currency swap arrangement.



Limitation of CMI

- Limitation of CMI includes IMF link (currency swap arrangements will be implemented only after IMF decides to give financial assistance to a crisis-hit country).
- Korean government did not implement a currency swap arrangement under the CMI due to the IMF link. But it has concluded a new currency swap arrangement with US FRB and implement it promptly while BOK has concluded a currency swap arrangement in terms of yen/won with BOJ.
- The reason is that Korea experienced severe situation under the strict conditionarity of IMF in the Asian Currency Crisis.
- In 2009, IMF implemented lending policy improvement which includes creating Flexible Credit Line (FCL) as well as modernizing conditionality. The Korean government did not request IMF any financial rescue including the FCL.



Beyond the limitation of CMI

- It is necessary to reduce or eliminate the IMF link of currency swap arrangement under CMI in order that CMI should be effective for regional monetary cooperation in East Asia.
- At the same time, it is necessary to establish a secretariat who make surveillance over East Asian countries and implementation of currency swap arrangements in order that CMI should not depend on IMF's surveillance.
- Under the surveillance of CMI, intra-regional exchange rates should be focused on. For the purpose, the AMU and AMU Deviation Indicators should be used for surveillance.



Multi-Step approach to regional monetary cooperation (Ogawa and Shimizu (2008))

- **1st step:** policy dialogue about exchange rates and exchange rate policies and surveillance by using AMU and AMU Deviation Indicators at ERPD of ASEAN+3.
- **2nd step:** managed floating exchange rate system with reference of individual G3 currency basket plus surveillance by using AMU Deviation Indicators .
- **3rd step:** managed floating exchange rate system with reference of common G3 currency basket plus surveillance by using AMU Deviation Indicators .
- **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



Conclusion

- Policy proposals for strengthening regional monetary cooperation in East Asia after the global financial crisis:
 - (1) Start policy dialog regarding intra-regional exchange rate stability to solve “coordination failure” of currency policy among East Asian countries in order to stabilize intra-regional exchange rates among East Asian currencies.
 - (2) Introduce surveillance over exchange rates into the surveillance process under the CMI.
 - (3) Reduce or eliminate the IMF link in order that the currency swap arrangements should be effective under the CMI.
 - (4) Establish a secretariat who make surveillance over East Asian countries and implementation of currency swap arrangements in order that CMI should not depend on IMF’s surveillance



References

- Ogawa, Eiji and Takatoshi Ito, “On the Desirability of a Regional Basket Currency Arrangement,” *Journal of the Japanese and International Economies*, vol. 16, No. 3, 317-334, 2002.
- Ogawa, Eiji and Kentaro Iwatsubo, “External adjustments and coordinated exchange rate policy in Asia,” *Journal of Asian Economics*, vol. 20, No. 3, 225-239, 2009.
- Ogawa, Eiji and Junko Shimizu, “A role of the Japanese yen in a multi-step process toward a common currency in east Asia,” *Fukino Discussion Paper Series*, 3, 2008.
- Ogawa, Eiji and Taiyo Yoshimi, “Analysis on β and σ Convergences of East Asian Currencies,” *RIETI Discussion Paper*, 09-E-018, 2009.