Preliminary

Needs and Directions of Monetary Cooperation in East Asia*

Junggun Oh**

<Abstract>

This paper is concerned with analysing the prospects of closer cooperation in the conduct of monetary and exchange rate policy for the economies of East Asia. A number of possible forms that this may take are investigated including that of establishing an Asian Exchange Rate Mechanism and an Asian Monetary Union, as well as the necessary conditions that would need to be satisfied to make these possible and successful. Short, medium and long run agendas for the attainment of monetary and exchange rate policy cooperation are also explored. The experience of the Euro area members are discussed to identify important lessons for the East Asian economies should they decide to go down this route of closer monetary and exchange rate cooperation, as well as perhaps moving towards the longer term objective of economic and monetary union along the lines of that attained in Europe.

The paper suggests that closer monetary and exchange rate policy cooperation is desirable for the economies of East Asia, particularly if they wish to avoid future exchange rate and financial crises in the context of globalised financial markets. By taking cooperative action they would be in a better position to resist the adverse consequences of sudden and sizeable movements in global capital, and the potentially deleterious effects that this can have on the growth and development of their domestic economies. In addition, monetary and exchange rate policy cooperation in East Asia would enable this region to exert an important influence upon the future evolution of the global trade and financial system.

Key words: Monetary Cooperation, Exchange Rate, Currency Crisis, East Asia
JEL Classification: F31 F33 F42

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Contents

I. Introduction

The recent East Asian currency crisis has increased the needs for East Asian monetary cooperation. Many studies have argued that the East Asian currency crisis was mainly attributable to a number of structural weakness in the region that have been accumulated during the period of rapid economic growth. On such basis, crisis-hit East Asian countries have carried out strong structural reforms in many sectors including financial, corporate, public and labor sectors. Nevertheless, it has also been argued that the crisis was, in an international perspective, resulted from exchange rate misalignment between yen and East Asian currencies triggered by a sudden variation of yen/dollar exchange rate. The effect of the sharp depreciation of yen against dollar turned out to be devastating to East Asian countries since they had mostly pegged their currencies to the US dollar while their economies had been deeply linked to the Japanese economy, in particular, a large share of their exports have had competitive relationship with Japanese one in the international markets.

On the other hand, after crisis, East Asian currencies are appreciated against dollar reflecting an increase in their correlation with yen having become strong, while yuan is still almost fixed to dollar. As a consequence, East Asian currencies are appreciated against yuan, in particular, since 2002 when East Asian currencies have been appreciated against dollar. Such appreciation of East Asian currencies against yuan of China, a newly emerging competitive country against other East Asian countries in the export market, is becoming one of causes of a recent deterioration of the current account of other East Asian countries. In such a way, disharmonious movements of exchange rates in the East Asian region become a cause of an increase in instability of the economy in the respective country in the region as well as of the economy in the region as a whole.

Accordingly, the issue of the importance of monetary cooperation in the region is being raised again. Greater exchange rate instability and uncertainty in the region not only have been causes of the crisis but also are big obstacles to economic growth and recovery in the region. Therefore, it requires close regional monetary cooperation to stabilize regional currencies and prevent crises from reoccurring in the region.

In fact, the East Asian crisis again shows, as in the 1992 Eurpean currency crisis, that any one country alone, in spite of his maintaining macroecomonic soundness and financial market stability, is hardly able to protect him from attacks of huge speculative funds. In addition, the East Asian crisis shows that how much important regional cooperation is to prevent from currency crisis.The total amounts which IMF agreed to support to Thailand, Indonesia and Korea were only 35.2 billion US dollar in the 1997 crisis, while total amunts of foreign exchange reserves held by the East Asian central banks including Japan, China, Taiwan, Hongkong and Singapore at that time were more than 600 billion US dollar, but a penny of them could not be utilized for preventing the occurrence of the currency crisis since there was no concrete agreement for monetary cooperation in the region.

The East Asian crisis became a momentum to realize the needs for East Asian monetary cooperation stronger than ever. The issue of monetary corporation is nowadays emerging as a serious and important task of how East Asian countries can survive amid the increasing tide of financial globalization and international financial instbalility. In this regard, the launch of the single currency in Europe could provide the East Asian

countries with the other motive of monetary cooperation.

Since the crisis, some proposals such as the establishment of Asian Monetary Fund and currency swap agreement have been once suggested to strengthen monetary cooperation in the region. Bilateral currency swap agreements based on the Chiang Mai Initiative(CMI) agreed in the ASEAN+3 finance ministerial meeting on May 2000 were signed between most regional member countries. However, real contents and depths of the regional monetary cooperation so far agreed, although 8 years have passed since the crisis was broken out, are unfortunately really at the beginning stage and thus far from preventing the reoccurrence of the crisis. Even there may be some uncertainties on how much effectively the bilateral currency swap agreements work when the currency crisis occurres concurrently in the region.

It may be reasonable that monetary cooperation should be carried out step-by-step considering the feasibility and effectiveness of the proposals. As short-term agenda, corporative intervention in the foreign exchange markets and the currency swap agreement could be considered, while as medium-term agenda, Asian Monetary System and Asian Monetary Fund, and as long-term agenda, Asian Monetary Union could be respectively suggested.

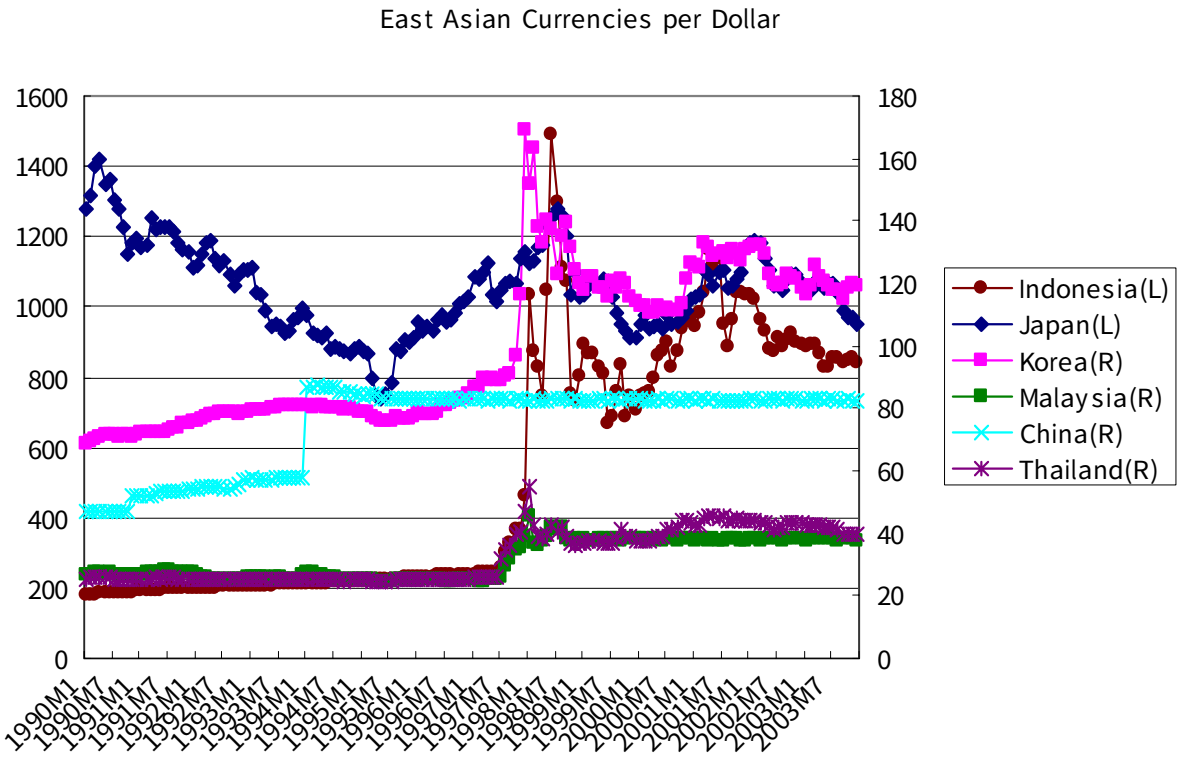
In this paper, the following section II is allocated for the review of the needs for monetary cooperation in East Asia, and in section III, some proposals for monetary cooperation in East Asia to prevent another crisis from reoccurring amid an increasing tide of financial market globalization and international financial instbalility. And finally, section IV concludes with a brief summary of the paper.

II. Currency Crisis and Needs for Monetary Coopration in East Asia

1. Movements of Exchange Rates in East Asia before and after the Crisis

Before the crisis in 1997, some East Asian currencies such as Korean won, Thai baht and Indonesian rupiah were relatively strongly pegged to the US dollar, while Chinese yuan and Malaysian ringgit were fixed and Japanese yen was much more depreciated from mid-1995 to mid-1997 than other East Asian currencies such as Korean won, Thai baht and Indonesian rupiah. Such depreciation of Japanese yen from mid-1995 to mid-1997 reflected prolonged stagnation of the Japanese economy at that time and sharp devaluation of Chinese yuan in 1994.

<Figure1>



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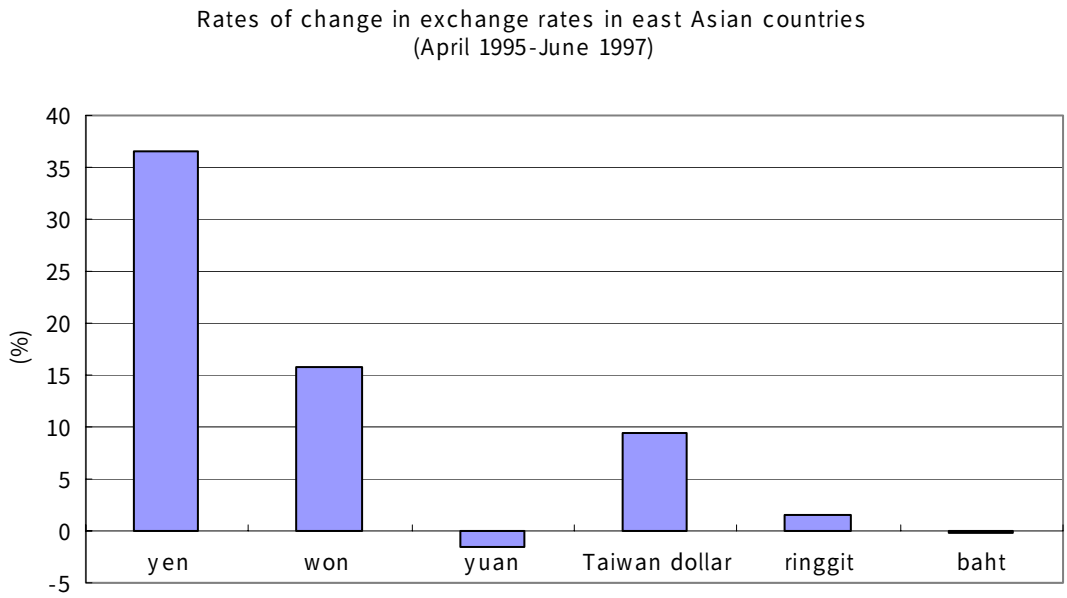

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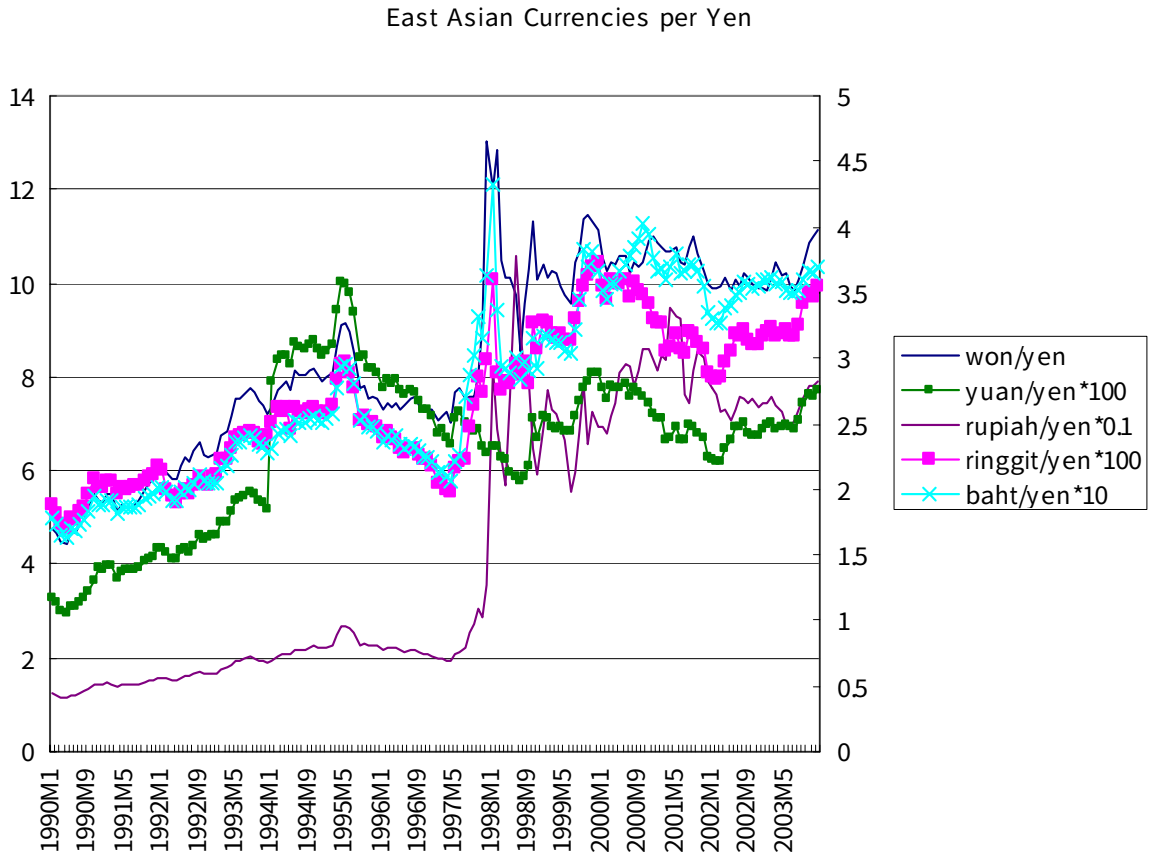

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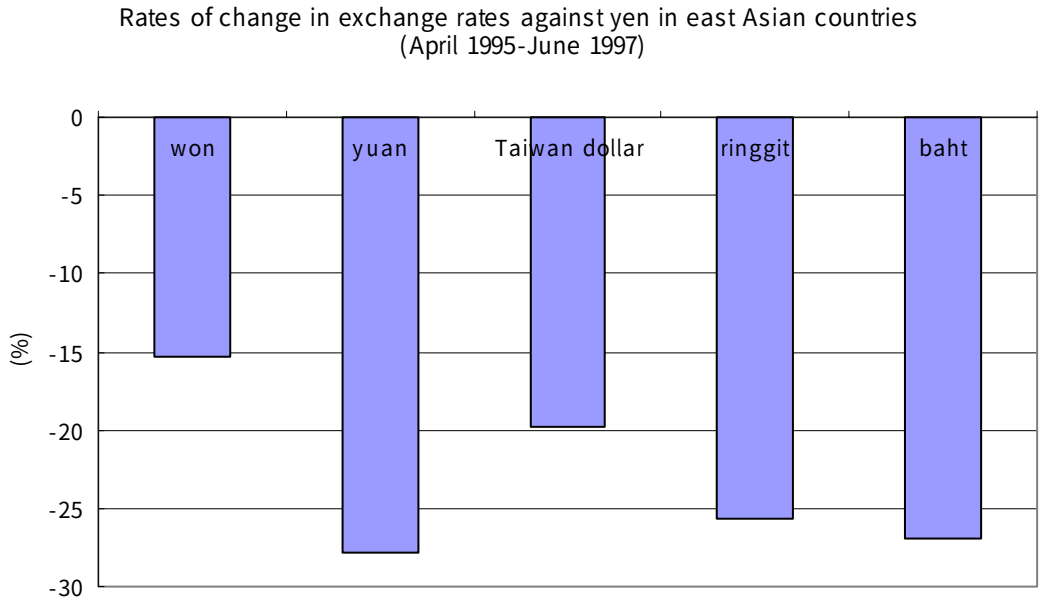


After the crisis, yen has turned to be strong reflecting a sustained increase in the deficits of the current account in the US. Chinese yuan and Malaysian ringgit have been fixed to US dollar. However, other East Asian currencies have shown concurrent movements with Japanese yen reflecting an increase in their correlation with yen.

In such a way, an exchange rate of yen/dollar strongly influences exchange rates of East Asian currencies, while it is determined in the international financial market regardless of fundamentals of the East Asian economy.

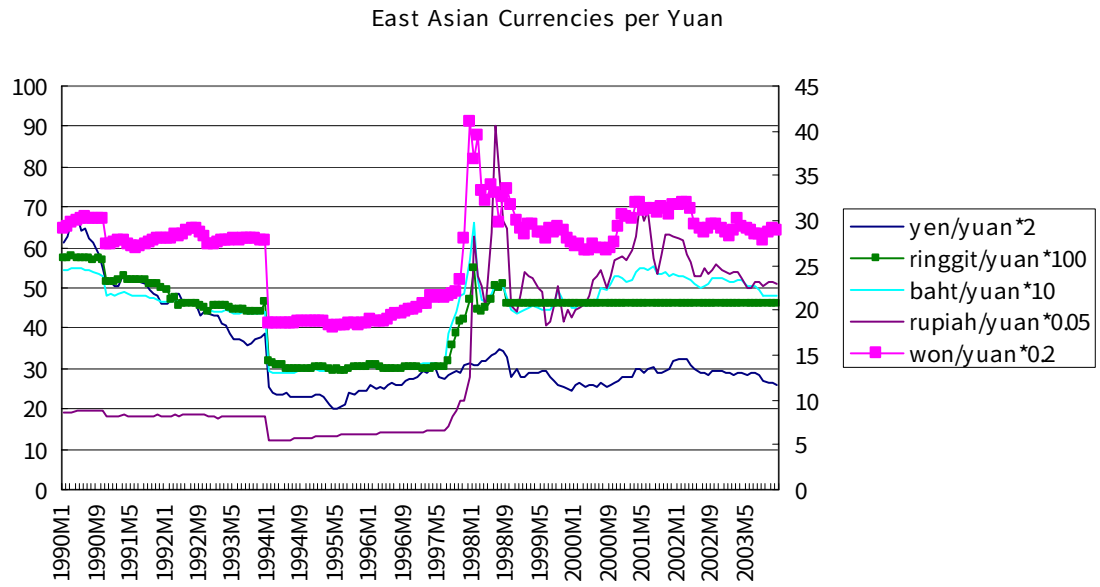
Before the crisis, in particular, during the period from mid-1995 to mid-1997, East Asian currencies were strongly pegged to dollar, while yen was depreciated. As a consequence, East Asian currencies were appreciated against yen during the period from mid-1995 to mid-1997.

After the crisis, East Asian currencies are deviated from the dollar-peg and lean to yen. Accordingly, East Asian currencies show almost concurrent movements, i.e. ‘coupling’ with Japanese yen reflecting an increase in their correlation with yen in the overall post-crisis period. Of course, from period to period, they show some ‘decoupling’ with yen, in particular in 2003.

Against yuan, East Asian currencies were appreciated in 1994 reflecting the measure of sharp devaluation of yuan in 1994. Since then, East Asian currencies were stable against yuan before the crisis because East Asian currencies were pegged to dollar and an exchange rate of yuan/dollar also was fixed to US dollar.

After crisis, East Asian currencies are appreciated against dollar reflecting an increase in their correlation with yen having become strong, while yuan is still fixed to dollar. As a consequence, East Asian currencies are appreciated against yuan, in particular, since 2002 when East Asian currencies have been appreciated against dollar.

<Figure 5>



Such disparities in exchange rates in East Asia are mainly resulted from different exchange rate regimes and different exchange rate managements. Korea, Japan and Thailand newly adopted a free floating exchange rate regime respectively, while China and Malaysia maintain a fixed exchange rate regime. And degrees of interventions in the foreign exchange market are also varied from country to country.

<Table 1> Exchange Rate Regimes in East Asia

	Before the Crisis		After the Crisis	
	IMF (*De Jure*)[1)]	Reinhart and Rogoff *(DeFacto)* [2)]	IMF (*De Jure*) [1)]	Reinhart and Rogoff *(De Facto)* [2)]
Korea	Managed floating	Crawling peg to US dollar	Independent floating	Freely floating
Japan	Independent floating	Independently floating	Independent floating	Independently floating
China	Managed floating	Peg to US dollar	Limited flexibility wrt US dollar	Peg to US dollar
Malaysia	Managed floating	Limited flexibility wrt US dollar	Pegged to US dollar	Pegged arrangement
Thailand	Limited flexibility wrt a basket	Peg to US dollar	Independent floating	Managed floating
Indonesia	Managed floating	Crawling peg to US dollar	Free floating	Freely floating

Sources: 1) Frankel et. Al. (2002) and IMF, *Annual Report on Exchange Arrangement and Exchange Restriction.* 2) Reinhart and Rogoff (2004)

2. Changes in Influences of Dollar and Yen on East Asian Currencies before and after the Crisis

Empirical estimations are necessary to more correctly examine how much a degree of influences of dollar and yen on East Asian currencies has been changed after the crisis compared with before the crisis. Exchange rates of yuan and ringgit are fixed. Therefore, estimation on exchange rates of won, baht and rupiah are carried out.

Before econometric estimation, plots of East Asian national currencies and dollar, and of East Asian national currencies and yen in both periods of before and after the crisis are examined. Three currencies show clearly close correlations with dollar and some correlations with yen before the crisis. But after the crisis, won and baht show an increase in correlation with yen, while maintaining correlation with dollar. However, in the case of rupiah, both correlations with dollar and yen become ambiguous.

It is estimated, using an equation of ln(national currency/ssf) = constant + ln(dollar/ssf) + ln(yen/ssf), how much a degree of influences of dollar and yen on East Asian currencies has been changed after the crisis compared with before the crisis. Estimations were carried out in two periods, i.e. from January 1990 to June 1997 before the crisis, and from July 1998 to December 2003 after the crisis.

Unit root tests on all the variables show that they all have a unit root (See Appendix Table 1). Cointegration tests show that there is a cointegration relationship among Korean won, US dollar and Japanese yen in both periods. Accordingly, level variables are used in estimation. There is a serial correlation in OLS estimation and thus, AR1 estimation method is used.

There is no cointegration relationship in level variables among Thai baht, US dollar and Japanese yen in both periods, and among Indonesian rupiah, US dollar and Japanese yen in both periods (See Appendix Table 2). Accordingly first differences are used in estimation.

Estimation results show that all three currencies show very close correlations with dollar before the crisis. Estimated coefficients range from 0.8-1.0. Won and baht show some correlations with yen. But rupiah shows no correlations with yen. But after the crisis, won and baht show an increase in correlations with yen, while maintaining correlations with dollar. However, in the case of rupiah, a correlation with dollar drastically decreases and one with yen sharply increases (See Table 2).

<Table 2> Influence of Dollar and Yen on East Asian Currencies before and after the Crisis

	1990.1=1997.6(Before crisis)						1998.7-2003.12 (After crisis)					
	const	dollar	yen	R2	D.W	RHO	const	dollar	yen	R2	D.W	RHO
won	2.55	0.77	0.21	0.99	1.9	0.98	2.43	0.72	0.32	0.94	1.64	0.73
t-value	13.51	11.16	2.2			78.95	8.55	4.61	2.31			5.95
baht	0	0.82	0.12	0.99	2.63		0	0.62	0.23	0.54	2.04	
t-value	1.34	86.8	11.7				0.14	5.97	2.58			
rupiah	0	0.97	0.02	0.99	2.39		0	0.1	0.77	0.13	1.8	
t-value	9	75.3	1.69				0.53	0.27	2.57			

Notes:1. Estimation equation: ln(national currency/ssf)=constant+ln(dollar/ssf)+ln(yen/ssf)
2. Among Korean won, US dollar and Japanese yen in both periods, there is a cointegration relationship. Accordingly level variables are used. Due to serial correlation, AR1 estimation method is used
3. Among Thai baht, US dollar and Japanese yen in both periods, there is no cointegration relationship in level variables. Accordingly first differences are used
4. Among Indonesian rupiah, US dollar and Japanese yen in both periods, there is no cointegration relationship in level variables. Accordingly first differences are used

3. Consequences of Exchange Rate Disparities in East Asia

East Asian emerging economies have similar economic structures and development strategies, i.e. an export-oriented economy. NIEs have severe competition even with Japan in overseas markets, in particular, in the US market. Accordingly, appreciation of some countries' currencies against the other neighbor countries' currencies may result in severe impacts on their export competitiveness.

Before the crisis, in particular, from mid-1995 to mid-1997, appreciation of East Asian countries' currencies against Japanese yen due to the weakening of yen resulted in an increase in the current account deficits in East Asia, which became an important cause of the crisis. After the crisis, recent appreciation against yuan of the currencies of some East Asian countries such as Korea, Thailand and Indonesia shows similar effects, i.e. a decrease in the current account surplus.

As a result, the US market occupation ratio in terms of the ratios of composition of US trade deficits by countries considerably increased from 19.2% in 2000 to 21.4% in 2004 in China only in East Asia. It increased slightly from 2.8% to 3.2% in Korea. All other East Asian countries experienced a decrease of the US market occupation ratio; from 18.6% to 13.1% in Japan, from 2.2% to 1.9% in Thailand, from 1.8% to 1.4% in Indonesia respectively during the same period. The ratio in Malaysia adopting a fixed exchange rate regime also decreased from 3.3% to 2.7%.

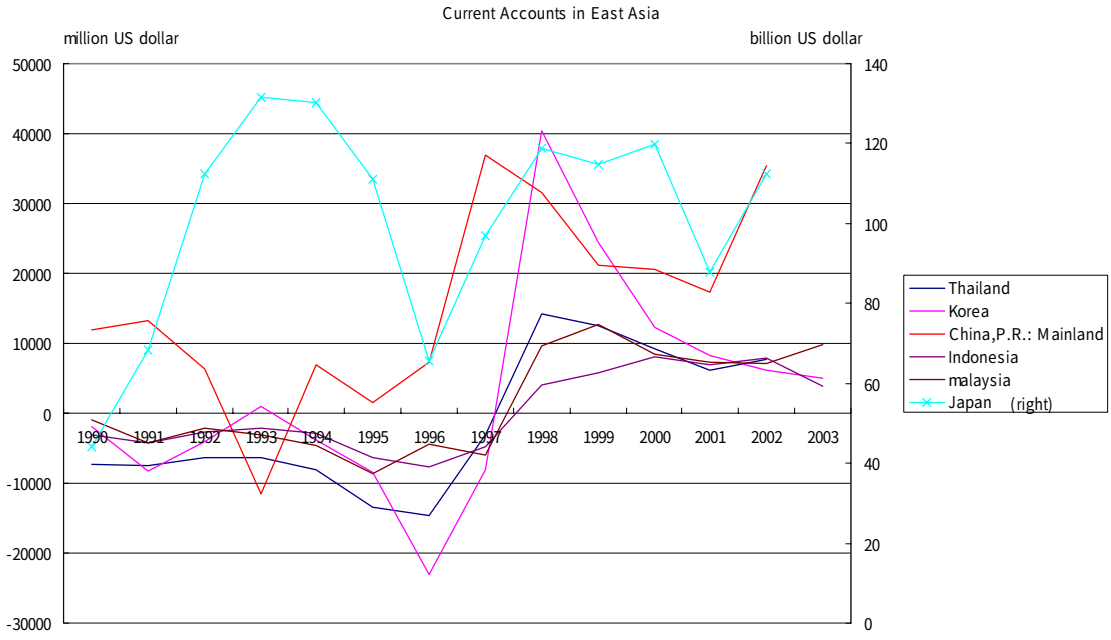
In order to see the influences of Chinese yuan on the exports of East Asian countries, simple VAR analyses have been carried out on each country[1]. As results of analyses,

[1] Three variables of real effective exchange rate of Chinese yuan, industrial production index of industrial countries (IPI) and exports of each country with two lags are used. All variables are transformed into log ones.

among Korea, Malaysia, Thailand, Indonesia and Japan, Korean exports seem to be relatively largely influenced compared with other East Asian countries(see Appendix Figure 1).

In that sense, both appreciations of some East Asian countries' currencies against Japanese yen before the crisis, and recently against yuan of China, a newly emerging economy having similar structures are expected to result in similar effects. Accordingly, disparities in exchange rates in East Asia are important issues in East Asia.

<Figure 6>



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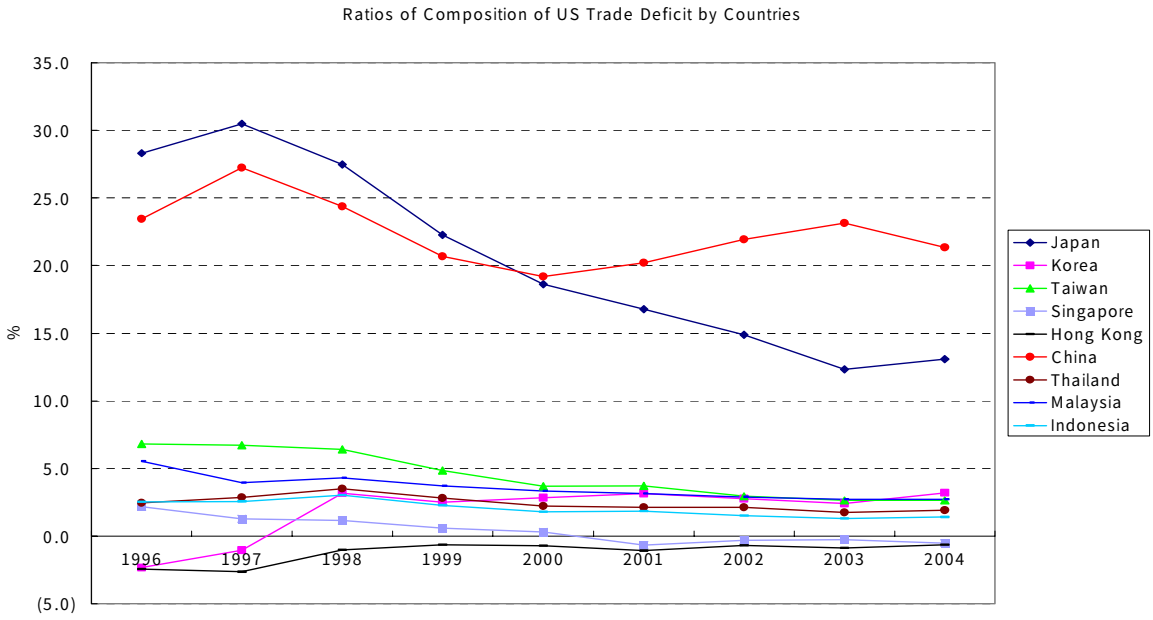

4. Needs of Exchange Rate Policy Cooperation in East Asia

Different exchange rate regimes and different exchange rate managements lead to disparities in exchange rates in East Asia and to deterioration of the current accounts in some countries whose currencies are appreciated against the other neighbor countries' currencies. It may become one of causes of currency crisis.

Deterioration of the current accounts in some East Asian countries before the crisis, one of causes of the crisis, was not due to their currencies' peg to dollar itself, but due to their peg to a strong currency and, as a consequence, their appreciation against other competitor countries' currencies.

In that sense, a recent increase in correlation between strong yen and some East Asian currencies, as a result, their appreciation, in particular, against Chinese yuan, an exchange rate of which is fixed to weakening US dollar, should be carefully monitored.

Ultimately East Asia needs to have close cooperation in exchange rate policies, for instance, cooperative interventions etc, to avoid exchange rate disparities and another crisis. But, in order to have close cooperation in exchange rate policies such as cooperative interventions etc, first of all, exchange rate regimes and exchange rate policies should be more flexible in the region. In particular, considering a substantial increase in the Chinese influence in the region, an increase in the flexibility of Chinese yuan is essential.

However, an exchange rate is one of important macroeconomic policy variables with an interest rate and fiscal policy variables. Accordingly, it is almost impossible to reach exchange rate policy cooperation without considerations on the macroeconomic situatioins of each country. Therefore it is necessary to establish some systematic channels such as macroeconomic policy dialogue among finance ministers and central bankers in the region to increase the understanding on the macroeconomic situations of each country. As such mutual policy dialogue will continue, mutual understanding on the macroeconomic situatioins of each country will also deepen, and, as a result, some practical and effective ideas on exchange rate policy cooperation could be suggested and implemented.

III. Proposals for Monetary Cooperation in East Asia

As reviewed in the above, to stabilize the currencies and to prevent crises from re-occurring in East Asia requires close regional monetary cooperation. The needs for East Asian monetary cooperation, in particular after the crisis, are become stronger than ever (Shin, Wang and Lee 2002, 2003; Wang 2000; Curtis 1998; Moon 1999; Yam 1997). In the world of financial integration, emerging countries become more and more vulnerable to capital flows. No matter how well emerging countries are internally prepared, they are not large enough to stand alone against the tide of international capital flows, so they must protect themselves by a collective monetary arrangement.

In fact, after the East Asian currency crisis, Asian monetary cooperation appears to be an alternative to a freely floating exchange rate regime. In the world of financial integration, a fixed exchange rate regime is impossible and thus a freely floating exchange rate regime is inevitable. However, a small open economy with a freely floating exchange rate regime in the international financial integration is likely to expose himself to the periodical currency crisis

Under these circumstances, there have been a variety of proposals on the monetary cooperation to avoid excessive volatility and the misalignment of exchange rates, and to prevent another crisis from occurring[2]. Proposals for Asian monetary cooperation must deal with at least two issues: *how to stabilize exchange rates within the region and how to provide international liquidity in an urgent situation*. Proposals could be classified into short, medium and long-term agendas depending on the degree of feasibility of the proposals and on how long time will be needed for their realization. As short-term agendas, corporative interventions of the related countries in the foreign exchange market for the stabilization of exchange rates, and currency swap for the provision of international liquidity in an urgent situation could be considered. As medium agendas, Asian Monetary System for the stabilization of the exchange rates and Asian Monetary Fund could be taken into account. Finally as a long-term agenda, Asian Monetary Union could be proposed.

3.1. Short-term Agendas

3.1.1. Corporative Intervention

In order to stabilize exchange rates in the international financial markets, first of all, corporative intervention in the foreign exchange markets of industrial countries could be used as in the 1980s. For the realization of the corporative intervention, the efforts for policy cooperation should be made among industrial countries. In addition to this temporary intervention, proposals to institutionalize the proper intervention in the foreign exchange markets have been suggested. For example, the former German Finance Minister Lafontaine has proposed the creation of an exchange rate target zone system between the dollar, the euro and the yen. Japanese Prime Minister Obuchi also made a similar proposal, during his visit to Europe in January 1999, under the name of a

[2] Dollarization or the currency board system is proposed as another alternative, with which the autonomy of monetary policy will be totally lost.

reference exchange rate system, which can be considered as a sort of exchange rate target zone system. Mckinnon (1996) has proposed a common monetary standard for the 21st century (CMS21), a sort of fixed exchange rate system.

The prerequisite for this approach is close policy cooperation by the US, the EU and Japan. There is, however, little room for a small open country such as East Asian NIEs to influence these mechanisms on its own initiative. Accordingly, East Asian countries should try to institutionalize the process, for instance, active utilization of the G20 meeting, through which their views and positions could be reflected.

As for the region, more importantly, corporative intervention among East Asian countries to escape competitive depreciation or devaluation also should be strengthened. However, for corporative intervention in the region, exchange rate systems in the region should be more flexible. In the current situation where some countries such as China and Hong Kong maintain *de facto* fixed exchange rate systems, while other countries operate flexible or managed flexible exchange rate systems, corporative intervention could be hardly possible. But the 1997 crisis shows that once a crisis breaks out in a country in the region, other countries are likely to be contaminated easily. Accordingly, some countries even operating fixed exchange rate systems are hardly able to escape a crisis, once a crisis breaks out in a country in the region. This is an important lesson which countries operating fixed exchange rate systems should learn. Ultimately exchange rate systems in the region may be convergent. At that stage, it could be also raised what kind of exchange rate system is more appropriate for the East Asian region.

In addition to different exchange rate systems in the East Asian region, the stages of economic development and internal macroeconomic situations are substantially varied country by country. Accordingly, the targets of macroeconomic policies are also naturally divergent. An exchange rate policy is one of macroeconomic stabilization policies such as monetary and fiscal policies. Therefore, mutual understanding for macroeconomic situations and policies among countries in the region is inevitable for the corporative intervention. In order to enhance mutual understanding for macroeconomic situations and policies among countries, macroeconomic policy dialogue or macroeconomic policy coordination meeting among countries in the region should be more activated. Such macroeconomic policy dialogue or macroeconomic policy coordination meeting will lead to the effective and useful corporative intervention in the region.

3.1.2. Currency Swap

To prevent another crisis from occurring, a monetary cooperation instrument through which enough liquidity can be provided in urgent situations is essential. In this regard, an emerging alternative short-term agenda is currency swap. Asian countries have been working towards making themselves more financially self-sufficient. The 10 members of the Asean, together with China, Japan and South Korea named as Asean+3 agreed to set up bilateral currency swap networks among member countries called the Chiang Mai Initiative(CMI) at the ASEAN+3 finance ministerial meeting held on May 2000 at Chiang Mai in Thailand.

More limited swap agreements existed between some Asean members at the time of the 1997 crisis, but were ineffective. However, the scale of this new initiative is much

larger. The "+3" members have combined foreign exchange reserves of more than $1,760 billion as of the end of October 2005. The arrangement becomes a new landmark of cooperation between north and south East Asia. Perhaps the most important aspect of the Chiang Mai initiative on currency swap is the closer economic dialogue among its 13 members. So far, as of November 10, 2005, 17contracts of total amounts of US$ 58.5billion were completed.

Main Conditions of the CMI Currency Swap Agreement

1. Period of contract: 3 years
2. Way of swap: two-way or one-way
3. Currency of swap: currency of requesting country /US dollar
4. Period of drawing: 90 days per time, and a renewal up to 7 times is possible (up to 2 years)
5. Interest rate of swap: Libor+150bp (50bp will be added upon 2 times renewal, up to 300bp)
6. Condition of drawing: in link with IMF program (Less than 20 percent of the total amount of swap agreement may be drawn without link with IMF program)

However, there may be some uncertainties on how much effectively the bilateral currency swap agreements work when the currency crisis occurs concurrently in the region. In particular, the swap agreement is not compulsory, and the contract may be cancelled upon one-way notification to the counterpart. Since any countries are likely to be reluctant to give their neighbors access to their reserves, economic policy cooperation should be much more strengthened among the member countries.

<Table 3>

. Bilateral Currency Swap by CMI (Total US $ 58.5 billion, 17contracts)[7]

(As of November 10, 2005) (US $ billion)

	Korea	Japan	China
Korea	–	2.0(2007.7.3) : Japanese support 3.0 (2007.7.3) : bilateral support	4.0 (2007.6.23) : bilateral support
Japan	2.0 (2005.7.3)[2] : Japanese support 3.0 (2007.7.3)[3] : bilateral support	–	3.0 (2006.3.27) : bilateral support
China	4.0 (2007.6.23) : bilateral support	3.0 (2006.3.27) : bilateral support	–
Thailand	1.0 (2005.6.24)[5] : bilateral support	3.0 (2007.3.6) : bilateral support	2.0 (2004.12.5)[5] Chinese support

Malaysia	1.5 (2008.10.13) :bilateral support	1.0 (2007.10.4)[4] Japanese support	1.5 (2005.10.8)[5] Chinese support
Philippines	1.5 (2007.10.16)[5] : bilateral support	3.0 (2006.2.26) Japanese support	1.0 (2006.8.29) Chinese support
Indonesia	1.0 (2006.12.23) : bilateral support	6.0 (2008.8.30) Japanese support	2.0 (2008.10.16) Chinese support
Singapore		3.0 (2006.11.9)[8] Japanese support	
Total	14 6 countries	24 7 countries	13.5 6 countries

Notes : 1) Dates in the parentheses are the dates of expiration of the contract

2) In addition to the existing currency swap of US $ 5 billion based on the Miyazawa plan.

3) Won-yen currency swap for peace-time.

4) In addition to the existing currency swap of US $ 2.5 billion based on the Miyazawa plan.

5) Temporarily expired.

6) There is a currency swap agreement of US $ 1 billion among ASEAN countries (ASA), and no additional bilateral currency swap agreement among ASEAN countries .

7) Including the currency swap of the note 5)

8) US $ of 3 billion of from Japan to Singapore and US $ of 1 billion of from Singapore to Japan

3.2 Medium-term Agendas

There may be two approaches recommendable as medium-term agendas for a small country such as East Asian NIEs to avoid excessive volatility and the misalignment of exchange rates and to prevent another crisis from occurring: Asian Monetary System for the stabilization of the exchange rates and Asian Monetary Fund could be proposed. The first one is a more systematic and concrete way to stabilize exchange rates in the long-term perspective, while corporative intervention in the exchange market is a temporary way in the short-term one. The second one is a more concrete and institutionalized way to utilize foreign reserves in the region, than Currency Swap, to overcome the temporary shortage of liquidity in a certain country in the region and, as a result, to prevent currency crisis from occurring.

3.2.1. Asian Monetary System (AMS)

Asian Exchange Rate Mechanism

To stabilize exchange rates in the long-term perspective, whether the participating countries should adopt a fixed exchange rate system directly from the beginning or adopt a target zone system initially and then move toward a fixed exchange rate system should be decided. Given that the economies of East Asian countries are very heterogeneous and that almost all these countries have moved to the floating system after the currency crisis, the latter option seems more relevant to the stabilization of the exchange rates of East Asian countries. As a more concrete and practical way to realize the second option, Asian Exchange Rate Mechanism (AERM), similar to European Exchange Rate Mechanism (ERM) could be proposed.

On the other hand, in order to move toward a full-fledged monetary union, a final regime of monetary corporation, it may be necessary for East Asian countries to have a transition period through which the experience of coordination and cooperation in economic policies could be accumulated since there have never been the experiences of what can be called economic union and, in addition, there is a total absence of political solidarity among East Asian countries. AERM could be a regime for monetary corporation in the transition period. In this regard, two issues are raised: First, what kind of anchor currency will be used, and, second, how much wide band will be appropriate.

First, as for the first issue, at the moment, three ways have been proposed: a way of using the currency of a certain country, of using the currency basket composed of dollar, euro and yen etc, and of adopting Asian Currency Unit (ACU) based on regional trade structures. Among them, as for the way of using the currency of a certain country, so-called the Triffin's dilemma can not be escaped. Also there may be asymmetric or one-way integration that a certain country using his currency as an anchor currency may operate his monetary policy independently, while other member countries may not. When an anchor currency becomes unstable, regional currencies may become unstable as well. In addition, some worries about the possibility of the dominance over the regional economy by a country using his currency as an anchor currency may become an obstacle to the adoption of the idea.

As for the way of using the currency basket composed of dollar, euro and yen etc, two currency basket systems have been suggested: an independent basket system by country and a common basket system for all member countries. In this case, there are some merits that, for instance, the shock from the instability of the key currencies such as dollar, euro and yen to the regional currencies could be reduced. But Japan remains outsider and may operate his monetary policy independently.

As for the way of adopting Asian Currency Unit (ACU) based on regional trade structures, at this stage, an independent monetary policy of member countries maintains, and exchange rate volatilities among member countries could be reduced. Accordingly, more countries could join the AERM. Consequently, one of appropriate forms may be a target zone system based on the Asian Currency Unit (ACU).

Second, as for the width of the band, there is a trade-off relation between the credibility of policy aiming at stabilization of exchange rates and the possibility of effective protection from speculative attacks. As the band is wider, the credibility decreases and the possibility of effective protection from speculative attacks may

increase. Considering heterogeneous economic conditions among member countries and the possibility of speculative attacks, as in 1997, at the beginning stage, it may be appropriate that the band of fluctuation is a little bit wider and frequent realignment should be avoided to cope effectively with speculation. More practically, a crawling peg type floating exchange rate system with the introduction of currency baskets on the basis of regional trade and industry structure has been proposed[3].

Short- term Loan Facilities and the Lender of Last Resort

Foreign exchange market intervention to stabilize the exchange rate within the given band of fluctuation requires short-term loan facilities such as the Very Short Term Financing Facility (VSTFF) in the European Monetary System (EMS) and a responsible strong currency country acting as the lender of last resort. In order for Asian countries under the pressure of currency crisis to be provided with sufficient liquidity, an emergency liquidity facility that can lend without a limit should be intorduced. As Eichengreen (1997) pointed out, the need for such international cooperation is becoming stronger, given the magnitude of current capital movements. In this regard, European monetary cooperation experiences could be a very good lesson.

In the history of monetary cooperation in Europe, the facility for the provision of liquidity has been constantly strengthened and constituted as one of the most important instruments for monetary cooperation. In the EMS, this facility is the Very Short Term Financing Facility (VSTFF). Under the VSTFF, the central banks of strong currencies have an obligation to provide unlimited amounts of their own currencies to defend the existing exchange rate margin, since the official reserve holdings that one country can use in order to intervene in the foreign exchange market are not sufficient to cope with the unprecedented huge magnitude of private capital movements. In the case of European countries, the German Bundesbank took this role as the lender of last resort. For example, during the EMS crisis in September 1992, the Bundesbank had supplied the credit of about DM 93 billion[4].

In the case of the East Asia, Japan and China could be to assume this role, given its economic importance in the region, letting other Asian countries have access to yen or yuan liquidity whenever they need to support their own currencies. The recent East Asian currency crisis has shown that Asian economic cooperation without common systematic and institutional establishments is useless once a crisis occurs. However, in order to introduce such a system and to make it work, political solidarity in the region is

[3] More concrete ideas about regional monetary and exchange rate systems have been intensively examined in Japan within the context of the internationalization of the yen since the latter part of 1997. In particular, in the report, 'Proposals for Coping with Asian Currency and Financial Crisis,' JETRO (1998) examines and compares various policy options available in the region such as a floating exchange rate system, the introduction of the ACU, and the use of regional currencies for international settlements. Its conclusion is that for the present time it would be most suitable for Asian countries to adopt a crawling peg type floating exchange rate system with the introduction of currency baskets on the basis of regional trade and industry structure. It adds that a common Asian currency unit is necessary together with an increased use of regional currencies for international settlement. .

[4] The ERM crisis in 1992-3 shows that even these EMS institutional frameworks were not sufficient to defend off the speculative attacks.

essential. In the case of Europe, the visions and the wills of political leaders were an essential ingredient in unifying Europe. Political solidarity is, however, very weak in East Asia compared to Europe. In this regard, the political solidarity of Japan with its neighbors is a problem. In this respect, the prospect for more concrete East Asian Monetary cooperation seems dim (Eichengreen, 1997). Japan and other East Asian countries should make their efforts to recover politically and socially mutual trust.

3.2.2. Asian Monetary Fund (AMF)

As we have experienced, however, when East Asian countries were attacked by international capital and were temporarily short of liquidity, it is not easy only to depend on the IMF or other international organizations as a lender of last resort. Thus, in order to avoid the detrimental effects of exchange rate crises due to unstable capital flows, East Asian countries must protect themselves. Liquidity is the key to self-protection (Feldstein, 1999).

A country with substantial international liquidity is less likely to be the object of a currency attack, and can defend itself better and make more orderly adjustments when it is attacked. However, no matter how much liquidity a country holds, this amount is dwarfed by the magnitude of international capital flows and a country alone cannot protect itself against the attack of international capital. The past experience also shows that crises, once they occur, tend to quickly spread within the region. In such a case, currency swap may be ineffective since some countries may be fearful of providing their neighbours with their reserves. Therefore, more concrete and regionally institutionalized system is necessary through which a ready source of international liquidity can be utilized to avoid regional currency crisis.

In this regard, Japan has proposed the setup of an Asian Monetary Fund of US $ 100 billion at the ASEM Finance Minister Meeting held at Bangkok in September 1997 just after the occurrence of Thai currency crisis in July 1997. However, the initial proposal for an Asian Monetary Fund received strong opposition from the US and the IMF. After then, Japanese Finance Minister Miyazawa announced again a plan, so-called the Miyazawa plan, to set up a US $ 30 billion support fund for Asian countries in his speech at the IMF-World Bank meeting in 1998. However, at the moment, it seems to be not easy for the idea of AMF to be realized considering the current international economic-political structures. Nevertheless, it seems a more institutionalized way worthwhile being reconsidered again to utilize the huge amounts of foreign reserves in the region to overcome the temporary shortage of liquidity in a certain country in the region and, as a result, to prevent currency crisis from occurring.

<Table 4>

Total Amounts of Financial Supports to Thailand, Indonesia and Korea

(US $ 1billion)

	IMF(A)	IBRD, ADB	Bilateral Supports(B)	Total(C)	A/C (%)	B/C (%)
Thailand 8/20/1997	4.0	2.7	10.5	17.2	23	61
Indonesia11/5/1997	10.1	8.0	18.0	36.1	28	50
Korea 12/4/1997	21.1	14.2	23.1	58.4	36	40
Total	35.2	24.9	51.6	111.7	31	46

Source: IMF(1999)

3.3 Long-term Agenda

As a long-term agenda, Asian Monetary Union could be proposed to create a regional monetary union, a final stage of monetary cooperation.

3.3.1. *Asian Monetary Union*

Economic Conditions for Monetary Union in East Asia.

So far, a number of studies on Asian monetary cooperation, including Bayoumi and Eichengreen (1994), Eichengreen and Bayoumi (1999), Frankel and Wei (1994), Goto and Hamada (1994), Kwan (1998) and Rhee (1999), have evaluated the economic conditions for regional monetary integration. There are various criteria to evaluate the conditions for monetary union in East Asia. These can be classified into two groups: One is a criterion based on the theory of optimum currency area, which compares the cost and benefit of a currency union and then recommends the participation in the currency union if the benefit exceeds the cost; and the other is convergence criteria that the EU has adopted.

Conditions for Optimum Currency Area

The theory of optimum currency area was pioneered by Mundell (1961) and developed by McKinnon (1963), and Kenen (1969). The theory suggests the following criteria to evaluate the conditions for monetary union: symmetry of shocks affecting countries in the region, factor mobility, openness and economic interdependence of member countries.

First, when shocks to the countries in the region are symmetrical, in an international perspective, they can be offset with a similar stance on monetary policy and the costs of giving up an independent monetary policy will be small. Empirical

studies on the symmetry of exogenous shocks on East Asian countries including Eichengreen and Bayoumi (1999), Kwan (1998), Goto and Hamada (1994), and Taguchi (1994) suggested that East Asian countries share as similar shocks as EU countries. In particular, the correlations of the trade structures of East Asian countries dividing into two subgroups revealed close to the corresponding figure of EU with the correlation coefficient of 0.52 for 11 EU countries[5]: the correlation coefficient for the first group including Japan and East Asian NIEs is 0.45 and that for the second group including ASEAN 4 and China is 0.46 (Kwan, 1998).

Second, if labor and capital mobility is high among the countries in the region, it will be easy to redress macroeconomic imbalances arising from asymmetric shocks and the costs of joining a monetary union will be small. Goto and Hamada (1994) show that migrations, mostly from less-developed ASEAN countries to the more industrialized NIEs, are extensive. Capital mobility is also high in East Asia. In 1998, the ratios of FDI inflow and outflow to the regional GNP in East Asia[6] of 1.56 and 1.74 percent respectively are higher than those of the EU[7] of 1.26 and 1.59 percent (Moon et. al., 2000). Although Japan has been the major source of the investment, recently the share of the NIEs is increasing.

Third, most East Asian countries have high degrees of openness. Compared to the EU whose degree of openness in terms of the ratio of trade to GDP is 17.2 percent in 1997, East Asia has a higher degree of openness of 37.6 percent. Economic interdependence in East Asia is also deepening through intra-regional trade and investment. The ratio of intra-regional trade to the total trade in East Asia is 51.0 percent in 1996, which is lower than in the EU of 62.6 percent, but the ratio of intra-regional investment to total FDI outflow is 64.9 percent in 1996, which is higher than the corresponding figure for the EU of 51.7 percent.

Convergence Criteria

The Maastricht Treaty sets out five economic and monetary convergence criteria that the member countries of the EU have to meet. The aims of these criteria are to maintain the union in the long run and to stabilize the value of the common currency. The results of applying the convergence criteria to East Asian countries are presented in <Table 5>, which leads to the comparison of macroeconomic conditions in Europe and East Asia.

Maastricht Treaty Convergence Criteria

[5] Germany, France, Italy, UK, Spain, Netherlands, Belgium, Denmark, Ireland, Greece and Portugal.

[6] East Asia includes Japan, Asian NIEs (Korea, Taiwan, Singapore), ASEAN 4 (Thailand, Malaysia, Philippines, Indonesia), and China.

[7] EU countries are 15 nations.

1. Price stability: an average inflation rate on the basis of CPI does not exceed by more than 1.5 percentage points that of, at most, the three best member countries
2. Low interest rate: the average long term interest rate should not exceed by more than 2 percentage points the interest rates, in, at most, the three best countries in terms of price stability.
3. Exchange rate stability: the currency has respected the normal fluctuation margins of the ERM, without severe tensions for at least two years (especially no devaluation on the initiative of the member country concerned)
4. Sustainable fiscal position: there is no excessive deficit. An excessive deficit exists if:
   A. The budget deficit is higher than 3 percent of GDP.
   B. The ratio of gross government debt to GDP exceeds 60 percent.

<Table 5> Macroeconomic Convergence of East Asian Countries (99-2003)[1)]

(%)

	Inflation Rate	Interest Rate[2)]	Rate of Change in Exchange Rate	Budget Surplus/ GDP	Public Debt/ GDP
Taiwan	0.97	4.09	0.67	-5.18	28.53
Malaysia	1.71	4.98	-0.61	-5.57	66.4
Singapore	0.50	3.9	0.85	5.02	93.4
Indonesia	10.83	8.57[3)]	-1.93	-0.59	45.2
Japan	-0.58	1.44	-2.0	1.81	113.8
China	0.93	2.75	0	-3.11	9.58
Thailand	1.18	4.33	0.30	-2.33	2.49
Hong Kong	-2.98	6.0	0.1	-2.1	8.37[4)]
Korea	2.68	6.57	-2.75	0.85	20.68

Notes: 1)Period average during the years of 1999-2003.
2) Treasury Bond Yield (10 years)
3) Time deposit (2 years)
4) Data of the year 2004.

Sources: International Financial Statistics and World Economic Outlook 2004 IMF, ADB Database, Bank of Korea, Bank of Japan and official statistics of Hong Kong and Taiwan

For inflation rates, the average inflation rate of the three countries with the lowest rates including Hong Kong, Japan and Singapore is -1.02 percent. No country meets the required level mainly because of negative inflation rates in Hong Kong and Japan during the period. Except negative inflation rates in Hong Kong and Japan, most countries except Indonesia meet the required level. However, considering the dynamics of East Asian economies, inflation rates in East Asia except Indonesia do not seem to be high. In fact, the average inflation rate of European countries was higher than that of East Asian countries in the 1980s and only recently became lower than the latter as the launch of the EU got closer (Kwan, 1998). In particular, after the crisis, the inflation rates show a declining trend in many East Asian countries including Korea.

In addition, all the East Asian countries except Taiwan and Malaysia meet the required level of budget deficits and their public debt is lower than 60% of GNP except Japan, Singapore and Malaysia. It can be concluded that most East Asian countries meet the fiscal criterion.

As for the financial markets, all the East Asian countries except Indonesia, Korea and Hong Kong meet the required level of long-term interest rates during the period of 1999-2003. However, in recent years, the long-term interest rate maintains at a low level in Korea. The volatilities of nominal exchange rates in East Asia seem not much varied except China and Hong Kong adopting *de facto* fixed exchange rate system.

As reviewed in the above, economic conditions, taking the OCA criteria and the Maastricht convergence criteria into account together, seem fulfilled to form an East Asian monetary union. Unlike Economic conditions, policy objectives, however, differ widely among East Asian countries, which can be an impediment to the road to monetary corporation. A more important obstacle to the road is that East Asia lacks political solidarity and cohesion. In fact, political distrust, the wide divergence in economic development, and the aspirations of Japan and China to become the dominating power in the region make the process of setting up an Asian monetary cooperation institution much more difficult than in Europe (Moon et. al., 2000).

Issues for Monetary Union in East Asia.

Under the free and massive movements of capital, simple monetary cooperation is not enough to cope with the unintended consequences of exchange volatilities and to prevent the crisis from re-occurring. To stabilize the exchange rates between regional currencies, a monetary union as a stronger form of cooperation could be desirable[8]. In such a case, concerning the formation of an East Asian Monetary Union, two issues must be addressed: first, which countries should be included; second, which currency should be chosen as a key currency.

Determination of Participating Countries

First, East Asian countries may not constitute the OCA as a whole but do at least

[8] The difference between cooperation and union lies in the fact that the latter is related to the giving up of some sovereignty. A small open economy is, amid the increasing tide of financial integration, facing the difficult choice between the giving up of some sovereignty of economic policy and the potential possibilities of currency crisis.

partially. In terms of OCA criteria, it has been suggested as one of proposals that Japan and East Asia NIES seem to constitute one optimum currency area, and ASEAN and China another one (Moon et. al., 2000). It has been also suggested, in the light of policy objectives, that Japan, Korea, Taiwan, and Malaysia constitute one bloc and the region including China, Hong Kong, Singapore and the Philippines comprise another (Kwan, 1998). Accordingly, in economic terms, it is more efficient to divide East Asia into subgroups of the bloc than to include all Asian countries as members of the union.

In political terms, it may be also difficult to set up a monetary union including all East Asian countries, given the economic, social and political heterogeneity currently existing among them. Therefore it may be more feasible to take the multi-track strategy in which a monetary union will be firstly established among some countries for which the union may be possible and then it will be extended to other countries, rather than the single-track strategy in which all the East Asian countries are joined in the union at once. It is argued that it seems appropriate for Japan and some of the East Asian NIES to begin with a union and eventually extend the cooperation to include China and the ASEAN countries (Moon et. al., 2000).

Determination of the Anchor Currency

So far, the East Asian region, according to studies including Frankel, Jeffrey and Shang-Jin Wei (1994), turned out to be a *de facto* dollar bloc mainly because East Asian countries continued to peg their national currencies to dollar. However, given that there is little room for small open East Asian countries to affect exchange rates among major international currencies, these countries should reduce the exposure of their economies to outside currencies to protect themselves. In order to reduce exposure, it would be desirable to increase the use of regional currencies in international transactions. To increase the share of regional currencies in the international settlement, the convertibility of each regional currency should be guaranteed not only in the current account transactions but also in the capital account transactions. The Japanese yen is the most liquid asset in the region and in this respect it is likely that yen may emerge as the regional settlement currency. But it would provoke much opposition to let yen play the role of a vehicle currency for fear of Japanese hegemony in the region. Accordingly, this option does not seem politically feasible In particular, a classical Triffin's dilemma may appear in the region as it has appeared in the world since a currency of a particular country, the US dollar, has been used as a key currency.

In this regard, it is suggested that a couple of East Asian currencies are used for the settlement of intra-regional trade. There is ample room for regional currencies to be used in the regional settlement. For example, Korea is running a current account surplus vis-à-vis China and South East Asia, hence the settlement of trade between Korea and these countries can be made in Korean currency. Also Chinese currency can be used in the settlement of trade between China and its trading partners against which China has a current account surplus. The increased use of regional currencies in the settlement of trade will be helpful in determining the key currency if Asia is to ultimately create an East Asian monetary union (Moon et. al., 2000).

The other alternative is to resort to multiple currencies through a currency basket rather than a single currency. The basket, which may be called Asian Currency Unit

(ACU), could be constructed on the basis of regional currencies, This was, in fact, same as European Currency Unit (ECU) in the European Monetary System. The ECU was a basket composed of regional currencies. This option leads to further economic policy coordination and cooperation. More importantly, it can alleviate the fear of Japanese dominance and the opposition to a yen based monetary union. This option is, as a consequence, also helpful for attracting the participation of more Asian countries than a yen bloc idea.

IV. Summary and Conclusions

The financial and economic crisis of 1997-98 came as a dramatic shock to the economies of East Asia. Their frailty in the context of globalised trading and financial markets was thoroughly exposed. In order to prevent such an outcome happening to the same extent in the future it is a worthy exercise for these nations to contemplate greater cooperation between them in the context of monetary and exchange rate policy. This paper has explored possible options available to these economies such as the establishment of an Asian Exchange Rate Mechanism as well as an Asian Monetary Union, following the example of the EU countries. Attaining such lofty objectives will not be easy in the context of regional economies with deep seated animosity and mistrust of each as a historical legacy. However, there are tangible gains to be had if progress can be made in this direction. Key to this will be the political will of regional governments, many of whom, however, still perceive competition with regional neighbours rather than cooperation as the way forward.

With the growth of international financial markets the small open economies of East Asia are at the mercy of changes in investor confidence. This paper suggests that closer cooperation offers a way forward to reduce the adverse effects of such development on regional exchange rates and economies. The US dollar and Euro zones will exert a dominant influence on the future development of the global trading and financial system. For East Asia to be a player in this game will likely require greater regional cooperation in the trade and finance areas.

The experience of the EU is that such a momentous journey can be achieved. It will require political commitment, it will require a gradual and patient movement towards greater economic and monetary integration, and it will also require the necessary adjusment mechanisms to avoid the adverse effects arising from asymmetric shocks. Failure to achieve the necessary developments in these areas will confine the whole exercise, however, to failure.

Medium and Long-term Agendas for Monetary Cooperation in East Asia

	Exchange Rates Stabilization	***Emergent Liquidity Supply***
Short-term	**Cooperative Intervention** Regional Exchange Rate Stabilization through Macroeconomic Policy Coordination	**Currency Swap** Emergent Liquidity Support [1)]
Medium-term	**Asian Monetary System (AMS)** Institutionalization of Regional Exchange Rate Stabilization with *Asian Exchange Rate Mechanism (ARM)* *Asian Currency Unit (ACU)* *Short-term Loan Facility (SLF)*	**Asian Monetary Fund (AMF)** Lender of Last Resort Regional Surveillance Function
Long-term	**Asian Monetary Union (AMU)** Creation of Regional Monetary Union	

Note: 1) almost completed by CMI

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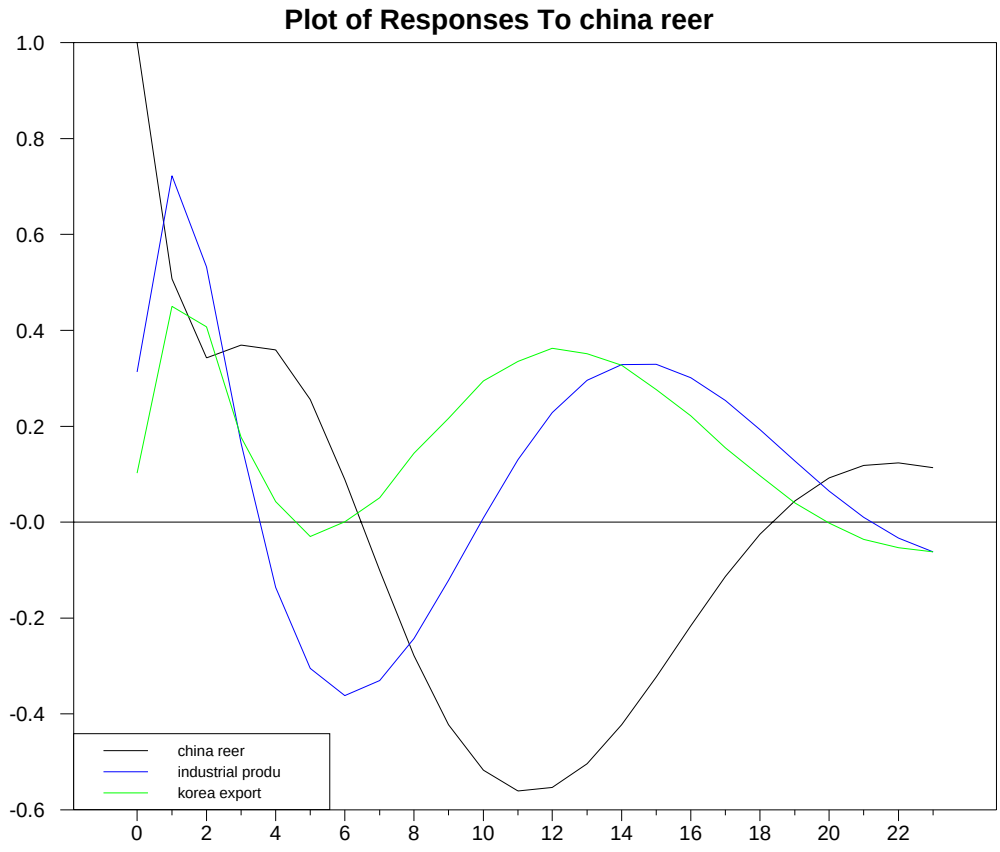
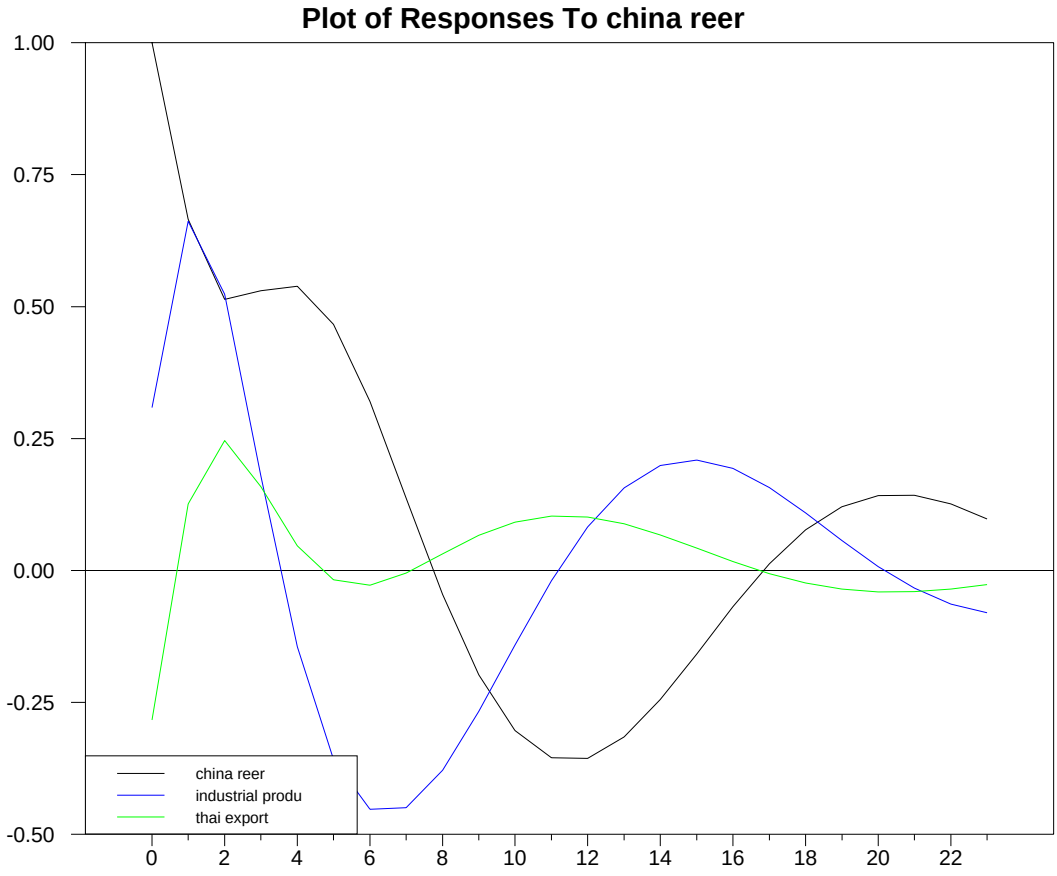
<Appendix>

<Figure 1> Impulse Responses of East Asian Countries' Export to Chniese Yuan




Plot of Responses To china reer
1.00
0.75
0.50
0.25
0.00
-0.25
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16
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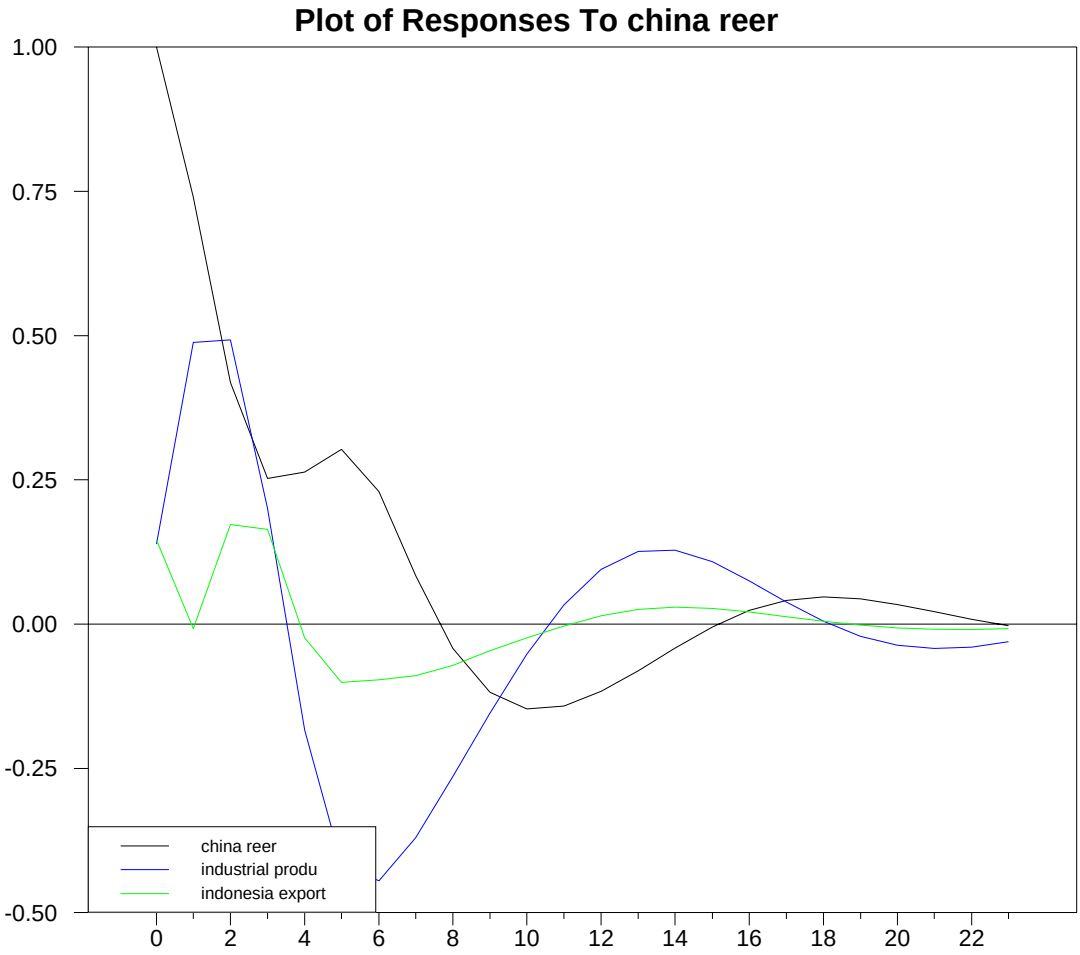
china reer
industrial produ
thai export


Plot of Responses To china reer
1.00
0.75
0.50
0.25
0.00
-0.25
-0.50
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2
4
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16
18
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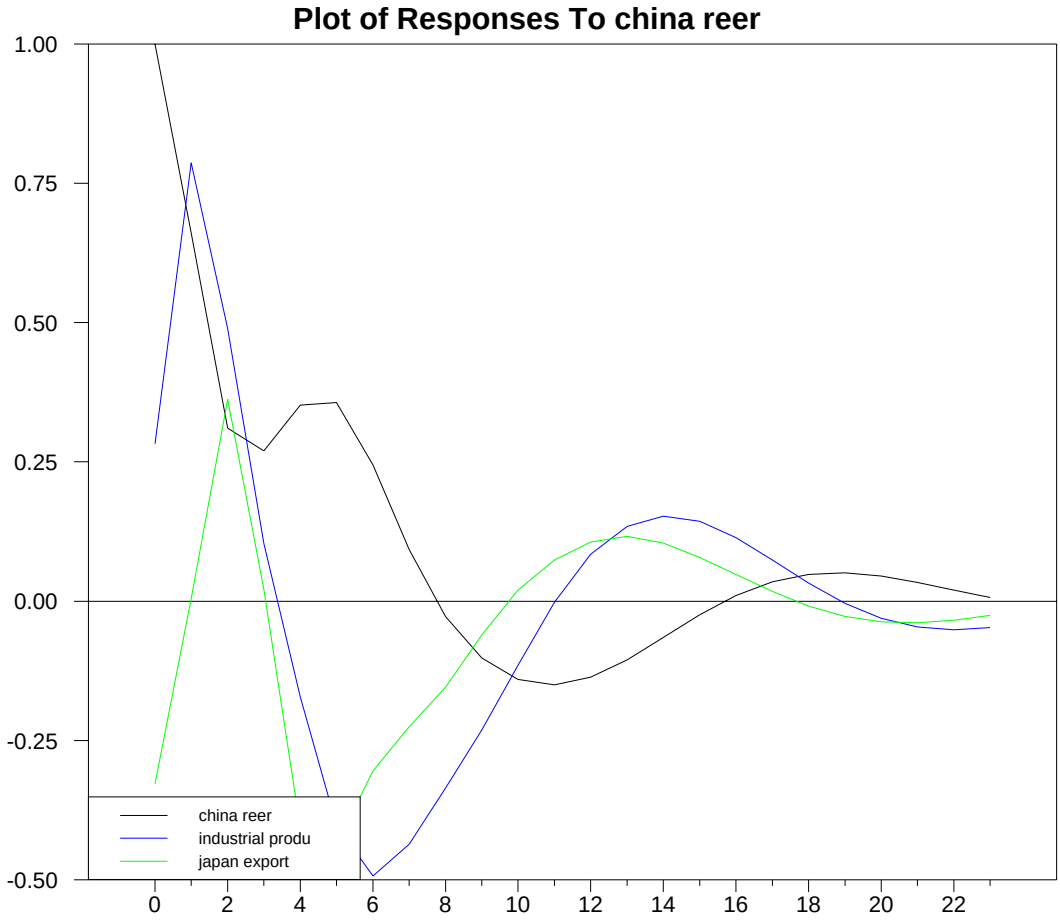
22
china reer
industrial produ
indonesia export



<Table 1> Unit Root Test Results

	1990.1-1997.6	1998.7-2003.12
ln(won/ssf)	-3.093(-3.46)	-2.022(-3.48)
ln(baht/ssf)	-1.898(-3.46)	-3.001(-3.48)
ln(rupiah/ssf)	-1.957(-3.46)	-2.820(-3.48)
ln(dollar/ssf)	-1.935(-3.46)	-0.968(-3.48)
ln(yen/ssf)	-1.740(-3.46)	-2.707(-3.48)

Note: ADF test including constant and trend
Statistics in brackets denote 5% critical values

<Table 2> Johansen Cointegration Test Results

		Hypothesized No. of CE(s)	1990.1-1997.6	1998.7-2003.12
		None		
ln(won/ssf)	ln(dollar/ssf)	At most 1	38.450(34.91)	36.895 (34.91)
ln(yen/ssf)			14.647(19.96)	13.200(19.96)
		None		
ln(baht/ssf)	ln(dollar/ssf)		33.121(34.91)	33.937(34.91)
ln(yen/ssf)				
		None		
ln(rupiah/ssf)			23.123(29.68)	26.936(29.68)
ln(dollar/ssf)	ln(yen/ssf)			

Note: Likelihood Ratio.
Statistics in brackets denote 5% critical values