Corners Hypothesis and the Proposals on Foreign Exchange System for East Asia: A Perspective from the Incompatible Trinity

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Abstract:

This paper theoretically analyses the proposals on foreign exchange system for the East Asia region. We argue that, in spite of the diversity of the proposals as they appear, they are rooted from two ideologies: the corners hypothesis and the intermediate regime. Taking free capital mobility as primary fact, the Mundell's Incompatible Trinity would predict that the intermediate regime is not sustainable and that hard pegged exchange rate regimes: yen bloc, dollar bloc and monetary union are feasible options for regional exchange rate stability. We challenge this prediction on two grounds. First, the strict condition in the Mundell's Incompatible Trinity that forces the country to select macroeconomic goals only at its extreme corner that is perfect capital mobility, complete exchange rate stability, or comprehensive domestic monetary autonomy, may not be applicable in practice. Second, by assuming perfect capital mobility as primary fact, the corners hypothesis limits the country's sovereignty in freely moving to different corners. The recent global financial crisis increases the possibility that the corner will shift toward the exchange rate stability or domestic monetary independence corners. In such case, the focus on foreign exchange policy may shift to capital controls.

JEL Classification Codes: F31, F36, N15, N25

Keywords: exchange rate regime; Mundell's Incompatible Trinity, corners hypothesis; intermediate regime; East Asia

INTRODUCTION

Increasing macroeconomic linkages arising from deeper trade and investment integration intensify the necessity for intraregional exchange rate stability, which is suited to the export-led growth of Asian development model. Meanwhile, deepening integration of financial markets in East Asia as the results of the deregulation of domestic financial markets, the opening of financial services and the liberalization of capital accounts exposes East Asian economies to the risks that come with volatile international capital flows. Massive and swift movements of speculative short-term capital flows magnify exchange rate volatility. It thus becomes more difficult for the monetary authorities, particularly those of small developing countries, to stabilise foreign exchange rates in order to sustain the countries' competitiveness and exports. Amidst this complicated situation, there is increasingly interest in monetary integration in the East Asian region, particularly after the 1997 Asian financial crisis.

Monetary integration is defined as cooperative arrangements in exchange rates and/or monetary policy in a region (Asian Development Bank 2005). Despite the progress of initiative in financial cooperation such as policy dialogue and surveillance mechanism, liquidity support facility, financial system strengthening, and Asian bond market development, there is no clear regional initiative in monetary integration beyond conducting studies on the feasibility of having a common monetary policy and foreign exchange system for East Asia (Asian Development Bank 2005). Even worse, in spite of increasing research on suitable foreign exchange system for the East Asia region, the results are inconclusive. Focusing on ASEAN+3 countries, the most potential group to participate in regional cooperative arrangements in exchange rates and/or monetary policy, the objectives of this paper are three folded. First, we investigate the proposals on foreign exchange system for the East Asia region that have been under debates in academic and political spheres. Second, following Frankel's classification of foreign exchange regimes (Frankel 2003), we put each proposal along the continuum that arrays from free floating to most rigidly fixed and attempt to group the proposals based on the ideologies that underlie them. We are able to identify that these proposals are rooted from two schools of thought: the corners hypothesis and the intermediate regime that can be put in the framework of Mundell's Incompatible Trinity for deeper analysis. Using the Mundell's Incompatible Trinity, the conventional open-economy macroeconomic model stating that macroeconomic goals of exchange rate stability, free capital mobility and domestic monetary independence are mutually incompatible, our third objective is to theoretically analyse the proposals on suitable foreign exchange system for the East Asia region.

This research is a conceptual work. It presents framework that clarifies ideologies behind the proposals on foreign exchange system for East Asia. Amidst increasing literatures and debates on the issue, the proposals are elaborated and thus appear to be increasingly complex and diverse. With a variety of ideas that has been added up and diversified, debates on the issue become more complicated. This paper examines and theoretically analyses the proposals on foreign exchange system, then classifies and presents them in the diagram that is easy to understand. In doing so, we simplify debates on regional foreign exchange policy coordination in East Asia, enhancing public understanding on the issue. Hopefully, increasing public understanding on regional policy debates will catalyst the process of monetary integration, not only by gaining more public attention on the issue, but also by inspiring more challenging research on the topic. The experience of monetary integration in the East Asia region will also provide a case study to other regions such as Western Africa or Latin America that might follow similar process in the future.

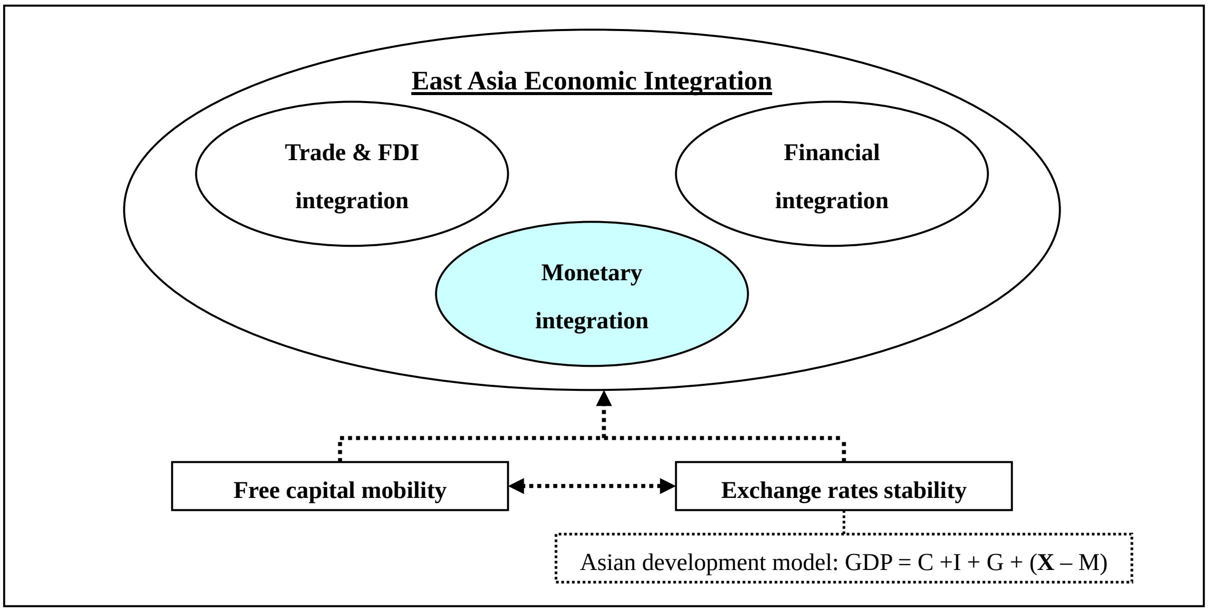
The paper is organized as follows. Section 2 presents background of macroeconomic fundamentals and foreign exchange systems of ASEAN+3 countries. Deepening economic and financial integration leading to the argument for regional exchange rate stability is also discussed in this section. In Section 3, the proposals on foreign exchange system for achieving exchange rate stability in the East Asia region, including US dollar-pegging bloc, yen bloc, intermediate regime and monetary union, are examined. In Section 4, using the framework of Mundell’s Incompatible Trinity, the aforementioned proposals are analysed theoretically and the main results are discussed. Section 5 concludes the paper.

ECONOMIC AND FINANCIAL INTEGRATION IN THE EAST ASIA REGION

Since the 1997 Asian financial crisis, we have witnessed moves to increase monetary and financial cooperation, particularly among ASEAN+3 countries, in many areas such as information exchange and policy dialouge, a regional liquidity support facility, and efforts to develop regional bond markets (Asian Development Bank 2005). Due to this progress of regional cooperation, East Asia region in this study focuses on ASEAN+3, including the People’s Republic of China (PRC), Japan, South Korea, and ASEAN economies, which comprise of 10 official members of ASEAN (Brunei, Cambodia, Indonesia, Loas, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam). Because of less fitness of Myanmar in terms of economic openness, regional cooperation and data availability, Myanmar is excluded from our analysis.

Measuring in terms of bilateral trade flows among countries, East Asia’s intraregional trade share rose remarkably from 37% in 1985 to 52% in 1995, and 55% in 2005 (Kawai 2008). Even though East Asian’s intraregional trade share is still lower than the figure of the European Union (EU) that is 62% in 2002 (Lamberte 2005), deepening economic integration in East Asia through trade is increasingly prominent in the last two decades, especially trade between China and Japan and the middle-income ASEAN countries (Kenen and Meade 2008). As demand for products within East Asia continues to growth, the dependence on regional markets is expected to increase further. On the contrary, the increasing shares of intraregional portfolio investment, long-term debt securities investment, and equity securities investment in East Asia region are less evident. Share of East Asia’s intraregional portfolio investment increased only slightly from 4.6% in 2002 to 5.7% in 2004 and that of intraregional equity securities investment increased from 9.8% in 2002 to 12.3% in 2004 while that of long-term debt securities investment actually declined from 2.9% in 2002 to 2.6% in 2004 (Kawai 2008). Relative to trade integration, financial integration has been lagging. The reliance on export-led growth development model of East Asian countries means that exchange rate policy of individual country in the region is usually geared towards maintaining external competitiveness and boosting the country’s exports and growth. In this view, East Asian countries, particularly in the pre-crisis period, had targeted the US dollar and kept their currencies undervalued. As one country’s exchange rate adjustment can have serious, competitive implications for neighboring economies, the need for coordination on exchange rate policies is more pronounced. Regional policy coordination may also help contain crisis contagion and economic spillovers that tend to be concentrated and significant within the region (Kawai and Motonishi 2005). Growing economic integration, deepening macroeconomic linkages, and more opened financial markets and capital account liberalization make intraregional exchange rate stability across the East Asia region increasingly necessary and desirable. Figure 1 presents the framework that explains the logic of having cooperative arrangements in exchange rates in the East Asia region.

Figure 1: Logic for cooperative arrangements in exchange rates in the East Asia region



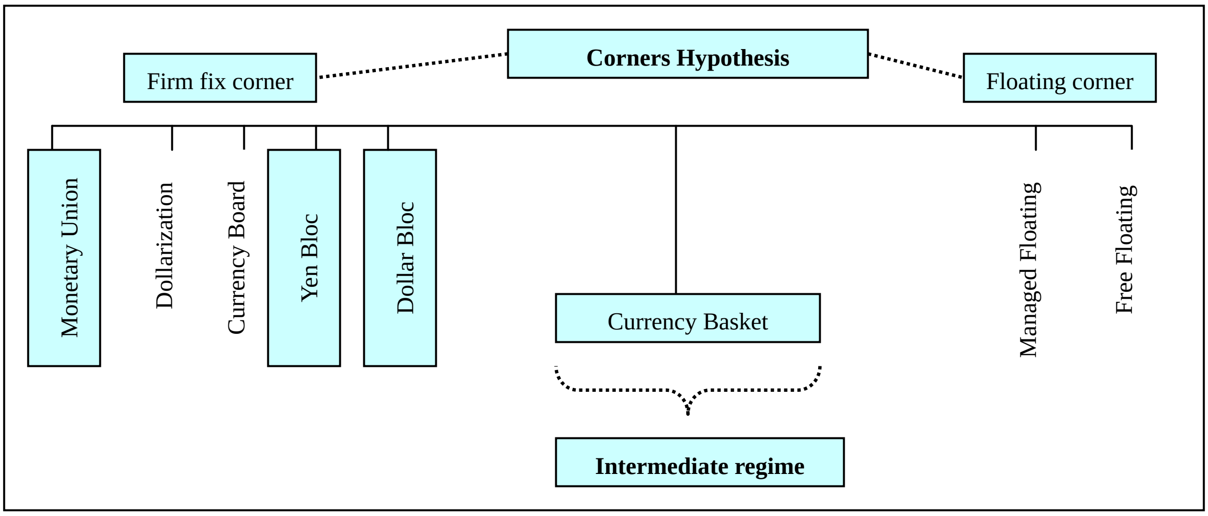
In spite of the need for intraregional exchange rate stability, exchange rate regimes in East Asia region remain diverse and uncoordinated with the two superpower countries, Japan and China, being in the opposit polars. Japan has implemented free floating foreign exchange regime with the Bank of Japan intervened in the foreign exchange markets periodically and sometimes quite heavily in the past. Such intervention has not been conducted by the Bank of Japan since March 2004 (Kawai 2008). China has kept its exchange rate tightly with the US dollar with the official rate of RMB8.28 to the US dollar. The exchange rate regime was modified on July 21, 2005. Since then, renminbi has become more flexible. It appreciated to RMB7.53 to the US dollar in September 2007, and stood at RMB7.118 to the US dollar in February 2008 (Goldstein and Lardy 2008). Because renminbi still has a strong link to the US dollar even after the announced change in the foreign exchange regime, Gudmundsson (Gudmundsson 2008) cliams that tightly managed US dollar-based regime is the current de fecto foregin exchange regime of China. Korea implements the de facto managed float with small foreign exchange rate fluctuations in the post-crisis. Based on the International Monetary Fund’s Annual Report on Exchange Arrangements and Exchange Restrictions in 2005, Brunei implements the currency board system with the Singapore dollar, Philippines declares the implementation of independent floating foreign exchange regime, Cambodia, Indonesia, Laos, Singapore, Thailand and Vietnam are under managed floating foreign exchange regimes, and Malaysia sticks to the US dollar peg until July 2005. Even though the foreign exchange regimes of these countries are declared to be flexibility, Kawai (Kawai 2008) argues that exchange rate behavior of many countries in East Asia resembles a managed float or a peg. The Philippines is classified as an independent floating regime but exhibits small foreign exchange rate fluctuation that is close to the average for the managed floating regime. Indonesia has significantly higher exchange rate fluctuation than other countries that implement managed floating regime. Vietnam seems to have been more pegged to the US dollar than a managed floating regime. Thailand and Singapore are managed floating foreign exchange regimes with small foriegn exchange rate fluctuations while Cambodia and Loas, though under the same regime, show relatively larger exchange rate fluctuations.

Not only the diversity of exchange rate regimes in the East Asian region that range from hard peg to free floating is the impediment to cooperative arrangements in exchange rates in the region, but the differences in economic size, the differences in domestic governance, the lack of political willingness, as well as the institutional deficit (lack of supranational institutions) are likely to limit the extent of monetary integration in the region. At present, there is no precise regional initiative in exchange rates or monetary policy arrangements beyond conducting studies on the feasibility of having a common monetary policy and foriegn exchange system for East Asia. For instance, the feasibility study of a common currency system by the ASEAN governments in 1998 (Bird and Rajan 2002) and the Kobe Research Project on the feasibility and merits of an Asian Monetary Union by the Asia- Europe meeting of finance ministers (Asia Development Bank 2002). In spite of increasing literature on a suitable foreign exchange system for East Asia (for instance, (Kawai 2008), (Kwack 2004; 2005), (Kwan 1994; 1998; 2001), (Ogawa and Ito 2002), (Williamson 2000)), the results are still inconclusive.

PROPOSALS ON FOREIGN EXCHANGE SYSTEM FOR THE EAST ASIA REGION

Up to now, various proposals on the foreign exchange system for the East Asia region have been presented. Following Frankel's classification of foreign exchange regimes (Frankel 2003), we put each proposal along the continuum that arrays from free floating to most rigidly fixed. Three broad categories of foreign exchange regimes: floating corner, intermediate regime, and firmly fixed corner, can be grouped under two schools of thought, the corners hypothesis and the intermediate regime, as presented in Figure 2.

Figure 2: Proposals on foreign exchange system for the East Asia region



The first school of thought that underlies the proposals is the corners hypothesis (for instance, (Fischer 2001) and

(Mussa *et al.* 2000)). Taking the argument that the re-occurrence of crises in the late 1990s confirms the nonviability of intermediate regimes (e.g. crawling peg, basket peg, or adjustable peg) such as those followed in the crisis countries, this school of thought asserts that emerging economies should be opting either for full flexibility of exchange rates or for rigid fixed exchange rates to minimize the frequency and severity of futures crises. On such point, Fischer (Fischer 2001) argues by using empirical evidence based on the IMF's Annual Report on Exchange Arrangements and Exchange Restrictions that the fraction of IMF member countries following intermediate regimes dropped from 62% (98 countries) to 34% (63 countries) between 1991 and 1999. The fraction with hard peg regimes rose from 16% (25 countries) to 24% (45 countries), while the fraction with floating regimes increased from 23% (36 countries) to 42% (77 countries). On one hand, we witness the switch of foreign exchange regimes in the crisis-hit countries including Korea, Indonesia, and Thailand from US dollar peg or band arrangement to managed floating regime. On the other hand, another crisis-hit country, Malaysia, adheres to US dollar peg with the imposition of controls to help managing capital flows.

With low inflation, sound fiscal policies and strong dignity in national sovereignty, the motive of East Asian countries to adopt dollarization is rather low. Except former colonies, Hong Kong and Brunei, the adoption of currency board system is unlikely to happen in other East Asia countries. The proposals on foreign exchange system for the East Asia region based on the corners hypothesis, therefore, focus on US dollar-pegging bloc (McKinnon 2000a; b; 2004; 2005), yen bloc (Kwan 1994; 1998; 2001), and monetary union ((Kuroda 2004) and (Kwack 2004; 2005)). Whereas the decision on adopting yen bloc or dollar bloc is made unilaterally by the authorities of a single country, a full-fledged monetary union needs a collective decision of the countries in the region.

With the thesis of 'fear of floating' and 'revived dollar standard', McKinnon (McKinnon 2000a; b; 2004; 2005) asserts that East Asia economies would be better served by providing certainty for investors and businesses by pegging their currencies to the dollar in the near term, and possibly creating a regional currency such as an Asian Euro, which could float freely against the dollar, in the longer term. Despite declining trade both in terms of exports and imports of East Asian countries with the U.S., McKinnon argues that the voluntary use of the US dollar as the currency of choice for invoicing East Asia trade and capital flows and the holding of the private foreign financial claims and official exchange reserves in highly liquid dollar assets are important factors for the decision of East Asian governments to stabilize their dollar exchange rates. Therefore, macroeconomic stability in East Asia as a whole would be greatly enhanced by forming a US dollar-pegging bloc or creates a common monetary standard based on the US dollar if Japan could narrow the range of variation of the yen/dollar rate and China succeeds in maintaining its rate at RMB8.28 to the dollar. Kenen and Meade (Kenen and Meade 2008) point out that McKinnon concedes the fact that the Asian dollar standard cannot survive unless Japanese and American governments agree to stabilize the yen-dollar exchange rates. (Ho *et al.* 2005), however, argue that while movements in the dollar/yen remain the main influence on Asia currencies, the role of the renminbi seems to be increasing. They find the empirical results that do not support the conventional wisdom that Asian currencies have gravitated back towards a US dollar bloc since the Asian crisis.

Kwan (Kwan 1992) argues that, given a widely fluctuating yen-dollar rates, pegging to the US dollar was no longer consistent with macroeconomic stability in Asian countries. These countries should peg closer to Japanese yen by targeting a basket of currencies in which yen carries a substantial weight. Later, ‘yen bloc’ is the term used in referring to a grouping of countries that use yen as an international currency and that maintain stable exchange rates against yen (Kwan 1994; 1998). With deepening economic interdependence between Japan and its Asian neighbors, changing economic situation (e.g. the onset of the 1997 Asian currency crisis, the introduction of the euro), the implementation of Japan’s financial reform, and the shift of Japanese government’s stance from passive to active on the internationalization of yen, Kwan asserts that a change in foreign exchange rate regimes of Asian countries to closely link to Japanese yen will reduce the exchange rate risk associated with yen-denominated transactions and in turn promote wider use of yen as a regional currency, paving the way for the formation of a yen bloc. Due to the fact that each country in East Asia has different trade relation to Japan, Kwan (Kwan 2001) suggests that the weight assigned to yen should be high for countries that are in competition with Japan (Korea, Taiwan, Singapore, and Hong Kong) but low for those countries whose trade structure is complementary to that of Japan. He claims that low inflation and high income countries such Singapore, Taiwan, Malaysia, Thailand, and Korea are appropriate candidates for a yen bloc while other countries can join later. Although some economists (e.g. (Ito *et al.* 1998) and (Ogawa and Ito 2002)) argue for giving a higher weight to Japanese yen in non-Japan currency basket systems of East Asia countries, many economists (e.g. (Ito 1994), (Kawai and Akiyama 2000), and (Dornbusch and Park 1999)) regard that the pegging to Japanese yen is not feasible, giving many reasons such as the limited size of Japan as an export market for East Asia and the yen as an unreliable anchor.

The full-fledged monetary union requires close policy coordination among the authorities of countries in the East Asia region for creating a cooperative system similar to the European Monetary Union (EMU). Given that economic convergence among the East Asian economies is not sufficiently advanced and that political relationships are not sufficiently mature to support the creation of tightly coordinated regional system, Kwack (Kwack 2005) argues that the formation of monetary union is the long-term goal for the East Asia monetary integration. In spite of increasing literature that tests whether Asian countries satisfy the optimum currency area (OCA) criteria, the results are controversial. Finding that the East Asian countries adjust more rapidly to both demand and supply shocks than do the EU countries, Bayoumi and Eichengreen (Bayoumi and Eichengreen 1994) conclude that East Asia comes as close as the European Union to being an optimum currency area. The subsets of Asian countries come even closer to being optimum currency areas: a Northeast Asia bloc comprising Japan, Korea, and Taiwan, and a Southeast Asian bloc comprising Hong Kong, Indonesia, Malaysia, Singapore, and possibly Thailand. The empirical results (e.g. (Eichengreen and Bayoumi 1999), and (Shirono 2007)) suggest that East Asian countries are a plausible candidate for a currency union and that a currency union of East Asia economies will generate a net welfare gain for most member countries. Several other studies (e.g. (Bayoumi and Mauro 1999), (Kawai and Takagi 2005) and (Lee *et al.* 2004)) have reached similar conclusions. On the contrary, Chow and Kim (Chow and Kim 2003) find that Asian countries face asymmetric shocks, thus a common currency will be costly for East Asia region.

For the near term, Kwack (Kwack 2005) proposes the establishment of quasi-monetary union that comprises of flexible exchange rate systems with intervention and flexible inflation targets. Based on his proposal, individual country still retains control over their foreign exchange rates, while cooperative coordination is undertaken to attain common exchange rate, monetary policy, and financial objectives with the flexible inflation target that takes into account the exchange rate conditions as well as the level of output. Taking a leading role in promoting economic development in the Asian region, Asian Development Bank laid down the road map for Asian monetary union. Considering the fact that countries in the region are at very different stages in terms of real and nominal convergence to agree on the goal of monetary policy and the lack of more efficient and better integrated financial systems to accommodate foreign exchange risk hedging that is necessary in the near term before the region achieves exchange rate stability, Asian monetary union is expected to happen decades away (Kuroda 2004). On this issue, Kawai (Kawai 2008) and Frankel (Frankel 2003) suggest a multi-track, multi-speed approach, whereby economies ready for deeper policy coordination begin the process while others prepare to join later. Another obstacle in establishing Asian monetary union is the difficulty in reaching agreement on the composition of the policy making body for Asian supranational institutions such as a regional central bank as pointing out by Kenen and Meade (Kenen and Meade 2008) that an Asian monetary union could not readily include Japan without including China and could not readily include China without including Japan.

The second school of thought that underlies the proposals on foreign exchange system for the East Asia region is the intermediate regime. After the 1997 Asian financial crisis, the corners hypothesis that predicts the vanishing of intermediate regime was rapidly adopted as the new conventional wisdom. Nevertheless, Frankel (Frankel 2003) strongly argues that the arguments including the principle of the Impossible Trinity, the dangers of incurring large unhedged dollar liabilities abroad, and the political difficulty of exiting a target arrangement lack theoretical rationale for the superiority of the corners hypothesis over the intermediate regimes. Masson (Masson 2001) runs statistical test and rejects the hypothesis that firm fix and floating regimes are taking over, thus concludes with empirical evidence that intermediate regimes are not in fact vanishing.

Because of diversified patterns of trade and investment in Asian countries, a common basket peg is suggested as a solution for these economies to achieve exchange rate stability. Kenen and Meade (Kenen and Meade 2008) identify two types of common basket peg: an external basket containing only the currencies of outsiders such as US dollar and euro, and an internal basket containing the currencies of the participating countries. If countries agree to adopt a common external basket and thus undertake to stabilize their national currencies within a band surrounding the target value of that basket, each participating country will then limit fluctuations in its domestic-currency value of the external basket. When each of them limits fluctuations in its domestic currency value of the external basket, Kenen and Meade (Kenen and Meade 2008) argue that these countries will also limit fluctuations in the relative values of their own national currencies. Under such circumstances, participating countries import to some degree the monetary policies of the countries that their currencies are pegged to. By adopting an internal basket, the participating countries will stabilize within limits the values of their countries' currencies vis-à-vis the other currencies in the internal basket but their currencies will float jointly against the other key currencies. Because of the distinguishing features of an internal basket that are its inability to stabilize member countries' currencies vis-à-vis the key currencies and the absence of an anchor for monetary policy, Kenen and Meade (Kenen and Meade 2008) assert that a common external basket is superior to a common internal basket of Asian countries decided to adopt a common basket. Nevertheless, the empirical evidence on this issue is less clear. Assuming that nine Asian countries adopt a common external basket comprising the dollar, euro and yen, Williamson (Williamson 2005) concludes that this regime tends to stabilize substantially the nominal effective exchange rates for eight of the nine countries (the exception being Singapore). Presupposing that all of the ASEAN+3 countries adopt a common internal basket, a study of Ogawa and Shimizu (Ogawa and Shimizu 2006) suggests that the regime imparts more stability to the nominal effective exchange rate in five of the seven country cases (the exception being China and Malaysia).

The common basket peg can be viewed as a permanent foreign exchange policy arrangement for the East Asia region or a way on the road to Asian monetary union. A variety of proposals on a common basket peg in East Asia has been presented (e.g. (Ogawa and Ito 2002), (Williamson 1999; 2000), (Dornbusch and Park 1999), (Kwan 1998; 2001), and (Kawai 2008)). Williamson (Williamson 1999; 2000) proposes the creation of a regional common unit of account, called the Asian Currency Unit (ACU) by constructing a common basket peg among currencies of ASEAN+3 to reduce volatility and currency risk in the region. He argues that ACU could become an invoice currency in trade, gaining the status of a medium of exchange as well as that of a store of value in the future. Starting from the idea that each Asian country pegs its currency closer to Japanese yen by targeting a basket of currencies in which yen carries substantial weight taking into consideration its trade relations with Japan as the first stage, Kwan (Kwan 2001) envisages ACU as the second stage for regional cooperation on foreign exchange policies, in which Asian currencies are pegged to ACU but floated jointly against the dollar and other major currencies.

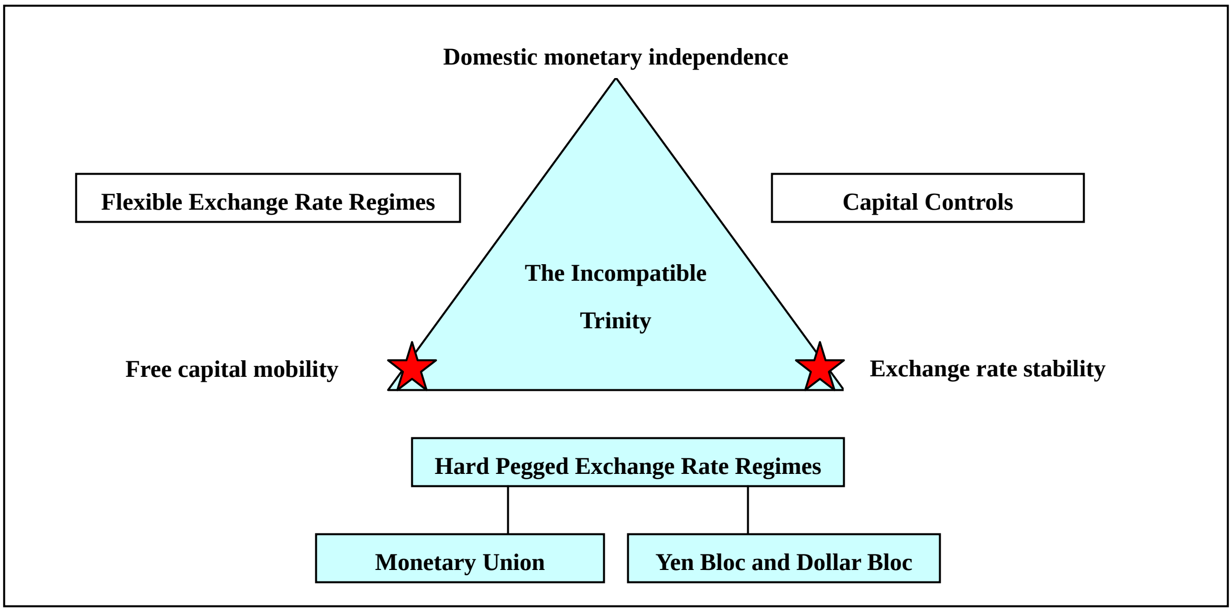
Given that economic convergence among the East Asian economies is not sufficiently advanced and that political relationships are not sufficiently mature to support the creation of a tightly coordinated regional system, Kawai (Kawai 2008) supports the creation of a common currency basket. Using a currency basket as a monetary policy anchor, he argues that East Asia currencies can collectively move vis-à-vis the US dollar while maintaining intraregional rate stability. Due to the reasons such as the declining power of yen in the 1990s in the Japan's lost decade following the bubble burst, the limited convertibility of Chinese renminbi that limits its role for international settlement, financing and liquidity holding, and too small size of other East Asian economies to take an international role, Kawai (Kawai 2008) concludes that a currency basket is the suitable option for establishing a mechanism for intraregional exchange rate stability in the East Asia region. By relying on external nominal anchor with the adoption of a G3 (US dollar, Euro, and Japanese Yen) or G3+ (US dollar, Euro, Japanese Yen, emerging Asian currencies), the common basket peg can be implemented immediately as a substantial degree of policy coordination is not required. Because a move to ACU requires a high degree of policy coordination for intraregional exchange rate stabilization, it can be established at the latter stage.

By examining the proposals on foreign exchange system for the East Asia region along the continuum of Frankel's classification of foreign exchange regimes (Frankel 2003), the analysis of ideologies that underlie each proposal enables us to classify these proposals based on two schools of thought: dollar bloc, yen bloc and monetary union that have the foundation in firm fix corner of the corners hypothesis and a common currency basket that is rooted from the intermediate regime.

CORNERS HYPOTHESIS AND THE PROPOSALS ON FOREIGN EXCHANGE SYSTEM FOR EAST ASIA : A PERSPECTIVE FROM THE INCOMPATIBLE TRINITY

Since its development in the early 1960s, the Mundell's Incompatible Trinity (Mundell 1961) has been the main workhorse of open-economy macroeconomics analysis. It states that macroeconomic goals of exchange rate stability, free capital mobility and domestic monetary independence are mutually incompatible. Placing each economic goal at the corner of a triangle, as shown in Figure 3, makes the concepts of the Incompatible Trinity become more apparent. A small open economy can choose to stand on just one side of the triangle and implement a specific foreign exchange policy to achieve two macroeconomic goals simultaneously. Following the model, three options are available to a country. First, the country can choose to have exchange rate stability while maintaining domestic monetary autonomy. In such case, it is necessary that the foreign exchange policy of capital controls is implemented. If the country chooses the second option and prefers to let capital flows freely across borders while having domestic monetary independence, flexible exchange rate regimes will have to be followed. The last option is that the country implements hard pegged exchange rate regimes if macroeconomic goals of free capital mobility and exchange rates stability are its priority. The country therefore relinquishes its ability to conduct the monetary policy for solely targeting internal balance.

Figure 3: Corners hypothesis and the proposals on foreign exchange system for East Asia: a perspective from the Incompatible Trinity



From the perspective of Mundell's Incompatible Trinity, intermediate exchange regimes are not sustainable. A small open economy can only choose among foreign exchange policies of capital controls, flexible exchange rate regimes, or hard pegged exchange rate regimes. Because the corner hypothesis firmly adheres to the assumption that free capital mobility is endogenous or primary fact, it leaves no room for the foreign exchange policy of capital controls. By pinning on the free capital mobility corner of the Mundell's Incompatible Trinity, the possible choices for a small open economy can be either fully flexible or hard pegged exchange rate regimes, as seen in Figure 3. Applying this concept to the context of foreign exchange system for the East Asia region, the corners hypothesis limits the policy option to hard pegged exchange rate regimes so as to achieve regional exchange rate stability. This comes at a cost to individual country as giving up domestic monetary independence is required for achieving exchange rate stability in the setting of free capital mobility. In the light of such argument, the proposals on foreign exchange system for the East Asia region is scoped down to the firm fix corner of Frankel's classification of foreign exchange regimes (Frankel 2003) that are US dollar-pegging bloc, yen bloc and monetary union.

Two arguments are taken against the corners hypothesis in analyzing the proposals on foreign exchange system for the East Asia region. First, the strict condition in the Mundell's Incompatible Trinity that forces the country to select macroeconomic goals only at its extreme corner, that is to say to have perfect capital mobility, complete exchange rate stability, or comprehensive domestic monetary autonomy, may not be applicable in practice. Frankel (Frankel 2003) forcefully argues that this is not the same thing saying one cannot give up both complete stability and complete independence, that one cannot have half-stability and half independence in monetary policy. There is nothing that prevents a country from pursuing a managed float in which half of every fluctuation in demand for its currency is accommodated by intervention and half is allowed to be reflected in the exchange rate. There is nothing that prevents a country from pursuing an exchange rate target zone of moderate width under perfect capital mobility. There is nothing that prevents a country from pursuing a peg that is abandoned whenever there is a shock large enough to use up half its reserves. There is empirical evidence that the Incompatible Trinity can be made feasible through sterilized intervention by public sector institutions such as pension funds, state banks or public enterprises as in the case of Malaysia, Singapore, and Indonesia in the late 1980s (Fischer and Reisen 1993) and China in present days ((Prasad 2008) and (Zhongxia 2008)). Considering the fact that East Asia countries have run current account surpluses since the late 1990s and as a result have accumulated considerable amount of foreign exchange reserves, East Asia economies become more viable to absorb foreign exchange fluctuations that may occur under the intermediate regimes than in the past. With regional cooperation and foreign reserve pooling among member countries (e.g. bilateral swap agreements), it is more likely that East Asia countries are able to overcome the weakness of intermediate regime that is the lack of credibility of monetary authorities in defending exchange rate parity (Bayoumi *et al.* 2000) and fend off speculative attacks on their currencies.

Second, by assuming perfect capital mobility as endogenous or primary fact, the corners hypothesis restricts the country's sovereignty in freely moving to different corners such as domestic monetary independence or exchange rate stability. Taking into account the recent global financial crisis that is likely to change the current of global finance capitalism toward strengthening of economic regulation, the possibility of change in the corner of

Mundell's Incompatible Trinity is increasing. If the corner of exchange rate stability is pinned, the focus of proposals will move to either capital controls to maintain domestic monetary independence or hard pegged exchange rate regimes to support the neoliberal idea of free capital mobility. In the case that the corner of domestic monetary independence is fixed, the focus of proposals will shift to flexible exchange rate regimes to sustain the aforementioned neoliberal idea or the capital controls to retain domestic monetary autonomy.

CONCLUDING REMARKS

The conceptual analysis of the proposals on foreign exchange system for the East Asia region based on the underlying hypotheses, the corners hypothesis and the intermediate regime, from the perspective of the Mundell's Incompatible Trinity provides us three stylized facts. First, in spite of the diversity of the proposals as they appear, the analysis of ideologies that underlie each proposal confirms that they are rooted from two schools of thought: dollar bloc, yen bloc and monetary union have the foundation in firm fix corner of the corners hypothesis while a common currency basket is based on the intermediate regime. Second, the corner hypothesis takes free capital mobility as endogenous or primary fact; it thus limits the foreign exchange policy choices for a small open economy to either fully flexible or hard pegged exchange rate regimes. In the context of foreign exchange system for the East Asia region, this suggests that the policy option should be hard pegged exchange rates so as to achieve exchange rate stability at a sacrifice of domestic monetary independence. The feasible proposals on foreign exchange system for East Asia is therefore scoped down to the firm fix corner of Frankel's classification of foreign exchange regimes (Frankel 2003), that are US dollar-pegging bloc, yen bloc and monetary union.

Third, challenging the assumption of free capital mobility as primary fact, we argue against the corners hypothesis on two bases. First, the strict condition in the Mundell's Incompatible Trinity that forces the country to select macroeconomic goals only at its extreme corner, that is to say to have perfect capital mobility, complete exchange rate stability, or comprehensive domestic monetary autonomy, may not be applicable in practice. We regard that the country can choose to have half exchange rate stability and half independence in monetary policy by implementing capital control policy. With massive amount of foreign exchange reserves accumulating from running current account surpluses since the late 1990s and regional cooperation in foreign reserve pooling such as bilateral swap agreements, the East Asia economies become more viable to absorb foreign exchange fluctuations and fend off speculative attacks on their currencies than in the past. Second, by assuming perfect capital mobility as endogenous, the corners hypothesis limits the country's sovereignty in freely moving to different corners such as domestic monetary independence or exchange rate stability. The recent global financial crisis is likely to change the current of global finance capitalism toward strengthening of economic regulation, thus increase the possibility of shift in the corner of Mundell's Incompatible Trinity away from the free capital mobility toward the exchange rate stability or domestic monetary independence corners. Under such cases, the foreign exchange policy of capital controls will be increasingly focused.

This paper simplifies the proposals on foreign exchange system for the East Asia region and increases public understanding of the debates on this issue. Some interesting questions arise for future research. First is whether the dynamic economic circumstances have any significant implications for the feasibility of the proposals of foreign exchange system for the East Asia region. Because the choice of appropriate regime cannot be made independently of knowledge of the circumstances facing the country in question, Frankel (Frankel 1999) argues that “No single regime is right for all countries, and even for a given country, it may be that no single regime is right at all time.” The second issue concerns the lack of political willingness that prevents the formation of precise initiative on foreign exchange policy coordination among governments of the East Asian countries. It is interesting to think deeply, under the circumstances that the US dollar is widely used by the private sector as the medium of exchange, the unit of account, and the store of value and the US dollar is commonly used by the public sector in foreign exchange interventions and foreign reserve holding, whether market-driven or policy-induced will have more momentum in stimulating regional cooperation in foreign exchange system in the East Asia region. Third, with increasing intraregional trade in Asia region that now accounts for more than 50 percent of total trade in Asia, approaching the levels seen in NAFTA and the European Union (International Monetary Fund 2007), this raises the question of the possibility that East Asian countries can settle bilateral trade balances with each other by an artificial currency such as ACU.

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