ISSN 1975-5163 WORKING PAPER No.347

October 2008

Can the European Monetary System Be a Model for East Asian Monetary Cooperation?

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The author thanks Ouk-Heon Song, Young Kyung Suh, Yong Bok Kim, Michael C. Marking, Wosik Moon, and seminar participants at the Bank of Korea for helpful comments.

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Can the European Monetary System Be a Model

for East Asian Monetary Cooperation?

Since the 1997 Asian financial crisis and the launch of the European Economic and Monetary Union shortly afterward, a growing number of studies have considered the idea of a so-called Asian Monetary System, mostly adopting the European Monetary System as its model. The operational adjustment burdens in the European Monetary System were asymmetrically distributed, however, in particular, between Germany and the other member countries. The emulation of such an asymmetric system in East Asia is not likely to be sustainable, due to the low support for regional integration in the region, in contrast to the European case. For a future Asian Monetary System to be sustainable, it should be designed in such a way as to promote symmetry in the adjustment burdens arising from its operation. To this end, it may be desirable for the Asian Monetary System to employ an exchange rate and intervention mechanism that levies adjustment burdens largely on participant currencies that deviate substantially from the average movements of all participating currencies. This mechanism should also be constructed so that each currency's probability of identification as a deviant currency is similar.

Keywords: Asian Currency Unit, Asian Monetary System, East Asian Monetary Cooperation, Regional Currency Unit

JEL Classification: F33, F55

I. Introduction

Stimulated by outbreak of the Asian financial crisis in 1997 and the launch of the European Economic and Monetary Union (EMU) in 1999, active debate on the desirable path towards East Asian monetary cooperation have emerged. In this debate, a good number of scholars have proposed creation of a regional exchange rate system based on a common currency basket, in other words, a so-called Asian Monetary System (AMS), as a crucial means of promoting regional exchange rate stability. The types of AMS suggested vary, but they can be divided into two broad categories: the Group of Three currency basket systems, in which East Asian countries collectively peg their currencies to a currency basket of the dollar, the euro and the yen,¹ and the regional currency basket systems, which use a so-called Regional Currency Unit (RMU),² a currency basket composed of East Asian currencies.³ Of these two arrangements, the RCU-based system has attracted increasing attention, especially from East Asian countries, in part because it appears to better fit the idea of regional cooperation.

¹ See, for example, Kawai and Takagi (2000), Ogawa and Ito (2002), and Williamson (2005).

² There are several variations of East Asian regional currency basket proposed, with names such as the Regional Monetary Unit, Asian Currency Unit, and Asian Monetary Unit, but the concepts behind them are all very similar to that behind the RCU.

³ See, for example, Lee and Yoon (2007), Murase (2007), Ogawa and Shimizu (2006, 2007), and Wilson (2006). In addition to the two types of common currency basket mentioned, some scholars have also recently proposed one consisting of the dollar, the euro, the yen, and other East Asian currencies. See, for example, Kawai (2008).

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The studies on constructing an AMS using an RCU generally regard the European Monetary System (EMS) as a key model for East Asia to follow.⁴ Such reliance on the EMS may be quite natural, given that it is widely assessed as having successfully stabilized exchange rates among its member countries. However, most of the studies have the problem of not paying much attention to the issue of how the adjustment burdens and obligations stemming from EMS operation were distributed among the member countries, in other words, whether its solution of the so-called *N*-1 problem of a fixed exchange rate system was symmetric or asymmetric.⁵ Yet, the neglect of this issue is a serious problem, since the asymmetrical allocation of adjustment burdens characteristic of the EMS is one with the potential to cause considerable conflicts among member of a future AMS. The question of who adjusts

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⁴ See, for example, Lee and Yoon (2007), Murase (2007), Ogawa and Shimizu (2006, 2007), and Wilson (2006).

⁵ As is well-known, the fixed exchange rate system faces the so-called N - 1 problem. In a system of N countries, there are only N - 1 independent exchange rates. Accordingly, N - 1 countries are forced to adjust their monetary policies so as to maintain the fixed exchange rates, with only one country, or one common authority, being free to set its monetary policy independently. Thus the system has one degree of freedom. Inherent in this situation is the problem of *who* should use this degree of freedom. There are two possible solutions: asymmetric and symmetric. The asymmetric solution is to allow one country to set its monetary policy independently and take a leadership role, forcing the other countries in the system to abandon independent monetary policies by undertaking all the necessary monetary adjustments themselves. The symmetric solution, meanwhile, is for all countries in the system to jointly decide the levels of their money stocks and interest rates, which requires international cooperation. The asymmetric and symmetric systems both have their own advantages and disadvantages. However, it is generally understood that for a fixed exchange rate regime to survive in the long run, its operating rules should be symmetric, as an asymmetric system is prone to conflicts between the center country and the peripheral countries (De Grauwe 2003, pp. 116-122).

in a regional exchange rate regime is a crucial political economic issue that can directly affect regime sustainability.

This study argues that emulation of the EMS is not desirable in designing an AMS. The EMS worked in a quite asymmetric manner, and the fact that it nevertheless managed to survive for almost two decades owed largely to the strong support for European integration in the region. In contrast, support for regional integration is still weak in East Asia, and an EMS-like system is thus not likely to be sustainable in the region. In order to increase its sustainability, any future AMS should be designed in a way that strengthens the symmetry of adjustment burdens required for its operation. To achieve this goal, it appears desirable that the exchange rate and intervention mechanism of the AMS be one that imposes adjustment burdens mainly on currencies deviating beyond a specific range from the average movements of RCU participant currencies, to where they are deemed serious threats to regional exchange rate stability. Under this mechanism, moreover, each participant currency should face a similar degree of probability of identification as a deviant currency.

In fact, there are a fair amount of studies addressing the European lessons for East Asian monetary cooperation. However, most tend to address the desirability and/or feasibility of an East Asian monetary union by using economic criteria suggested by the theory of optimum currency areas, such as price and wage flexibility, mobility of labor, financial market integration, economic openness, fiscal integration, etc.⁶ In

⁶ For a review of the related literature, see Watanabe and Ogura (2006) and Chey (2008).

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contrast to such studies, this research brings the issue of adjustment burden symmetry in a regional exchange rate regime into focus, as this will be a crucial political economic issue if East Asian countries actually seek to create an AMS, a possible precursor to an East Asian monetary union.

This paper is organized as follows. It first shows that, although the EMS design involved an attempt to increase symmetry, the EMS was in practice operated in an asymmetric manner, with Germany being the center country. It then addresses the causes of this asymmetric operation of the EMS, after which it discusses problems related with emulating the EMS in East Asia, and suggests broad guidelines for consideration in the design of an AMS. In the final section, it provides conclusions.

II. Establishment and operation of the EMS

The EMS was introduced in March 1979 in all nine member countries of the European Economic Community, with its main objective being creation of a "zone of monetary stability" in the region (European Council 1978, para. 1.1).⁷ Its main institutional elements consisted of the European Currency Unit (ECU), the exchange rate and intervention mechanism (ERM), and various credit mechanisms. The ECU was a composite monetary unit made up of specific amounts of the currencies of all nine

⁷ The nine member countries were Germany, France, the United Kingdom, the Netherlands, Italy, Belgium, Luxembourg, Denmark, and Ireland.

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EMS countries. The currencies' amounts in the ECU were fixed, but were reexamined and if necessary revised, subject to agreement by all member countries, every five years, or on request if any currency's weight (the currency's percentage share in the value of the ECU basket) changed by 25%. The ERM was composed of two parts: the parity grid system and the divergence indicator system.⁸ The credit mechanisms consisted of three facilities: very short-term financing, short-term monetary support, and medium-term financial assistance (European Commission 1979, European Council 1978). One of the most salient and controversial issues in the negotiations to establish the EMS was that of symmetry between the burdens and obligations incumbent on the participant countries (European Commission 1979, p. 70).

1. Pursuit of symmetry in design of the EMS

The EMS was eventually constructed in such a way as to enhance symmetry in many aspects. In particular, the innovation of the divergence indicator system in the ERM was one of the most significant efforts made to strengthen symmetry in the EMS (European Commission 1979).

To understand the significance of the divergence indicator system, the asymmetric natures of the parity grid system should be discussed first. The parity grid system in

⁸ Although the United Kingdom participated in the EMS from its beginning, and the pound sterling was therefore included in the ECU, it did not join the ERM until October 1990.

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the EMS was constructed as follows. Each currency in the ECU was first assigned an ECU central rate, which was expressed as the price of one ECU in terms of that currency. Its ECU central rate was fixed and was revised only when there was a realignment.⁹ All members' ECU central rates were then cross-rated, and sets of bilateral central rates for all of the member currencies were obtained. The bilateral central rates made up the parity grid, and fluctuation margins of $\pm 2.25\%$ ($\pm 6\%$ for the Italian lira) were established. Countries participating in the ERM were obliged to maintain the bilateral market exchange rates of their currencies against the other ERM currencies within these bilateral fluctuation margins (European Commission 1979, European Council 1978).

The key feature of the parity grid system was that fluctuation margins were always reached simultaneously by two currencies, and as a result member countries could face undue burdens of adjustment. For example, problems could arise if one currency, say, currency A, moved to its parity grid margins against all of the other currencies simultaneously, while they all remained otherwise within the ranges of their parity grid margins against each other. In this situation, it would appear clear that the country issuing currency A should take action to redress the situation. However, under the parity grid system all member countries were required to intervene and possibly take adjustment measures to ensure that their currencies did not move beyond the

⁹ The realignment was subject to mutual agreement by all countries participating in the ERM and the European Commission (European Council 1978).

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margins. Such obligations on countries other than the country issuing currency A could be reasonably regarded as an undue burden (Bank of England 1979, p. 193, Central Bank of Ireland 1979, p. 89).

Moreover, in the parity grid system, the burden of adjustment tended to fall to a very considerable degree and in an asymmetrical manner on countries whose currencies were weak, even if they had not made mistakes in their economic policies. This is, in fact, a well known feature of fixed exchange rate regimes, which is explained as follows. When countries with strong currencies intervene in the foreign exchange markets, they accumulate foreign exchange reserves, and typically attempt to keep their monetary bases unchanged by conducting sterilizing operations. Conversely, countries whose currencies are weak lose reserves when they intervene, and sterilize through increased borrowings by their central banks. There are, however, limits to this process of intervention and sterilization. For countries with weak currencies, the limit is the amount of foreign exchange they have available, while, for the countries with strong currencies, it is the volume of central bank credit provided to the economy. In practice, countries with weak currencies tend to reach their limits much faster than those with strong currencies, and it is thus the weak currency countries that bear the adjustment burdens (Wyplosz 1988, pp. 63-64).

In order to solve these problems of the parity grid system, the divergence indicator system was introduced into the ERM as a secondary system. The underlying objective of the divergence indicator system was to identify the currency showing the

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greatest divergence from the average movement of EMS currencies and, by imposing an adjustment obligation on that currency, to make adjustment burden allocation fairer, irrespective of the direction of divergence. The judgement on divergence was based on deviation of the ECU market rate for each currency (calculated by using the currency's fixed amount in the ECU and the market exchange rates of the currency against the other ECU currencies), from its ECU central rate (Central Bank of Ireland 1979, p. 90, European Commission 1979, pp. 74-75).

As the ECU consisted of currencies with different weights, however, the ECU market rate in terms of each currency was affected by that currency's weight. The greater a currency's weight in the ECU, the less the ECU rate in terms of that currency was influenced by movements in the exchange rates of the other ECU currencies, and vice versa. A consequence of this effect was that a significant deviation of the ECU market rate for a currency having a small weight, from its ECU central rate, might come about due to significant deviation from its parities with just a few currencies having large weights, rather than from its parities with nearly all the ECU currencies. Ultimately, the differences in the weights of currencies in the ECU could become a source of asymmetric adjustment burdens (Bank of England 1979, p. 193, Central Bank of Ireland 1979, p. 90, European Commission 1979, pp. 85-91).

For this reason, it was intended that the permissible divergence for each currency be established in such a way as to eliminate the influence of a currency's ECU weight on the probability of its being identified as divergent. This objective was expected to

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be achieved by setting a narrower spread of permissible divergence for a currency with a bigger weight. To be specific, the maximum divergence spread for a currency – i.e., the maximum percentage appreciation or depreciation which the ECU market rate for a currency could show against its ECU central rate – was set so as to be reached when the bilateral fluctuation margins of the currency against all other ECU currencies were reached.¹⁰ And when the ECU market rate for a currency appreciated or depreciated from its ECU central rate by 75% of its maximum divergence spread, that currency was said to have reached its "divergence threshold." When a currency crossed its divergence threshold, regardless of the direction of that divergence, there was a "presumption" that the monetary authority in the country concerned would correct the situation by taking adequate measures, which included diversified intervention, domestic monetary policy measures, changes in central rates, and other economic policy steps (Bank of England 1979, p. 193, Central Bank of Ireland 1979, p. 90, European Commission 1979, pp. 85-91).¹¹

 $(\pm 2.25) \times$ (the sum of the weights of the other ECU currencies) or expressed as follows:

 $(\pm 2.25) \times (1 - \text{the weight of the currency})$

¹⁰ Therefore, if all the bilateral fluctuation margins were assumed to be $\pm 2.25\%$, the maximum divergence spread for each currency was equal to:

⁽European Commission 1979, pp. 87).

¹¹ Diversified intervention referred to intervention in a variety of currencies, rather than in only the currency that was furthest away from the intervening country's currency, and was intended to spread the burden of intervention among ERM currencies. Domestic monetary policy measures embraced those affecting interest rates that had a direct impact on capital flows, and other measures of economic policy included, for example, budgetary or incomes policy changes (Strihou 1979, p. 15).

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The European Commission believed that by designing such a divergence indicator system they would ensure that each currency in the ECU faced a similar probability of reaching its divergence threshold first, despite the differences in weights applied to the currencies. The Commission also expected that a currency would in most cases reach its divergence threshold before reaching its bilateral fluctuation margin against another currency, and that the divergence indicator system could accordingly function as an early warning system. As a result, the Commission, along with a number of EMS advocates, regarded the divergence indicator system as a significant innovation that would enhance symmetry in the adjustment burdens arising during ERM operation (European Commission 1979, pp. 85-91).¹²

In addition to employment of the divergence indicator system, the EMS introduced certain measures into the parity grid system intended to increase symmetry in its operation. For example, when two currencies reached their bilateral fluctuation margins, the monetary authorities of both countries were obliged to carry out so-called "marginal" intervention: the country with the stronger currency had to purchase the weaker currency, while the country with the weaker currency had to sell the stronger currency (European Commission 1979, p. 73). Also, through the very short-term financing facility, the country with the weaker currency could borrow foreign exchange necessary for intervention from the country with the stronger currency.

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¹² In fact, without the divergence indicator system, the ERM was essentially the same as the system operated in the European "snake," which was the precursor of the EMS, and which was heavily criticized for its asymmetric operation (Bank of England 1979, p. 190).

without limits or conditions, with the latter country obliged to provide such credits upon request. Under the rules of the very short-term financing facility, therefore, the monetary base of the weak currency country was to decline, while that of the strong currency was to rise. The two countries were accordingly expected to share the adjustment burdens in terms of the immediate liquidity effects of intervention (Fratianni *et al.* 1992, pp. 23-26).¹³

2. Asymmetric operation of the EMS

Most empirical studies on operation of the EMS have demonstrated, however, that the EMS was actually operated in an asymmetric manner. Most such studies have tested the "German Dominance Hypothesis" (which claims that Germany dominated the monetary policies of EMS countries) using a variety of methods and variables.¹⁴ The literature on the issue is broadly divided into two groups, in terms of the findings. One group argues that Germany conducted its monetary policy independently, without reference to the other EMS countries, while those countries adjusted their monetary policies to Germany's in order to stabilize their bilateral exchange rates vis-à-vis the

¹³ Moreover, the very short-term financing credit was denominated and partly repayable in the ECU, and a creditor country could refuse repayment in the ECU only when it surpassed 50% of the claim. This implied a real wealth transfer from the country with an appreciating currency to that whose currency was depreciating, and a sharing by the two countries of the risk of parity realignment (Fratianni *et al.* 1992, pp. 23-26).

¹⁴ The methods that have been most frequently used in testing the hypothesis include causality tests on interest rates or on monetary aggregates, investigations of intervention in foreign exchange markets, etc.

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Deutsche Mark (DM).¹⁵ In short, this group argues that the EMS was effectively a DM zone. The other group, meanwhile, refutes the first group's claim, arguing that Germany's monetary policies were also affected by those of the other EMS countries.¹⁶ However, even most research in support of the second line agrees that Germany's monetary policy had stronger effects on the other countries' than vice versa – in terms both of size and of persistence.¹⁷

Thus, although complete German dominance of the EMS may be difficult to accept, it appears fair to conclude that operation of the EMS was asymmetric, with Germany being the most influential member country. Indeed, France and Italy frequently expressed strong criticisms claiming that the EMS worked asymmetrically, placing the adjustment burdens mainly on non-German countries (Ungerer *et al.* 1990,

p. 9).¹⁸

¹⁵ See, for example, Artus *et al.* (1991), Baum and Barkoulas (2006), Giavazzi and Giovannini (1987), Herz and Röger (1992), Karfakis and Moschos (1990), Kirchgässner and Wolters (1993), MacDonald and Taylor (1990), and Mastropasqua, Micossi and Rinaldi (1988).

¹⁶ See, for example, Bajo-Rubio and Montávez-Garcés (2002), Bajo-Rubio, Sosvilla-Rivero and Fernández-Rodríguez (2001), Booth and Ciner (2005), Camarero and Ordóñez (2001), Caporale, Kalyvitis and Pittis (1996), Cohen and Wyplosz (1989), De Grauwe (1989), Fratianni and von Hagen (1990b), Fujihara and Mougoué (1996), Hassapis, Pittis and Prodromidis (1999), Kanas (1997), Katsimbris and Miller (1993), Koedijk and Kool (1992), Kutan (1991), Laopodis (2001, 2004), and von Hagen and Fratianni (1990).

¹⁷ A few studies argue that US monetary policy also had a strong influence on EMS countries' monetary policies. See, for example, Booth and Ciner (2005), Hassapis, Pittis and Prodromidis (1999), and Katsimbris and Miller (1993). However, Artus *et al.* (1991), Baum and Barkoulas (2006), Fratianni and von Hagen (1990a), and Kirchgässner and Wolters (1993) show that the impact of changes in US interest rates on interest rates in the EMS countries was actually quite limited.

¹⁸ There are a good number of studies showing that the degree of asymmetry in the EMS changed to

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III. Sources of asymmetry in the EMS

Why did such asymmetry emerge in the EMS? One of the most popular explanations is that countries with traditionally high inflation rates – such as France, Italy, and Ireland – sought to benefit from the German Bundesbank's reputation for credible commitment to price stability, by pegging their exchange rates to the DM (Fratianni *et al.* 1990a, p. 89, Giavazzi *et al.* 1988). This credibility argument is not entirely convincing, however, given that the main motivation behind establishment of the EMS was exchange rate stability rather than inflation control (European Commission 1979, p. 69, Giavazzi *et al.* 1989, p. 197). In fact, it was only after the early 1980s that most EMS countries began to place priority on price stability in their monetary policies (Camen *et al.* 1991, p. 232, Griffiths *et al.* 1994, p. 141). In addition, given that the inflation rates of most EMS countries to follow German monetary policy to achieve price stability at the expense of monetary sovereignty seems unlikely to have been

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some extent over time. However, the question of whether it weakened or intensified as time passed is controversial. One group, including Camarero and Ordóñez (2001), Fujihara and Mougoué (1996), Laopodis (2001, 2004), Uctum (1999), and von Hagen and Fratianni (1990), argues that asymmetry attenuated in the later EMS period. The other group, for example, Bajo-Rubio, Sosvilla-Rivero and Fernández-Rodríguez (2001), and Biltoft and Boersch (1992), argues the converse. Given the strong controversy on the issue, this paper will focus only on the general finding that the EMS worked asymmetrically.

high during the period (Laopodis 2001, 2004).¹⁹ There would thus appear to be other factors that might better explain the asymmetric operation of the EMS.

1. Institutional flaws

Asymmetry in the EMS appears to have arisen largely due to flaws in its design. In fact, even though the EMS did adopt devices for reducing asymmetry in its operation, they ended in failure.

First of all, the divergence indicator system failed to function as the core device to enhance symmetry in the EMS, due to institutional problems. For example, despite its "presumption" that they would do so, the system did not impose any actual obligation to take adequate measures on countries whose currencies crossed their divergence thresholds. This was due to strong opposition to such an obligation from Germany, which argued that the divergence indicator system could bring about an increase in inflation among EMS countries (European Commission 1979, p. 71, Giavazzi *et al.* 1989, pp. 41-42).²⁰ In addition, the divergence indicator system failed to function as an early warning system, since currencies frequently reached their bilateral margins in the parity grid system without crossing their divergence thresholds.²¹ This defect in

¹⁹ For more counterevidence to the credibility argument, see Fratianni and von Hagen (1992, pp. 68-71) and Melitz (1987, p. 18).

²⁰ The Bundesbank publicly declared that, as a matter of principle, the divergence indicator would never be a standard for its own performance, and that it would always give priority to internal monetary stability over external stability (Vaubel 1980, p. 187).

²¹ For instance, during the first year of the EMS, the Danish krone and the DM reached their intervention

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the system arose largely because determination of the maximum divergence spreads and divergence thresholds was based on the extreme case where the currency in question was at its bilateral fluctuation margins vis-à-vis all other EMS currencies at once (Vaubel 1980, pp. 185-186).²²

As a result of these problems, in practice the divergence indicator system played almost no role in operation of the ERM (Giavazzi *et al.* 1989, pp. 35-37). It should moreover be noted, as will be discussed in the following section, that the divergence indicator system was ill-designed and that asymmetry could not have been eliminated even if it had actually operated. Ultimately, therefore, innovation of the divergence indicator system as the key means for enhancing symmetry in EMS operation ended in failure.

The ERM was in fact, then, operated solely on the basis of the parity grid system, which, as discussed earlier, had a systemic bias favoring strong currency countries. The EMS did of course introduce measures into the parity grid system to reduce its asymmetric nature. These measures also failed to ensure symmetry in EMS operation, however. The absence of a rule prohibiting sterilization of intervention effects was one factor that explains this failure; the lack of such a rule implied that, although marginal

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points in the parity grid system several times, without coming close to their divergence thresholds (Vaubel 1980, p. 185).

²² In contrast to the divergence indicator system design, a much more probable case was a situation in which only two currencies approached their bilateral fluctuation margins vis-à-vis each other, while appreciating and depreciating by the same respective degrees from the average for the other member currencies. In this case, the two extreme currencies could reach their bilateral fluctuation margins without passing their divergence thresholds (Vaubel 1980, pp. 185-186).

intervention was obligatory for both the stronger and the weaker currency countries, the adjustment burden was mostly imposed on the latter (Giavazzi *et al.* 1987, pp. 240-241). Indeed, Germany, whose DM appreciated relative to most other currencies during the EMS period, sterilized its interventions to a significantly greater extent than other countries, so as to shield its domestic economy from increased money supply (Mastropasqua *et al.* 1988). The other EMS countries, meanwhile, had to accommodate their monetary policies to Germany's in order to preserve exchange rate stability against the DM (see Giavazzi *et al.* 1987, pp. 240-241).

It should also be noted that most interventions under the parity grid system were carried out before the bilateral margins were reached, as most ERM countries preferred to keep their exchange rates well within their margins to forestall speculative attacks (Ungerer *et al.* 1990. p. 5). Such intramarginal interventions were not compulsory and, reflecting the parity grid system's bias in favor of stronger currencies, were generally undertaken by countries having weaker currencies. Germany was involved in intramarginal interventions to only a very limited extent (Biltoft *et al.* 1992, pp. 298-299).²³

Moreover, in contrast to marginal intervention, intramarginal intervention could not at first be supported by the very short-term financing until the rule was changed by the Basel-Nyborg Agreement in September 1987. In spite of this agreement, moreover,

²³ It was only after outbreak of the ERM crisis in September 1992 that Germany carried out intramarginal intervention (Gardner *et al.* 1992, pp. 4-5).

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intramarginal intervention using a partner's currency still could be used only after prior approval of the central bank issuing the intervention currency (Gardner *et al.* 1992, pp. 4-5).²⁴

2. The DM as an international currency

While the design of the EMS led naturally to a stronger currency taking the role of anchor currency, the question remains of why it was the DM that assumed this role. Given that the currency of a country with lower inflation tends to appreciate vis-à-vis that of a country having higher inflation, the DM was certainly qualified to become the anchor currency in the EMS (see Wyplosz 1988, pp. 63-64). Indeed, as mentioned earlier, the DM was one of the strong EMS currencies. However, it was not just the DM that this was true of. Inflation in the Netherlands was at a level similar to that in Germany, and the guilder was in fact frequently strong vis-à-vis the DM. It seems reasonable therefore to postulate that for a currency to be the EMS anchor currency it had to meet more conditions beyond its country having a low inflation rate. In this regard, the characteristics of the DM as an international currency appear to have been an important source of its role as the anchor currency in the EMS.

Four elements are generally required to make a currency suitable for international

²⁴ Germany increasingly accepted use of the DM by other EMS countries for intramarginal intervention, and as a result DM use for intramarginal intervention became prevalent (Rieke 1990, p. 30). However, Germany did so because EMS countries used DM balances held on the Euromarkets, which had no effect on the Bundesbanks' liabilities and the German monetary base (Mastropasqua *et al.* 1988, pp. 258-259, 270).

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currency status. Firstly, the country's economy should be large and well integrated into the world markets, as these characteristics enhance the currency's acceptability. Secondly, there should be confidence in the currency's value. For this purpose, the country issuing the currency should maintain price stability. Thirdly, the country should have well developed financial markets, as they increase the convenience of using its currency. Finally, an international currency derives its value owing to its strong network externalities, which produce a strong inertial bias in favor of using that currency if it has been an international currency in the past (Chinn *et al.* 2007, pp. 298-301, Cohen 2003, pp. 6-7).

Among ERM currencies, the DM satisfied these requirements most. The size of the German economy was relatively big in Europe. In terms of gross domestic product, for example, Germany was in 1980 about 33% larger than France, the second largest economy among EMS countries, while also accounting for the largest share of 30% in total intra-EMS trade. The Bundesbank had a strong reputation of commitment to price stability, and had successfully maintained confidence in the value of the DM. According to Reed (1981), Frankfurt ranked in 1981 as the fifth top international financial center – after London, New York, Paris, and Tokyo. The DM was additionally already widely used as an international reserve currency, second only to the dollar, even before launch of the EMS.²⁵ Given all of these circumstances, it was

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²⁵ According the International Monetary Fund, the DM accounted for about 11% of identified international reserve holdings in the world in 1978.

the DM, among ERM currencies, that was most qualified to be ERM anchor currency. And the DM was accordingly able to take that role in operation of the ERM under the circumstances in which, as shown by abandonment of the divergence indicator system, the ECU had failed to take that role itself.

IV. Invalidity of the EMS as a model for an AMS

The EMS experiences show that the EMS was an asymmetric system with Germany as its center country. Thus, if an AMS were to be designed in the same way as the EMS, it would very likely have to be operated in a quite asymmetric manner, in which one country would take the role of the center country. Given that the Japanese yen meets the conditions of an international currency, more so than any other East Asian currency at this moment, it is reasonable to expect that Japan might become the center country in the AMS. In the long run, of course, there is a likelihood of the Chinese yuan also becoming an international currency, and China might therefore be another potential candidate for the center country in the AMS. The question arises, however, of whether such an asymmetric system can work in East Asia. This section addresses this issue and suggests broad guidelines, rather than detailed technical methods, for consideration if East Asian countries attempt to establish an AMS.

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1. Problems of emulating the EMS in East Asia

To answer whether an EMS-like system can work in East Asia, analysis should be first be done explaining the continued survival of the EMS for almost two decades, despite its asymmetric operation. In fact, Germany did not force the other EMS countries to follow its monetary policy, and they all did have the option of leaving the EMS (Kaelberer 1997, p. 43).

Why did the non-German EMS countries then remain in the EMS, despite its asymmetric operation? The credibility argument has difficulty in answering this question, just as it does in explaining the emergence of asymmetry in the EMS. The answer appears to be instead found mainly in the strong support in member countries for European integration. According to the *Eurobarometer*, a public opinion survey conducted by the European Community, more than half of the respondents supported their countries' membership in the European Union throughout the 1980s, with the figure going up to 72% in 1990.²⁶ And the success of the EMS was publicly recognized as being related to other aspects of European integration (Frieden 1994, pp. 33-34). Indeed, the EMS was not an end in itself, but was an institution to "pave the way for further progress towards EMU" (European Commission 1979, p. 72). There was an implication, therefore, that a country not joining the EMS would become a second-tier member of the EC. National politicians, as well as EC leaders, thus staked

²⁶ *Eurobarometer* can be obtained at the website of the European Commission (http://ec.europa.eu/public_opinion/archives_en.htm).

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much political capital on the EMS (Frieden 1994, pp. 33-34), and the strong support for European integration present in member countries appears to have led them to remain in the EMS, even despite its asymmetric operation.

In contrast to the case in Europe, however, support for regional integration is still weak in East Asia. It is thus unlikely that we will see strong public support for regional integration in East Asia, and, national politicians are accordingly likely to show reluctance in risking political capital to maintain an AMS, even if it is created. In such a situation, the AMS will be unsustainable if it allocates the burdens required for its maintenance asymmetrically among member countries. Under such a situation, AMS countries may also be easily exposed to speculative attacks, which will increase regional exchange rate instability.

It should be noted that even the EMS was not likely to survive forever, even despite the European integration efforts helping its sustainability to such a significant extent. In fact, the creation of the EMS's successor, the EMU, was partly an attempt by non-German EMS countries to regain some monetary sovereignty, since they would have equality with Germany in the European Central Bank (De Grauwe 1993, pp. 655-656, Sandholtz 1993, pp. 27-30).²⁷

Of course, if there is a hegemonic country able to force acceptance by other member countries of an asymmetric regional exchange rate regime, such a system

²⁷ That Germany accepted this demand from EMS countries for more symmetric monetary cooperation was mainly due to German reunification, which had given Germany an incentive to alleviate doubts about its commitment to the European Community and multilateralism (Chang 2003, p. 225).

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could have higher sustainability. However, this was not the case with regard to the EMS, and it is also not the case in East Asia. Although Japan and China may be regarded as great powers in the region, neither of them has been able to unilaterally impose a regional regime on other East Asian countries, and the possibility of that happening is not likely to be high in the near future, either.²⁸

2. Guidelines for design of an AMS

Given the above analysis, it may be clear that in order for an AMS to be sustainable, it should be designed in a way that enhances symmetry in the related adjustment burdens. The following issue for discussion, then, is that of how to achieve this.

In this regard, a parity grid system does not appear to be a solution, due to its intrinsic bias towards asymmetric operation. It may of course be possible to construct a parity grid system that is more symmetric than that used in the EMS. This may be done by establishing rules that prohibit sterilization of intervention and credit facilities that help provide the funds necessary for intervention, including both marginal and intramarginal intervention. Even if such arrangements can be accepted by participant countries, however, they do not solve the problem of member countries having to bear undue adjustment burdens when one currency moves to its parity grid margins against other currencies, even while they stay well within their parity grid margins against

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²⁸ This issue becomes more complicated when the influence of the United States on East Asian monetary cooperation is considered. For more on this issue, see Chey (forthcoming).

each other. It is additionally worth noting that, even an RCU is created for an AMS, it would not play any significant role in a parity grid system similar to that in the EMS, but function merely as the numéraire for fixing the central rates of participant currencies. Thus, if East Asian countries wish to assign an RCU an important role in an AMS, use of a parity grid system as its principle exchange and intervention mechanism is likely an inappropriate choice.

The adoption of the divergence indicator system used in the EMS cannot be a solution either, even if member countries are obliged to intervene when their currencies pass their divergence thresholds. The problem of the divergence indicator system was not only its failure to function as an early warning system. It had the more serious problem also of a participant currency's probability of reaching its divergence threshold being substantially affected by its weight in the ECU. For instance, as indicated earlier, it was possible that neither of two currencies at their opposite bilateral fluctuation margins would reach their divergence thresholds, and the probability that such a situation would occur was larger as their combined ECU weight was smaller (Vaubel 1980, pp. 210-212). Also, when two currencies of different weights reached their opposite bilateral fluctuation margins, but their fluctuations against all other currencies remained within their margins, the currency having the smaller weight could cross its divergence threshold even while that with the higher weight did not (Salop 1981, Vaubel 1980, pp. 210-212). Moreover, when two currencies were at their opposite bilateral margins while not having reached their

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divergence thresholds, one of the other currencies, which were all within their bilateral margins vis-à-vis any other currency, could reach its divergence threshold, and such a probability was higher the higher that currency's weight (Spaventa 1981, pp. 17-20).²⁹

Which type of exchange rate and intervention mechanism should be adopted if an AMS using an RCU is to enhance the symmetry of burden-sharing related to AMS operation? Considering the intrinsic problems of a parity grid system, a fairer system would appear to be one that identifies a currency deviating beyond a certain range from the average movement of RCU participating currencies, making it a serious threat to regional exchange rate stability, and then imposes the intervention and adjustment burden mainly on that currency itself. This system also appears to fit better the idea of regional monetary cooperation, as it is conducive to leading the domestic monetary policies of member countries towards the general regional trend.³⁰

Unlike in the divergence indicator system of the EMS, however, the system should be designed in such a way that each participant currency has a similar degree of probability of identification as deviant. For this purpose, it appears critical to design the system carefully, in a way as to reduce the effects of the weights of the currencies

²⁹ See the cited references for the detailed explanations of these properties of the divergence indicator system of the EMS.

³⁰ In consumer price index terms, the average inflation rates of South Korea, Japan, China, and the ten ASEAN countries between 2000 and 2005 was about 5%, a much lower level than the approximately 10% in ERM countries at around the time of EMS establishment (1975 to 1978). The probability that introduction of such an AMS will lead member countries to face high inflation is thus not likely to be great.

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in the RCU on their probabilities of being so identified.³¹ In fact, the effect of a participant currency's weight on the value of the RCU in terms of that currency has been a main obstacle to progress in the discussions so far on creation of an RCU among East Asian countries. Deciding on such a design for an AMS may, therefore, accelerate the discussions.

In addition, it would seem necessary that there be an institution, either formal or informal, that encourages member countries to commonly decide the general direction of their monetary policies. Unless there is broad consensus among member countries on the general direction of monetary policy, the operation of an AMS will be prone to stimulating conflicts among them. In this regard, establishment of such an institution may be an important issue to discuss to make possible proper operation and sustainability of an AMS.

V. Conclusions

This paper has addressed the desirability of the EMS as a key model for an AMS, by revisiting the experiences of the EMS with a focus on the issue of distribution of the adjustment burdens required for its operation. The analysis has shown that the EMS was operated asymmetrically, with the DM taking the status of its anchor currency. For

³¹ As was said earlier, it is beyond the scope of this research to suggest technical methods for achieving this goal.

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East Asia, such a system is not likely to be sustainable due to the low support for regional integration present in the region. If an AMS is to be adopted, therefore, it should be designed in a way that increases symmetry in its operation. This suggests that it should be constructed in a form quite different from that of the EMS. In particular, it appears desirable for an AMS to operate on the basis of an exchange rate and intervention mechanism that imposes the intervention and adjustment burdens mainly on a currency that deviates substantially from the average movement of RCU participant currencies. This system should, moreover, be constructed in such a way that each currency has a similar degree of probability of being such a deviant currency.

The argument of this study should not be understood as claiming symmetry to be the sole or the most salient criteria for design of an AMS. There can be other important standards to consider, such as price stability for instance. However, the focus of the paper on the issue of symmetry shed lights on the fundamental aspect of an AMS, that is, international *cooperation*, whose sustainability depends largely upon minimization of conflicts between different participant countries' interests. Various standards may be considered in designing an AMS, but none of them should compromise the principle of symmetry to any serious extent.

The likelihood that a regional exchange rate regime will be created in East Asia in the near future may not be high, considering the current political economic situation in the region (see Chey 2008). One of the prerequisites for its creation may be agreement among East Asian countries on concrete rules for allocating adjustment costs arising

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from its oeration among members. Without such agreement, AMS realization may be difficult.

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Appendix. Intra-regional shares of EMS and ASEAN+3 economies

A. EMS economies

			(%)
	Nominal GDP	PPP GDP	Intra-regional trade
Belgium	4.16	3.77	_
Denmark	2.32	1.98	3.36
France	22.98	20.49	19.30
Germany	30.57	28.87	29.99
Ireland	0.70	0.79	2.70
Italy	15.29	19.47	14.82
Luxembourg	0.20	0.19	_
Netherlands	5.95	5.72	14.67
United Kingdom	17.83	18.73	15.17
Total	100	100	100

Source: World Development Indicators, World Bank; Direction of Trade Statistics, International

Monetary Fund.

Note: Figures are for 1980.

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B. ASEAN+3 economies

	Nominal GDP	PPP GDP	Intra-regional trade
Brunei	0.12	0.13	0.34
Cambodia	0.09	0.17	0.05
China	33.18	46.75	25.3
Indonesia	4.38	5.57	4.76
Japan	44.27	28.38	24.19
Laos	0.04	0.08	0.09
Malaysia	1.83	2.35	7.57
Myanmar	-	0.19	0.32
Philippines	1.46	1.99	2.49
Singapore	1.63	1.53	12.61
South Korea	9.81	7.95	13.42
Thailand	2.49	3.44	6.71
Vietnam	0.72	1.47	2.15
Total	100	100	100

Source: World Development Indicators, World Bank; Direction of Trade Statistics, International

Monetary Fund.

Note: Figures for nominal GDP and PPP (purchasing power parity) GDP are for 2007, while those for intra-regional trade are for 2005.

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(%)

< Abstract in Korean >

최형규*

1997년 아시아 외환위기 발생과 1999년 유럽경제통화동맹(EMU) 출범 이후 동아시아에 지역환율제도, 이른바 아시아통화제도(AMS)를 설립하는 방안에 대한 논의가 학계를 중심으로 늘어나고 있다. 이러한 논의는 대부분 1979년부터 EMU 출범시까지 20년간 운영되었던 유럽통화제도(EMS)를 AMS의 모델로 상정하고 있다. 그러나 AMS가 EMS를 모방하여 설계될 경우 오래 지속될 가능성이 크지 않은데 이는 EMS가 정책조정의 부담이 회원국들에게 비대칭적으로 분배되었던 구조를 지니고 있었기 때문이다. 이러한 비대칭성에도 불구하고 EMS가 오래 지속된 것은 기본적으로 회원국들 간에 유럽통합에 대한 강한 지지를 배경으로 한다. 유럽과 달리 동아시아에서는 지역통합에 대한 지지가 미약한데 이러한 상황에서 AMS가 비대칭적으로 설계·운영된다면 회원국들 간에 갈등이 발생하여 통 제도의 지속적 운영이 어려워질 가능성이 크다. 따라서 지역환율제도가 지속적으로 운영되기 위해서는 운영과정에서

발생할 수 있는 정책조정 부담이 회원국들에게 대칭적으로 분배될 수 있도록 동 제도가 설계되어야 한다. 현재 동아시아 정치·경제 상황에 비추어 볼 때 AMS가 도입될 가능성은 크지 않은데 가중치 설정, 국가간 정책조정 부담 등 여러 사안들의 구체적 방안에 대한 추가적인 연구가 지속적으로 필요할 것으로 보인다.

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 따라서 본 논문의 내용을 보도하거나 인용할 경우에는 집필자명을
 반드시 명시하여 주시기 바랍니다.

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