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MONETARY INTEGRATION AHEAD OF TRADE INTEGRATION IN EAST ASIA?

Kwanho Shin
and
Yunjong Wang

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The Institute of Social and Economic Research
Osaka University
6-1 Mihogaoka, Ibaraki, Osaka 567-0047, Japan

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Kwanho Shin[*] and Yunjong Wang[**]

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Abstract

Regionalism is taking two forms. It is occurring firstly through free trade arrangements and secondly through monetary arrangements. In this paper, we highlight the issues related to the reversal of sequence between trade integration (free trade agreement) and monetary integration (a monetary union). While the Euro area pursued trade integration first, from a theoretical point of view, there is no clear reason for introducing trade integration ahead of monetary integration. On the contrary we point out many good reasons for forming a monetary union before a free trade agreement.

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[*] Department of Economics, Korea University, khshin@korea.ac.kr
[**] Senior Research Fellow, KIEP, yjwang@kiep.go.kr

1. Introduction

While a flexible exchange rate regime is the trend in one direction, there is also a movement toward the other extreme of a credible bilateral or multilateral parity-fixing regime. As there is renewed emphasis on price stability, the sanctity of "one country, one money" has come into question (Alesina and Barro, 2002). In particular, the formation of the European monetary union, in which twelve countries have adopted the same currency, has given rise to an intense debate on monetary union.

The aim of this paper is to examine the extent to which East Asian countries can introduce a monetary union. More specifically, we will try to answer the question of whether East Asia can introduce a monetary union without making an effort to further trade integration through a formal free trade agreement (FTA). To put monetary union ahead of trade integration is the opposite sequence to the strategy followed by the European Union. In Europe, a trade-integration-first strategy was natural when six nations in Europe singed the historic Treaty of Rome in March 1957, which set in motion the economic and political integration of Western Europe. No serious thought was given to setting up a regional exchange rate coordination mechanism or the possibility of introducing a common currency, simply because the Bretton Woods system provided stability for the European countries. Only when the Bretton Woods system began to unravel, the pressure for exchange rate stability intensified and thus the European countries started to initiate monetary integration.

Unlike Europe, however, trade agreements among East Asian countries are slow to materialize and are subject to severe domestic political resistance. Furthermore, conventional integration process may not work because a formal FTA at the regional level would be disrupted by the exchange rate instability unless an effective exchange rate coordinating mechanism is put in place. A point of reference can be found in the Common Market of the South (MERCOSUR), where economic integration process came to a deadlock due to frequent currency crises. In contrast to conventional regionalism through trade integration, monetary regionalism can contribute to the stability of currencies and financial markets without having to formalize trade linkages.

Since the financial crisis, East Asian countries have had a strong impetus to search for a regional cooperative mechanism that could help secure financial stability in the region. This search is now gathering momentum and opening the door to possibly significant policy-led integration in East Asia. The Chiang Mai Initiative (CMI) of ASEAN+3 is one such available option. At present, however, East Asian countries have not yet specified a common policy goal in the area of a future exchange rate system in

the region. Even the CMI has nothing to do with exchange rate coordination, given the diverse exchange rate systems in East Asia.

When the regional group agrees on deepening regional integration through exchange rate coordination, monetary policy coordination becomes a crucial element in the broad context of financial and monetary cooperation. Recently, some observers have anticipated that East Asia will be successful in its attempt to jump into monetary cooperation ahead of building up the trade agreements, while many others are still skeptical.

Based on theory and empirical evidence, this paper explores the issues related to the reversed sequencing between trade and monetary integration. We organize our discussion as follows. Section 2 briefly reviews the strategy adopted by European countries towards the European monetary union. Section 3 then points to the different situation faced by East Asian countries. Section 4 examines whether East Asia satisfies the optimum currency area (OCA) criteria. Section 5 discusses the issues related to the reversed sequence of introducing monetary integration ahead of trade integration in East Asia. Finally, Section 6 concludes the paper.

2. Europe's Experience: Trade Integration ahead of Monetary Integration

Since World War II, European countries have identified exchange rate stability as a key policy target. However, no serious thought was given to creating a regional exchange rate coordination mechanism, simply because the Bretton Woods system could provide stability for the European currencies.

The great event in Europe in the late 1950s was the formation of the European Economic Community (EEC). In March 1957, six European countries signed the Treaty of Rome to build a customs union and the Common Agricultural Policy (CAP). As a first step, the Treaty of Rome committed the six member countries to eliminate trade barriers within the Community and to establish a Common Commercial Policy (CCP), thereby creating a customs union. On the other hand, the Six moved forward with the CAP, which entailed freer trade within Europe but greater insulation of European agricultural markets from external competition.

The main issue for the Community in the monetary area in the 1960s was the question of whether exchange rate adjustments could disrupt the functioning of the customs union and the CAP. In Europe, it was of utmost importance to defend regional

parities from the beginning. The IMF has taken over this concern and supported securing the system of fixed exchange rates and balance of payments. The European countries did not have much to do in the monetary area.

In the later 1960s, divergences in inflation rates and external balances began to appear among member states of the European Community. A speculative attack against the French franc in favor of the deutsche mark in May 1968 put a great deal of pressure on the bilateral parities of Community currencies. At the same time, policy circles started to discuss the necessity to coordinate economic and monetary policies among the member states and establish monetary facilities for mutual balance of payments assistance. The Werner Plan was completed in 1970 and endorsed by the Council of Ministers in 1971. The Plan had recommended the rapid adoption of a common currency. Three stages were envisioned, including the pooling of foreign exchange reserves for joint intervention. However, the Plan was immediately abandoned, because it was deemed wholly unrealistic.

The main practical outcome was a new system (the 'Snake') for limiting fluctuations in exchange rates between EC currencies. But, with the collapse of the Bretton Woods system, EC member countries merely sought to solve its own problems without regarding Europe as a single entity. The economic policy of each country was made at the national level: the British government soon removed the pound from the Snake, and other EC governments (the French twice) followed this lead, creating an unsustainable climate in which further progress towards a monetary union was impossible.

The nine EC member countries were divided into two groups with very different economic performance and exchange rate regimes by 1977.[1] One group had achieved some success in keeping inflation moderate and had maintained the outward appearance of having the intention of participating in the Snake System. Germany, Benelux countries and Denmark, with Norway as an associate member belonged to this first Group. The other group floated their currencies individually and all experienced high inflation, current account deficits and substantial depreciation. The currencies in the second group were the pound sterling, the French franc, the Italian lira and the Irish punt. It seemed difficult to devise an exchange rate system which comprised both groups of countries.

On the trade integration front, internal trade liberalization also slowed during the

[1] On January 22, 1972, after difficult negotiations, the United Kingdom, along with Ireland, Denmark, and Norway, signed the Treaty of Accession with the European Community. In a subsequent referendum, the Norwegian electorate rejected membership.

1970s, as the elimination of tariffs and quotas exposed the protective effect of numerous, seemingly immutable, behind-the-border barriers. The only important milestone toward European integration during the 1970s was the creation, in 1979, of the European Monetary System (EMS), with its companions, the European currency unit (ECU) and the Exchange Rate Mechanism (ERM). The three existing credit facilities – the very short-term financing facility (VSTF), the short-term monetary support facility (STMS), and the medium-term financial assistance facility (MTFA) – were also extended in the EMS. The EMS was able to bring together European countries to cooperate again in the monetary sphere and became the focus of the monetary cooperation policy. The EMS enjoyed stability without realignments and additional participants in the second half of the 1980s.

As late as 1988, the idea of a monetary union resurfaced. The Hannover European Council of June 1988 set up a Committee for the Study of Economic and Monetary Union in the European Community, presided over by the president of the EC Commission, Jacques Delors. In April 1989, the so-called Delors Committee published its *Report on Economic and Monetary Union in the European Community*, proposing a three-stage process to economic and monetary union (EMU). It stressed the need for greater coordination of economic policies, rules on the size and financing of national budget deficits, and a new, completely independent institution which would be responsible for the Union's monetary policy. However, this proposal was met with the same skepticism that was encountered by the earlier Werner Plan. It took an exceptional event, the collapse of the Berlin Wall, to trigger a serious reassessment that no political leader could have predicted only a few weeks earlier (Schweickert, 2002; Wyplosz, 2001).

The EMU negotiations were concluded at the European Council in Maastricht on 9-10 December 1991. The Maastricht Treaty provides for economic and monetary union to be introduced by the end of the century in three successive stages. The negotiations concerning the transitional phase proved particularly difficult.[2] The European Monetary Institute (EMI), established in January 1994, as a precursor to the European Central Bank, played an important role in facilitating and reinforcing coordination of national monetary policies during the transition. The Stability and Growth Pact also clarified the

[2] Immediately after the crisis, fears were widespread that the Maastricht process was doomed (Eichengreen and Frieddon, 2001). This pessimism turned out to be exaggerated. First, even governments that had been forced to devalue reiterated their commitment to the completion of the monetary union and were able to keep their currencies close to their central rates. Second, economic developments became more favorable because German unification effects became weaker. Finally, the Growth and Stability Pact was added for dealing with "excessive deficits" (Schweickert, 2002).

Maastricht Treaty's provision for dealing with "excessive deficits" and provided an institutional framework for its enforcement, in part through strengthened surveillance and coordination of economic policies.

Europe's experience suggests that exchange rate stability was, in fact, the lynchpin of efforts to strengthen trade integration. Whenever there was some doubt about exchange rate stability, trade integration also becomes sluggish. In this sense, a certain form of monetary integration is a prerequisite for successful trade integration.

3. Is There Any Difference in East Asia?

Unlike in Europe, historically there has been much less active movement towards regionalism in East Asia. Besides the political diversity in East Asia, most East Asian countries have been more reliant on the U.S. and EU markets, so there has been less incentive for them to expand trade integration within the region. In fact, the first major attempt was made only in 1992 when 6 ASEAN countries agreed to launch a scheme for ASEAN free trade.[3] Thereafter, the ASEAN free trade area has continued to extend so that it now includes the whole area of Southeast Asia.

Recently, China has become more active in cooperating with the ASEAN countries towards a free trade agreement. In November 2001, China committed to negotiating a free trade agreement with ASEAN. Japan also formed a joint study group with ASEAN to find the feasibility of Japan-ASEAN FTA. However, a region-wide East Asian FTA, covering ASEAN+3 countries, would be slow to materialize because China and Japan are seeking formal trade arrangements bilaterally rather than multilaterally. The current pattern of regional trade agreements in East Asia is also bewildering (Scollay and Gilbert, 2001), essentially consisting of a web of bilateral arrangements, many of which are still on the drawing board. There has apparently been no formal attempt at building a regional multilateral agreement similar to the Common Market. Bilateral negotiation is unlikely to foster a collective framework (Wyplosz, 2002).[4]

Furthermore, for Korea and Japan, the most difficult problem in reaching a free trade agreement with other Asian countries is the agricultural sector. In fact, any trade agreement, because of its differential effects on various sectors, faces the possibility of

[3] The six countries are Malaysia, Indonesia, Philippines, Singapore, Thailand and Brunei.
[4] On the monetary front, the preference towards regional exchange rate arrangements become less strong in East Asia because of the absence of multilateral trading arrangement at the regional level.

severe resistance from domestic vested interest groups. Korea and Japan have been heavily subsidizing their agricultural sectors, and there are still mounting concerns that opening this sector, although beneficial for the economy as a whole, will ruin those who rely on it for their livelihood. Since many people in Korea and Japan have family roots in the agricultural region, and in many cases maintain close ties with relatives in the rural areas, any policy that inflicts heavy losses on the agricultural sector will be politically unpopular. Unlike the free trade agreement, financial and monetary cooperation among East Asian countries may meet with less political resistance due to its more neutral consequences.

Since the currency crisis, East Asian countries have come to realize that they need some arrangements for policy coordination and monetary arrangements to stabilize the exchange rates of regional currencies. While Japan's attempt to establish a so-called Asian Monetary Fund (AMF) was not successful, the more recent agreement of the Chiang Mai Initiative (CMI) indicates that ASEAN+3 can concur on substantial arrangements towards financial integration in the region. In this context, it is no wonder that the creation of a regional monetary system or monetary union in East Asia similar to the type adopted in Europe has been recently proposed and discussed in academic circles and even policy-making groups.

The background of attempts to introduce a monetary union in East Asia seems to have multifaceted aspects. Firstly, many East Asian developing countries are still searching for an optimal exchange rate regime. After the Asian currency crisis, most East Asian developing countries abandoned their fixed exchange rate regimes and nominally adopted free-floating regimes (in many cases, with a policy focus on inflation targeting). However, it is no exaggeration to say that there still exists a "fear of floating" among many monetary authorities (Calvo and Reinhart, 2002). This makes it difficult for many Asian countries to take advantage of the benefits of the floating exchange rate system, such as the autonomy of monetary policy. Of course, there is no point returning to the previous case of the *de facto* fixed exchange rate regime which might be vulnerable to another currency crisis. Nevertheless, the regional monetary grouping could be an alternative to both fixed and flexible rate regimes at the national level.

Secondly, a monetary union in East Asia may be necessary to avoid competitive devaluation of regional currencies. For many East Asian developing countries with common export markets, the fluctuation of their exchange rates against the yen could critically affect the competitiveness of their exports. In fact, it was a depreciation of the yen against the dollar that resulted in the current account deficit for these countries in the mid-1990s, which might have been closely related to the subsequent currency crisis

in the region. Kwan (2001) points out that the pro-cyclical aspect of capital flows in and out of East Asia is closely related to the instability of the yen-dollar rate. Although the stability of the G-3 currencies (dollar, euro and yen) is highly beneficial to small open emerging market economies, the political will for a project of G-3 currency stability through cooperative schemes is hard to spot, particularly in the United States. Consequently, a regional response seems to be a plausible second best.

Thirdly, the stabilization of exchange rates will help East Asian countries achieve their full potential for growth and development. Most Asian countries have relied on exports as a key to their rapid growth. Stabilized exchange rates, hence reduce exchange risks, encourage firms in the export sector and make it easier for Asian banks and corporations to borrow abroad. By forming a monetary union, East Asian countries can expect their common currency to remain stable against outside currencies as well as their own currencies to stay stable against each other.

Given this backdrop, the Asian currency crisis in 1997 and the launch of the euro in 1999 made the possibility and desirability of introducing a more highly sophisticated form of economic integration such as a regional monetary union in East Asia a point of debate.[5] However, it has often been argued that East Asia is less self-contained than Europe. Many East Asian countries rely as heavily on the U.S. and Europe for export markets as they do on other Asian countries, including Japan (Eichengreen, 2002; Kawai, 2001; Ogawa and Ito, 2000). In Europe, it was of utmost importance to defend regional parities given the high degree of regional trade interdependence. On the other hand, despite increasing intra-regional trade dependence in East Asia, a plan to stabilize exchange rates vis-à-vis a basket of major international currencies rather than intra-regional exchange rates has been proposed (Kawai, 2001; Ogawa and Ito, 2000; Williamson, 1999). In Section 4, we will consider whether East Asian countries are ready to adopt a common currency in terms of optimum currency area (OCA) criteria.

Another important issue is to analyze the advantages of introducing monetary integration ahead of trade integration. While Europe started with trade integration, some observers note that East Asia is attempting to start monetary cooperation before successfully completing a regional multilateral trade agreement (Bergsten 2000; Bird and Rajan 2001; Dieter 2001). Since trade agreements among East Asian countries are slow to materialize and tangled in a complex web of bilateral agreements, monetary regionalism might be an alternative route to regional integration in East Asia.

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[5] There are various forms of abolishing exchange rates all together, including dollarization, currency boards, and currency union (or regional monetary arrangement). In this paper, only the form of a regional currency union will be considered.

4. Does East Asia Satisfy Optimum Currency Area Criteria?

The seminal paper written by Robert Mundell (1961) was the point of departure for the huge volume of literature on the topic of optimum currency areas. Mundell observed that an exchange rate adjustment which permitted the pursuit of independent monetary policies in two countries (say, the USA and Canada) was of little use if the disturbance depressed one region within both countries (say, western Canada and the western USA) while simultaneously boosting other regions within both (say, eastern Canada and the eastern USA). In this case, there could be an efficiency argument for forming one currency area comprised of the two western parts and another currency area made up of the eastern parts. In response to this disturbance, the western regions can then adopt one policy, the eastern regions another, and the exchange rate between them can adjust accordingly, while the advantages of a common currency are preserved in the form of reduced exchange rate risk and lower transaction costs within the eastern and western regions. In Mundell's framework, the incidence of disturbances across regions is a critical determinant in the design of currency areas (Bayoumi and Eichengreen 1993, p. 195).

Subsequent literature explored the determinants of the incidence of shocks (McKinnon 1963; Kenen 1969). Most of the literature considers four criteria for forming a monetary union – interdependence through trade, symmetry of shocks, mobility of factors of production, and convergence of macroeconomic policies. First, countries that are highly integrated in terms of international trade stand to benefit more by forming an OCA since a common currency will result in greater savings on transaction costs and reduce the risks associated with using different currencies. Therefore trade interdependence is a very important condition for forming an OCA.

The second criterion for an OCA points to the possibility that countries with symmetric business cycles are more likely to be members of an OCA. As shown above in Mundell's intuitive explanation, regions with symmetric shocks can take the same monetary policy against other regions receiving different shocks. Since adopting a monetary union implies the abandonment of autonomous monetary policies, the costs of forming a monetary union with regions of asymmetric shocks will be tremendous. Kenen (1969) also highlighted the degree of industry or product diversification as a determinant of the symmetry of shocks. When two regions are highly specialized in the production of distinct goods, their prices are affected very differently by disturbances.

By contrast, when the two regions have the same industrial structure and produce the same goods, disturbances are more likely symmetric.

Third, if mobility of labor and capital is permitted, the local shock could be resolved without incurring great adjustment costs. Therefore, countries that want to join the monetary union have to permit factor mobility more freely. However, Mundell (1961) believed that labor mobility was not the most important condition for an OCA. Even if labor mobility were not perfectly possible, a country could gain various benefits by participating in an OCA. McKinnon (1963) also insisted that the currency arrangements themselves would affect factor mobility, so the extent of factor mobility had to be considered *ex post facto*.

Finally, when countries within the region have different policy targets, their interests are intensely conflicting with respect to the same external shock so that a coordination system for exchange rate stability could easily collapse (Dixit, 2001).[6] In Europe, a high degree of convergence of macroeconomic policies among the member countries in the EMU was required to push forward the implementation of a single monetary policy.[7] A set of policy parameters was closely watched to ensure that policy actions were coordinated effectively.

Among the four criteria, the issue of asymmetric responses to external shocks has been the focal point of the empirical analysis of the OCA criteria. Most analyses have focused on whether countries participating in a monetary union reacted symmetrically in terms of shocks. Bayoumi and Eichengreen (1994), based on a breakdown of shocks between demand and supply shocks *a la* Blanchard and Quah (1989), find that there is little difference in the asymmetry of both shocks between Europe and East Asia. Eichengreen and Bayoumi (1999), using the OCA index developed in Bayoumi and Eichengreen (1996), find that the economies of East Asia are more or less as plausible candidates for a monetary union as the members of the EU. Bayoumi and Mauro (1999) also find that, while East Asian countries are less suited for a regional currency arrangement than Europe, the difference is not large.

More recently, Baek and Song (2002) and Lee, Park and Shin (2002) also confirm that East Asia is as plausible a candidate for a common currency area as the Euro area. Especially, Lee, Park and Shin (2002) improve the methodology of assessing the

[6] Dixit (2001) raised the issue of the robustness and sustainability of the EMU's institutional arrangements by constructing various models when member countries have different policy objectives. Hughes Hallett and Weymark (2002) also stress the potential tensions among union members that might threaten the stability of the union. The types of policy heterogeneity include differences in national preferences for price stability, output growth, and income distribution.

[7] All EU members were allowed to participate in the transition process to the EMU, but they had to meet all the convergence criteria stipulated by the Maastricht Treaty.

symmetry of shocks by considering a model in which the output of an economy is influenced by three different shocks - global, regional, and country-specific. The importance of a common regional shock is interpreted to provide a case for a common regional currency. They find that the size of regional shocks is comparable to that of Europe, which is interpreted as an indication that East Asia is well suited for a monetary union.

On the other hand, Wyplosz (2001) and Chow and Kim (2000) have a less positive view on whether East Asia satisfies the preconditions for implementing a monetary union. Eichengreen and Bayoumi (1999) also argue that East Asia lacks important institutions for implementing a monetary union, such as sound financial systems, political network, and a long integrationist tradition. We will discuss this issue in more detail in Section 5.

5. Introducing a Monetary Union ahead of FTA

In this section we will discuss issues related to the reversal of sequence between an FTA and a monetary union. We organize this section into five subsections. The first four subsections generally discuss the advantages of introducing a monetary union ahead of forming an FTA. The last subsection does not point to a disadvantage, but explains the difficulty of introducing a monetary union in general.

Monetary Union and Trade

In the previous section, we find that most studies on this topic agree that the costs of a monetary union in East Asia are not as high as they were for Europe. However, the fact that most East Asian countries are more dependent on the U.S. and EU markets as outlets for their exports suggests that the potential benefits from a monetary union might also not be as large as they are for Europe (larger intra-regional trade implies larger benefits). Table 1 shows the pattern of the changes in the importance of intra-regional trade for East Asia and Europe. In the table, intra-regional trade is measured by the share of an economy's total trade with the rest of the economies that belong to the same region in its total trade. While the gap has narrowed in recent decades, intra-regional trade in Europe (64.4 in 1980 and 66.4 in 2000) is much higher than in East Asia (51.3 in 2000).

If East Asia were to follow the same strategy as Europe, then it would need to

foster further trade integration until the benefits of a monetary union become high enough. In fact, intra-regional trade in East Asia has also increased from 41.9 in 1980 to 51.3 in 2000. If this trend continues, eventually the level of intra-regional trade in East Asia could reach the same degree of internal trade in Europe at the time of the euro's introduction. Since the East Asian market, especially that of China, is rapidly expanding, East Asia can be as self-contained as Europe in the future. However, considering the speed of increase in intra-regional trade in the past 20 years, for East Asian countries to reach the current level of Europe, it may take another 20 years. In particular, given the current low level of intra-regional trade in Japan (38.1) and Korea (42.2), far below the average (51.3), the region's two major trading countries need to play a more active role in promoting intra-regional trade.

However, one advantage of immediately introducing a monetary union is that it may speed up intra-regional trade integration significantly without any additional efforts such as forming a free trade agreement. Rose (2000) estimates the degree to which trade is affected when exchange rate variability is eliminated through a monetary union. Using data for a large number of countries during the 1970-1990 period, he finds that bilateral trade is higher for a pair of countries that use the same currency than for two countries using their own currencies. More precisely, the coefficient on a monetary union dummy in an empirical model of bilateral trade is found to be positive and significant in both economic and statistical terms. The value of the coefficient suggests that membership in a currency union, *ceteris paribus*, more than triples bilateral trade.[8] This is true even after controlling for a number of other factors that might affect trade through the gravity model, which shows that trade between a pair of countries is proportional to their combined incomes, and inversely proportional to the distance between them. More importantly, a free trade agreement is also one of the controlled factors in his analysis.

Whether Rose's findings are directly applicable to East Asia or not is an interesting question. Can a monetary union in East Asia provide the important advantage of bypassing the difficult political procedures of free trade agreements? However, there must be some caveats in interpreting Rose's estimate. His empirical findings are based on cross section data and, in most cases, countries in monetary

[8] Rose (2000) emphasizes a phenomenon known as "home bias" in international trade – much more intense trade inside countries than between countries. He points out that sharing a common currency is a much more serious and durable commitment than a fixed rate among countries. McCallum (1995) quantifies the size of the intra-regional bias at more than twenty to one, finding that trade between two Canadian provinces is more than 20 times larger than trade between a comparable Canadian province/American state pair. Rose seems to regard this home bias effect as one of the main driving forces for increasing trade through monetary union.

unions are small in size. Hence at least two things are not clear; (i) how long it will take for a country to triple its trade with other member countries if it joins a monetary union and (ii) whether the estimate is also applicable to a large country in East Asia. Since increasing trade three-fold is not easy to accomplish, many people have questioned Rose's estimate.[9]

Glick and Rose (2001) respond to the criticism by estimating the effect of monetary union on trade using a time series variation. They use a data set covering a large number of countries for fifty post-war years. During this sample period, a large number of monetary unions dissolved, providing both time series and cross-sectional variations on the incidence of monetary unions. Specifically, over one hundred country-pairs dissolved common currency linkages during the sample period. By comparing the trade of these countries before and after this regime change, they estimate the effect of monetary union membership on trade. Their empirical results also confirm those of Rose (2000). They find an economically and statistically significant effect of monetary union on trade using a number of different panel estimation techniques. Their estimate is that bilateral trade rises/falls by about 100% as a pair of countries forms/dissolves a monetary union, with other conditions unchanged.

While the time series evidence of a monetary union's effects on trade is smaller than that of cross section evidence, it is still large at 100%. Frankel and Rose (2002) go one step further to estimate the effects of monetary union via trade on output using a two-stage approach. In the first stage, the results show that a monetary union leads to a three-fold increase in trade. Moreover, there is no evidence of trade diversion. In the second stage, their estimates suggest that every 1% increase in trade (relative to GDP) raises per capita income by roughly 1/3 of a percent over 20 years.[10] These empirical results support the hypothesis that the beneficial effects of a monetary union on economic performance are garnered through the promotion of trade rather than through a commitment to a non-inflationary monetary policy or other macroeconomic influences.

Monetary Union and Business Cycle Co-movement

[9] Rose's estimate seems to be especially large given that, in the literature, estimates of the effect of reduced exchange rate volatility on trade are small. See Alesina, Barro and Tenreyro (2002) for a technical discussion on empirical problems, such as aggregation bias, omitted variable regression, self-selection, sample selection and so on.

[10] As the deadweight losses of using different currencies vanish, competitive pressures increase and consumers gain static 'Harberger' triangles. The size of these gains may be large. Frankel and Romer (1999) estimate that increasing the ratio of trade to GDP by one percentage point raises per capita income by between one-half and two percent.

Generally, when a number of countries adopt a common currency, each of the countries must yield its independent monetary policy to a supranational authority. When asymmetric macroeconomic shocks occur across member countries, they are no longer able to use the monetary policy to respond. This may be considered a potential cost of monetary union according to the classical theory of the optimum currency area. However, the monetary policy itself could be a shock that leads to macroeconomic instability. A monetary union can prevent asymmetric monetary shocks through a single monetary policy.

The fact that a monetary union leads to a significant increase in trade among member countries also suggests another important implication for adopting a common currency. Countries with highly positively correlated business cycles are more likely to join a monetary union, other things equal. However, because business cycle correlation is closely related to trade intensity among countries, by affecting trade intensity among member countries, a monetary union can also alter the costs of sacrificing independent monetary policy *ex post facto*. This is what Frankel and Rose (1998) emphasized as the endogenous nature of a decision to join a monetary union. In other words, a naïve examination of historical data may give a misleading picture of a country's eligibility for entry into a monetary union since the economic structure is likely to change dramatically as a result of a monetary union.[11]

To see whether a monetary union increases or decreases the costs of joining one *ex post facto*, the key is to verify how increased trade affects business cycle co-movement. From a theoretical point of view, the effects of trade integration can lead to business cycle synchronization in either direction – convergence or divergence. Eichengreen (1992), Kenen (1969) and Krugman (1993) argued that as trade linkages increased, greater specialization of production would occur, resulting in less synchronization of business cycles. In particular, this is more so if business cycles are dominated by industry-specific technological shocks.

Frankel and Rose (1998) countered Krugman's argument, insisting that when demand shocks were dominant and intra-industry trade was more persuasive than inter-industry trade between the countries adopting the single currency, business cycles

[11] Most previous studies focus on the empirical question of whether or not a monetary union leads to structural changes in economic fundamentals, which favor business cycle synchronization. Recently, Corsetti and Pesenti (2002) offer a distinct argument for endogenous optimal currency areas, with conceptual roots in the Lucas critique. They show that the adoption of a common monetary policy can be self-validating, independent of economic integration. Their assertion is rather compelling. With incomplete exchange rate pass-through, the optimal monetary policy is to respond symmetrically to shocks anywhere in the region.

would become more positively correlated as trade becomes more integrated. In the literature, there are at least two additional important linkages between business cycle co-movements and increased trade. First, if demand shocks drive a boom in one country, the effects can spill over to trading partners through an increased volume of imports. Second, increased trade may create a greater need for more coordinated fiscal as well as monetary policies, which synchronize policy shocks. Both of these linkages imply that increased trade leads to tighter business cycle co-movements.

In sum, the theoretical implications of more trade integration on business cycle co-movements are not clear; to test the validity of the theories, an empirical investigation is in order. Canova and Dellas (1993) investigated this issue and found that there was some evidence of trade affecting the transmission of disturbances across countries but it was not robust to the choice of de-trending method. Frankel and Rose (1998) found more positive results. Based on 21 industrialized countries, they found that the more countries trade with each other, the more highly correlated are their business cycles. That is, there is a strong positive relationship between the degree of bilateral trade intensity and the cross-country bilateral correlation of outputs.

These results can be interpreted to assure an early introduction of a monetary union; it will also decrease the costs of adopting a monetary union by lowering asymmetric shocks through increased trade. Even a country that is not suited *ex ante* to joining a monetary union can be justified *ex post facto* in joining one due to lowered asymmetrical shocks. However, an important step is missing in Frankel and Rose's analysis. Frankel and Rose (1998) conjectured that their results are due to intra-industry trade, but did not try to identify the channel through which increased trade affects business cycle co-movements.

Recently, Fidrmuc (2001) has shown that, based on a cross section of OECD countries between 1990 and 1999, convergence of business cycles relates to intra-industry trade, but there is no direct relation between business cycles and bilateral trade intensity. Loayza, Lopez and Ubide (2001) analyze the East Asian countries as a region which shows significant short-run and long-run co-movement of business cycles. They find that this co-movement is based on the countries' highly similar trade structures. Shin and Wang (2002) also find that intra-industry trade is the major channel by which the business cycle of Korea becomes synchronized with that of 11 other Asian economies, although increased trade itself does not necessarily lead to close business cycle coherence. These recent empirical analyses suggest that business cycle co-movements are strengthened only when the increased trade is accompanied by more intra-industry trade. While a monetary union may increase trade afterwards, if mainly

inter-industry trade occurs, business cycle co-movements can be weakened and the monetary union become undesirable *ex post facto*.

Table 2 shows the trends in intra-industry trade for East Asian and European countries. We calculated an index of intra-industry trade intensity à la Grubel and Lloyd (1975). In constructing the measure, an important consideration is to decide how detailed a classification of industries is used. Rather than a priori determining a proper industry classification, we construct three measures based on two (IIT-2), three (IIT-3) and four (IIT-4) digit industry classifications following the International Standard Industrial Classification (ISIC).[12] For each country, we report the average intra-industry index for the trade with other countries in the same regions, using the trade volume as weights.

Most empirical studies widely confirm the hypothesis that measures of intra-industry trade relative to inter-industry trade decline steeply as the distance between the trading partners increases.[13] In light of this finding, the intra-industry trade among geographically neighboring East Asian countries should be high. However, the intra-industry trade index in East Asia was much lower than that of Europe in 1980: 31.3 vs. 60.8 for IIT-2, 22.6 vs. 52.0 for IIT-3 and 20.0 vs. 46.6 for IIT-4. This reflects that, in 1980, European countries, compared to East Asian countries, had more homogeneous industry structures.[14] The index is monotonically increasing in both regions, but the speed is much faster in East Asia, so that the gap becomes much smaller in 1999: 56.1 vs. 67.9 for IIT-2, 51.1 vs. 58.9 for IIT-3 and 45.0 vs. 52.3 for IIT-4. This is good news for a monetary union because trade in East Asia not only increases but also occurs more and more within the same industries. If this tendency continues, then business cycle co-movement can be strengthened.

When we examine individual countries, this index is low in China, Indonesia, Japan, Korea and Thailand – below the average in the region. Furthermore, the index is increasing in most East Asian countries except for Hong Kong, China and Korea. If this trend continues for these countries, then they are likely to have more asymmetric shocks

[12] Industry-level trade data are available in Nicita and Olarreaga (2001), which reorganize the United Nations Statistics Department's Comtrade database through the World Bank's World Integrated Trade Solution (WITS) software. The industry disaggregation in the database follows the International Standard Industrial Classification (ISIC) and is provided at the 2 digit level (9 industries), the 3 digit level (28 industries) and at the 4 digit level (81 industries) manufacturing industries only.

[13] See for example, Balassa (1986a, 1986b), Balassa and Bauwens (1987, 1988), Bergstrand (1983), Culem and Lundberg (1986), Hummels and Levinsohn (1995), Loertscher and Wolter (1980), and Stone and Lee (1995).

[14] Rice, Stewart, and Venables (2002), by using the data of 22 OECD countries, find that closer countries tend to have more similar structures of underlying export supply and import demand, and as a consequence, intra-industry trade tends to be relatively high between close (and hence similar) countries.

over the business cycle, which may prevent them from joining a monetary union. However, it is very difficult to predict how this trend will change in individual countries without analyzing what factors contribute to fostering inter- or intra-industry trade. This will be a good subject for future research.

Preventing Currency Crises and Saving Foreign Reserves

In Rose's sample (2000), the 284 pairs of a monetary union with positive amounts of bilateral trade are divided into 108 cases of country pairs that are also members of a formal free trade agreement (FTA) and 176 country pairs that are not (Melitz, 2001). Since monetary unions may exaggerate exceptionally close trade ties through a formal FTA, it is necessary to control the effect of FTAs on trade to correct the bias. In Rose (2000), countries that use the same currencies tend to trade disproportionately, even holding the various factors constant (including FTAs). A monetary union is expected to increase trade, thereby promoting welfare. But, unlike FTAs, a monetary union goes beyond anticipated welfare gains from larger trade. In this subsection, we will discuss additional benefits from a monetary union.

It is clear form the experience of the East Asian crisis that an FTA is not helpful in preventing or mitigating a financial crisis. While Indonesia, Malaysia, the Philippines and Thailand are all members of the ASEAN free trade area (AFTA), AFTA did not play any role in rescuing those countries. A more vivid example can be found in the Common Market of the South (MERCOSUR) which is composed of Argentina, Brazil, Paraguay and Uruguay. Since its creation, MERCOSUR has gone from a free trade area to an imperfect customs union, adopting economic obligations in common. In the area of macroeconomic coordination, it has established formal targets for fiscal deficits, foreign public debt and inflation. However, those macroeconomic targets were not achieved because there were no strong incentives to do so in the absence of monetary integration.

By contrast, a monetary union implies a more durable political commitment on the macroeconomic policy front. During the transition period, sound macroeconomic preconditions must be fulfilled. Once a common monetary policy is implemented, more comprehensive monitoring and surveillance activities over member economies are put in place for maintaining the stability of the system. Concerted and coordinated macroeconomic policies are essential. To the extent that a lack of internal disciplines for monetary policy tends to persist, such countries would benefit the most from the

introduction of an external discipline from a monetary union (Alesina, Barro and Tenreyro, 2002).

In addition, monetary union is a scheme for reducing foreign currency reserves at the national level. Now East Asian countries are accumulating a huge amount of foreign reserves to prevent future crises. As shown in table 3, foreign exchange reserves held by East Asian economies in 2001 total as much as US$1 trillion. Japan's reserve assets totaled US$388 billion as of the end of December 2001. China, together with Hong Kong, has reserves of US$333 billion. The current level of foreign reserves in East Asia is clearly excessive compared to the optimal level. This is clear when we compare this amount to the foreign reserves held by the monetary union in Europe, which is about one sixth of those held in East Asia. If the foreign reserves in East Asian countries were pooled through a central bank of a monetary union, each country would greatly benefit from it.

Capital Market Integration

While a free trade agreement is not a precondition for a monetary union, a monetary union usually presupposes that capital is freely mobile across member countries. East Asian countries have been rapidly deregulating and opening up their capital markets since the 1990s. Hence completely opening capital markets among East Asian countries with the introduction of a currency union will not be a difficult task to accomplish. As pointed out in Lee, Park and Shin (2002), however, East Asian capital markets are more closely tied to the global financial centers such as the U.S. and the U.K. and there is no clear evidence that the capital markets of the East Asian countries are more regionally integrated. This fact hints that large benefits may not result from further financial integration in the region through a monetary union.

Lee, Park and Shin (2002) explain why financial integration is taking place at the global level, not at the regional level. First, unlike home bias at the country level, there are not many reasons for home bias to occur at the regional level. For example, hedging is not especially easier by holding a regional portfolio. Information superiority at the regional level does not seem to be enormously more advantageous than at the global level. Second, the institutional and structural characteristics of East Asian economies, particularly in the financial systems are likely to limit the extent of regional financial integration in the future. Especially underdevelopment of financial systems that are largely bank-oriented leave corporations and financial institutions in the region heavily

dependent on Western securities firms, investment banks, insurance companies, and other non-bank financial institutions. Further the rapid development in information and communication technology enables local branches of western financial institutions to be well connected to the centers at low costs. Third, the savings and investment profile is not well matched within the region. Since the outbreak of the crisis in 1997, all of the East Asian crisis countries have become net lenders and are likely to continue being so. Hence the East Asian countries must rely on other areas as outlets for their net savings.

However, there is a possibility that introducing a monetary union can accelerate the financial integration in East Asia. As pointed out in the case of trade, a monetary union can endogenously change the nature of financial cooperation among member countries. For example, a monetary union can eliminate the necessity of using a foreign currency – particularly the U.S. dollar – for both trade in goods and financial transactions among member countries, leaving fewer opportunities for foreign financial institutions to step in. The absence of exchange risk among member countries can also facilitate investment in their financial assets.

Free capital mobility was not allowed until the last stage of currency unification in Europe. This is because, as explained in Wyplosz (2001), the conflict between exchange rate stability and the active use of monetary policy was reconciled through internal and external financial repression. In particular, external financial repression took the form of capital controls so that arbitrage relative to the world interest rate could be prevented. Therefore, while Europe has been quite fast at deepening its internal trade, it has been notoriously slow at liberalizing its financial markets, both internally and externally. As Europe has liberalized its capital accounts, such a formal coordinated (fixed but adjustable) exchange rate mechanism was greatly endangered by volatile capital movements. When capital controls were lifted, monetary union was preferred to maintaining national monetary policies.

Political Aspects of a Monetary Union

One of the most important hindrances to introducing a monetary union in East Asia is related not to economic factors but to political factors. According to Eichengreen and Bayoumi (1999), the debate over monetary integration in Western Europe has been closely related to discussions of political integration and the creation of a supranational entity empowered to override previously sovereign national governments. While Europe has a long history of movement towards integration, Eichengreen and Bayoumi (1999)

point out that there has been resistance to the creation of a supranational authority and the construction of institutional restraints on national policy every step of the way.

In this regard, East Asia has much weaker precedents of movement towards political integration. For sure, this will act as a major obstacle to the creation of a monetary union. Traditionally, East Asian countries have put much emphasis on their national sovereignty. Given that a national currency is an important symbol of sovereignty, relinquishing it can be interpreted as an act of humiliation to East Asian people.

Unlike trade integration, however, the nature of political objection is more or less emotional and not based on differential economic consequences of a monetary union to different sectors of the economy. In this sense, economic conflicts among members of a monetary union can be less severe. This different nature of economic conflicts in forming monetary union suggests that political resolution can be rather easier in some sense.

6. Conclusion

Regionalism is taking two forms. It is occurring firstly through free trade arrangements and secondly through monetary arrangements. These trade and monetary integration processes imply that geographically proximate countries hang together to foster trade on the one hand and to manage intra-regional exchange rate stability on the other. These two processes interactively reinforce each other.

In this paper, we highlight the issues related to the reversal of sequence between trade integration (free trade agreement) and monetary integration (a monetary union). While the Euro area pursued trade integration first, from a theoretical point of view, there is no clear reason for introducing trade integration ahead of monetary integration. In fact, even in Europe, trade integration slowed down whenever there were concerns about exchange rate stability among member countries. In this regard, an important pre-condition for trade integration is a certain form of monetary cooperation.

We believe that there are many good reasons for forming a monetary union before a free trade agreement. For example, a monetary union can increase trade among member countries quite significantly by serving as a device to avoid a bottleneck that can be encountered during the process of a free trade agreement. Given that this increased trade is likely to occur mostly within the similar industries, weakening asymmetric shocks across member countries will also decrease the costs of maintaining

a monetary union. Further a monetary union can also accelerate financial integration in the region, which might not be accomplished otherwise. Hence, a monetary union is a self-validating process.

A major hindrance to a monetary union in East Asia, however, is the lack of historical experience in regionalism in the region. Whatever economic benefits a monetary union brings, however, it is unlikely to be realized in the near future if each country is unwilling to cooperate in the political avenue.

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Table 1. Trends of Intra-region Trade in East Asia and Europe

	Intra-region Trade (percentage of total trade)		
	1980	1990	2000
East Asia			
China	42.4	58.9	48.7
Hong Kong	46.7	60.4	64.1
Indonesia	62.6	56.8	54.4
Japan	23.8	28.0	38.1
Korea	32.7	34.2	42.2
Malaysia	49.2	55.1	56.1
Philippines	37.4	40.0	46.5
Singapore	49.4	50.7	57.5
Taiwan	34.9	43.1	50.9
Thailand	40.1	47.5	54.2
Average	*41.9*	*47.5*	*51.3*
Europe			
Austria	69.8	75.6	71.0
Belgium	74.9	80.4	72.5
Denmark	74.4	75.5	74.8
Finland	57.4	66.6	61.7
France	57.8	67.1	66.7
Germany	63.9	67.4	59.1
Greece	48.2	70.1	56.1
Ireland	77.6	76.1	61.3
Italy	56.1	67.3	59.1
Netherlands	70.5	77.0	67.3
Norway	78.6	75.2	73.7
Portugal	58.7	78.5	78.6
Spain	43.2	68.2	67.8
Sweden	73.8	78.9	68.4
Switzerland	69.0	72.1	66.9
United Kingdom	55.8	62.8	57.0
Average	*64.4*	*72.4*	*66.4*

Source: International Monetary Fund, *Direction of Trade Statistics*.

Note: this table is Table 4 in Lee, Park and shin (2202). Intra-region trade is measured by the share of an economy's trade with the rest of the economies that belong the same region, in total trade.

Table 2. Trends of Intra-Industry Trade in East Asia and Europe (percentage)

	1980			1990			1999		
	IIT-2	*IIT-3*	*IIT-4*	*IIT-2*	*IIT-3*	*IIT-4*	*IIT-2*	*IIT-3*	*IIT-4*
East Asia									
China	17.7	14.2	13.5	60.7	55.8	51.7	45.8	42.7	39.0
Hong Kong	45.1	42.2	41.1	58.4	57.1	55.8	56.8	56.6	56.5
Indonesia	33.6	6.7	5.8	34.1	17.2	13.6	44.9	36.1	26.0
Japan	29.8	18.4	16.4	37.5	30.3	28.2	56.4	49.3	41.0
Korea	35.8	30.2	28.2	44.4	40.1	37.9	43.4	36.0	32.8
Malaysia	39.6	27.3	23.1	48.6	44.1	40.1	68.9	64.9	56.5
Philippines	23.4	19.3	14.9	41.8	30.4	25.8	59.9	54.7	45.2
Singapore	34.2	25.5	22.3	57.9	47.2	42.4	74.1	68.2	61.9
Taiwan	23.1	17.8	12.2	32.0	30.0	26.0	60.4	56.4	48.1
Thailand	30.3	24.6	22.0	41.3	37.3	34.3	49.9	46.6	42.7
Average	31.3	22.6	20.0	45.7	38.9	35.6	56.1	51.1	45.0
Europe									
Austria	60.4	52.7	47.1	70.5	60.2	53.5	71.2	63.5	56.9
Denmark	58.7	50.8	44.4	66.9	56.5	49.5	72.0	63.0	53.8
Finland	49.7	43.4	40.5	59.0	54.0	48.9	63.6	51.1	45.4
France	78.2	65.9	60.0	79.3	71.2	64.3	79.4	71.7	66.1
GBR	74.9	66.8	61.1	79.1	72.3	65.5	83.2	74.3	65.9
Germany	67.1	62.7	59.4	71.6	68.0	64.5	71.1	68.2	64.1
Greece	42.6	22.0	16.5	39.1	30.5	23.2	32.4	26.1	21.0
Ireland	60.4	55.0	45.7	71.6	62.9	51.9	69.5	58.3	49.3
Italy	71.4	58.4	52.9	69.7	60.6	53.9	72.4	63.9	56.2
Netherlands	70.7	63.0	55.9	73.3	65.8	58.9	70.8	62.3	56.7
Norway	58.4	50.6	46.3	65.1	52.5	47.6	64.5	48.4	43.2
Portugal	32.4	26.4	21.2	45.8	40.3	32.7	54.9	49.0	40.7
Sweden	65.9	58.4	54.7	71.9	64.1	59.3	77.3	66.2	61.1
Average	60.8	52.0	46.6	66.4	58.4	51.8	67.9	58.9	52.3

Table 3. Foreign Reserve of Asian and Other Countries

(In millions US dollar)

Country	1996	1997	1998	1999	2000	2001
Japan	207,335	207,866	203,215	277,708	347,212	387,727
China	105,029	139,890	144,959	154,675	165,574	212,165
Korea	33,237	19,710	51,963	73,700	95,855	102,487
Indonesia	17,820	16,087	22,401	26,245	28,280	27,048
Malaysia	26,156	20,013	24,728	29,670	28,625	29,585
Philippines	9,902	7,147	9,101	13,103	12,936	13,318
Singapore	76,491	70,883	74,418	76,304	79,685	47,851
Thailand	37,192	25,697	28,434	33,805	31,933	32,350
Vietnam	1,719	1,973	2,000	3,325	3,416	3,660
Cambodia	252	287	315	388	502	586
Laos	159	100	106	101	139	138
Myanmar	229	250	315	265	223	400
ASEAN+3[1]	515,521	509,903	561,955	689,289	794,380	857,315
Hong Kong	63,808	92,804	89,601	96,236	107,542	111,155
Taiwan	88,038	83,502	90,341	106,200	106,742	122,211
Sub-Total	667,367	686,209	741,897	891,725	1,008,664	1,090,681
Austria	21,861	18,605	20,918	14,016	13,492	11,444
Belgium	15,380	14,519	15,763	8,377	7,988	8,743
Finland	6,205	7,532	8,508	6,747	7,330	7,192
France	23,120	27,097	38,753	33,933	32,114	26,363
Germany	75,803	69,853	64,133	52,661	49,667	43,615
Greece	17,337	12,441	17,188	17,726	13,116	4,787
Ireland	7,715	6,020	8,622	4,826	4,983	5,196
Italy	44,064	53,431	25,447	18,623	22,423	20,905
Luxembourg	29	24	NA	NA	NA	NA
Netherlands	24,119	21,881	17,536	6,499	7,004	5,930
Portugal	15,359	15,130	15,067	8,006	8,539	9,228
Spain	5,579	66,023	52,490	31,329	29,516	27,905
EMU Total	256,571	312,556	284,425	202,743	196,172	171,308
U.K.	37,123	28,878	27,363	30,077	39,281	31,938
Swiss	36,775	36,899	38,346	34,176	30,854	30,134
Canada	18,028	15,122	19,911	24,432	28,841	30,484
U.S.A.	38,294	30,809	36,001	32,182	31,238	28,981

Source: IMF, *International Financial Statistics 2002,* Taiwan, *Financial Statistics*.

1) Data on Brunei are not available, thus not included.