

**Asian Monetary Cooperation: Perspectives from the
Optimum Currency Area Analysis[†]**

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Abstract

We argue that a number of recent studies have overstated the economic case for the creation of a common Asian currency by focusing on only a few of the relevant criteria. We also conclude that endogenous forces are unlikely to be sufficiently strong that adopting a common currency would quickly turn Asia into an optimum currency area (OCA) as some have suggested. We argue that more attention needs to be devoted to issues of monetary, fiscal, and exchange rate coordination under a fairly flexible exchange rate system and that OCA analysis is a valuable framework for analyzing such issues.

Classification: Asian, monetary integration, OCA

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1. Introduction

Since the Asian currency and financial crises of 1997 there has been substantial increase of interest in the possibilities of greater Asian monetary and financial cooperation and several initial steps such as the Chiang Mai Initiative have already been undertaken.¹ There have been a number of proposals to follow Europe's example and create a common Asian currency and several technical studies based on optimum currency area (OCA) analysis have suggested the economic feasibility of such proposals. In this paper we argue that by focusing on only a limited number of the OCA criteria such studies have tended to paint an overly optimistic picture of the economic desirability of a common Asian currency in the near or medium term future. We agree that it is important to increase Asian monetary and financial cooperation, but believe that excessive academic focus has been placed on discussing the common currency proposals relative to the more practically important issues of increasing cooperation in the near term. With respect to discussions of more immediate policy options, too much emphasis has been placed on discussing exchange rate coordination issues relative to the more politically difficult but economically essential issues of monetary and fiscal policy coordination. It is argued that while OCA analysis is most often used to discuss common currency issues, it has much broader applicability and provides the most appropriate framework for analyzing issues of monetary, fiscal, and exchange rate coordination.

In section 2 this perspective on OCA analysis is explained. Section 3 discusses the instability of measures of business cycle synchronization and raises issues about their interpretation. Section 4 discusses the importance of similarities in inflation and growth rates. Section 5 discusses the endogeneity of OCA criteria and the implication of such

¹ See, for example, Kawai and Houser (2007).

endogeneity for sequencing trade and monetary integration. We argue that while the consideration of endogeneities is important they are unlikely to be so strong that it isn't necessary to consider preconditions for a currency area to work well. We also question the extent to which coordinating exchange rate policies is likely to generate substantial increases in the coordination of monetary and fiscal policies. Section 6 concludes with the suggestion that it is important to develop a better understanding of the strength and patterns of monetary and financial interdependence among Asian countries as a basis for developing stronger cooperation in the management of monetary, fiscal, and exchange rate policies.

2. A Perspective on the OCA Approach

The literature on the theory of optimum currency areas (OCA) provides the proper economic framework for analyzing the costs and benefits of joining a currency union. Less broadly recognized is that it also provides the proper framework for analyzing issues of monetary and macroeconomic policy coordination. This is because we can interpret this literature more generally in terms of how much weight should be given to external considerations in setting national monetary policies with fixed and freely floating rates representing the two corners of one hundred percent and zero weights respectively.² This formulation does not address the issue of unsterilized interventions in the foreign exchange markets, but this consideration can be explicitly added by drawing on the optimal policy literature which analyzes optimal policy responses in the face of different types of disturbances and is thus appropriate for analyzing when discretionary interventions in the foreign exchange market are appropriate – say in the case of currency substitution or destabilizing speculation – and whether the monetary effects of such interventions should be

² See Willett, 2003. Note that in this interpretation, free floating implies not only the absence of an exchange market intervention and no influence of exchange rate behavior on monetary policy decisions.

sterilized or not (no in the first case and yes in the second). These optimum currency area and optimal policy approaches can also be quite valuable for analyzing open economy aspects of flexible inflation targeting. (See Willett, 2003.)

2.1 The Problem of Overemphasis on a Few Factors

After a period of neglect, OCA analysis is currently quite in vogue again, but it is unfortunately sometimes misapplied. One of the most common misapplications is in technical papers that focus on a small number of OCA criteria and then draw strong conclusions about the economic suitability of countries to adopt a common currency. The basic idea of OCA analysis is that there are both costs and benefits to any exchange rate cum monetary regime and that we can identify factors that systematically affect the ratio of these costs to benefits.

Since a major cost of adopting a fixed exchange rate is giving up the independence of domestic monetary policy and forcing the domestic economy to adjust to pressures from the balance of payments these costs will be less, the more flexible is the domestic economy and they will be higher, the larger are the domestic segments of the economy relatively to the external sector. On the other hand the smaller and more open is the economy, the greater are the benefits of a fixed rate in facilitating international trade and investment and the more costly are exchange rate fluctuations. The size and patterns of the shocks that hit the economy will in turn influence how much adjustment is required and hence the cost of giving up exchange rate changes and the independent use of monetary policy as instruments to cushion the effects of shocks. For example, to the extent that the shocks hitting members of a currency area differ substantially, the more costly it will be for the area to be able to adopt only a single monetary policy.

Over the years the initial few criteria discussed by Mundell in his pioneering paper (1963) have been expanded well into double figures.³ A list of these criteria is given in Table 1. We still do not have general agreement on the relative importance of all of these criteria, nor on all of their interrelationships with one another. The recent Argentina crisis illustrates, however, that just meeting a few of the OCA criteria is not enough. While Argentina met the substantial currency substitution criteria with its high level of dollarization, its economy was rather closed with respect to trade and lacked a high degree of domestic economic flexibility. Coupled with the failure of its currency board to promote fiscal as well as monetary discipline, the results were tragic. (See for example, Willett 2002.)

2.2 The Consequent Overstatement of How Well Asia Meets OCA Criteria

The tendency of a number of recent studies applying OCA analysis to Asia to focus on only a small number of factors, can easily give the impression that Asia meets OCA criteria much better than is in fact the case. In part because of the easy availability of relevant data and of applicable statistical techniques, it has become popular to emphasize patterns of shocks and the degree of synchronization of business cycles as the primary criteria investigated. Several studies have concluded that on these types of criteria Asia today fits the OCA conditions roughly as well as Europe before the euro was launched.⁴ Since Europe did create the euro and it certainly hasn't been a dismal failure, the implication often given is that it could be practical to create a common Asian currency in the fairly near future.

Such an inference could be highly dangerous, however. There are other important criteria on which Asia does not score so well. The flexibility of domestic economies is one of these. On this issue we have a striking deficiency of hard evidence. For example, there is

³ See, for example, Tavlas (1993) and Willett (2003).

⁴ The most famous of these is Bayoumi, Eichengreen, and Mauro (2000).

very little evidence on the degree of labor mobility and the authors of recent papers have offered quite different judgments. For example while Eichengreen and Bayoumi (1996) draw on the 1994 study by Goto and Hamada to suggest that “Labor mobility is relatively high in Asia”, Rhee (2004) and Ruffini (2006) both suggest that labor mobility is low. Jikang and Yin (2005) conclude that “although the level of labor mobility is rather low in East Asia ... it has been rapidly increasing since 1990” (p.9) while Salvatore (2007) suggests that labor mobility is relatively high in Malaysia, Singapore, and Thailand but low in Japan and Korea. Results also differ on the speeds of adjustment in output markets. For example, while Bayoumi and Eichengreen (2000) find them generally to be high in East Asia, Baek and Song (2002) find estimates that are much lower.

The evidence from the studies of growth correlations and patterns of shocks themselves don't present as strong support for a common Asian currency as is sometimes suggested or implied. Frequently such studies conclude that subsets of the Asian countries score well on these criteria, but not the whole region. For example, a recent survey by economists at the Bank of Japan concludes, “Most empirical studies based on the optimal currency area theory are positive that the conditions for monetary union are met by subsets of Asian currencies” (p.3) and that “subsets of Asian currencies meet the optimal currency area criteria to the same degree as European countries did in their pre-euro phase.” (Watanabe and Ogura, 2006, p.11) While not inaccurate, this statement is misleading. Not only are such conclusions generally based on a quite limited set of criteria, there is considerable variability across studies in the composition of the subgroups. This reduces our confidence in the results of any one study. This variability is perhaps not surprising, given

the range of methodologies applied across studies. And not all studies reach positive conclusions even for sub groupings.⁵

3. The Instability of Measures of Business Cycle Synchronization

One important reason that we should not confidentially rely on the conclusions based only on the business cycle synchronization criteria is that such correlations are frequently not stable over time. They reflect not just the degree of economic and financial interdependence among countries but also the particular shocks that occur and there is no reason to believe that these will be stable over time. Noting the difference between the groupings found in his study and those found by Bayoumi, Eichengreen and Mauro (2000), Wyplosz (2002) argues in a similar vein that “this difference reveals the limited reliance that one can put on historical shocks as a guide to the choice of an exchange rate regime.”

(p.137)

Some studies have interpreted the increased correlations among Asian growth rates in recent years as strong evidence that Asia is rapidly increasing the extent to which it meets OCA conditions.⁶ Much of the increase in correlations over the 1990s, however, was due to the effects of the Asian crisis in 1997 – 1998. This is illustrated in Table 2. While many of the recent studies use more sophisticated statistical methods to investigate degrees of business cycle synchronization and to attempt to distinguish among different types of shocks, all such research is subject to the same basic problems that we cannot be certain that past patterns of shocks will be repeated in the future.

Of course past behavior can be informative and we can sometimes identify important structural factors that are likely to make some past patterns continue into the future, such as the export volatility of countries who export primarily agricultural products

⁵ See for example, Chow and Kim (2003).

⁶ See, for example, Kwack, Ahn, and Lee (2003).

and raw materials. But our general point is that we need to be quite careful about what inferences we draw from such studies. We illustrate the importance of paying close attention to the scope for variations in patterns over time. While we use examples from simple and trend adjusted growth correlations, this potential for instability applies to more sophisticated statistical methods as well.

The average annual correlation of growth rates among all Asian countries rose from 0.155 for 1968 to 1991 to 0.562 from 1992 to 2005. However, if we exclude the crisis years of 1997-1998 from the post 1992 sample, the correlation drops back down to 0.365. Similarly, the simple average correlation within the ASEAN group also rises dramatically from 0.178 pre 1992 to 0.554 in the second period, but the increase is much more modest to 0.404 if the crisis years are excluded. Our point is not that economic interdependence has not been increasing in Asia, but that we need to be careful about measuring it and drawing conclusions.⁷ Nor are we saying that no attention should be paid to the crisis years. There is still considerable disagreement among economists, however, about whether the crisis period should be treated more as a common shock or as an asymmetric shock that had super transmission to other countries through contagion. Clearly there is some truth in both perspectives.⁸

The proposition that measures of business cycle synchronization vary substantially over time and that it is easy to misinterpret short run variations as the beginnings of a trend holds beyond Asia. For example, in the initial years after the creation of the euro the

⁷ Examples of recent studies that do appropriately separate out the crisis years include Crowley and Quah (2009), Cheng and Chia (2008), and Takagi and Kozuru (2008). There is considerable evidence that while higher trade in general tends to increase business cycle correlations, intra-industry trade has a much stronger effect than inter-industry trade. Thus, Takagi and Kozuru (2008) conclude that china's correlations with the rest of Asia will increase more rapidly than Japan's. See also Shin and Wang (2008) and Rana (2007). For a general review of the study of business cycle synchronizations, see Baxter and Kourparitsas (2005).

⁸ For Willett's interpretation, see Willett et al (2005).

synchronization of business cycle conditions within the euro zone rose substantially. This was consistent with there being a strong endogenous effect of the creation of the euro. (Endogenous OCA analysis will be considered further in section 5.) Further examination, however, shows that correlations increased also with and among Western European countries that were not members of the euro zone (Willett, Wihlborg, and Permpoon, 2008) and among the G-7 countries (Flood and Rose, 2009). Flood and Rose (2009) also find that the degree of synchronization among the G-7 economies has risen and then has fallen a number of times over recent decades with a strong trend, thus providing a strong warning against overgeneralizations that we are entering into a new era of either greater synchronization or its opposite, decoupling.

3.1 Short-Run versus Longer Run Correlations

Another factor which has received insufficient attention is the time periods over which the degree of business cycle synchronization is measured. The primary argument for treating high correlations as favorable for common currencies is that they imply smaller differences in optimal national monetary policies and hence a lower cost of abandoning national monetary policies for a common one. It is most common to measure such correlations over one year periods, but it isn't clear that this is an appropriate time period for this criteria.⁹ Such a time period implicitly assumes a very high degree of technical ability to use monetary policy to fine tune the economy. Lags in recognition of shocks and in the effects of monetary policy once implemented suggest that looking at correlations over longer time periods would be more appropriate when evaluating the constraints imposed by a common currency on discretionary monetary policy.

⁹ An exception is Takagi and Kozuru (2008) who use a three year moving average of quarterly data. They do not present a rationale for using this measure, however.

Indeed an argument can be made that one year correlations are more relevant for automatic stabilization criteria and from this perspective low short run correlations are more desirable. While Table 2 reveals substantial differences in average correlations within all groups, there are generally not huge differences across the correlations for one, two, and three year periods. The largest difference is the drop in the two to three year correlations with East Asia for the post 1992 period when the crisis years are excluded. This fall is from 0.536 to 0.085. This drop is hidden, however, when the crisis years are included. The substantial differences that are made by including or excluding the crisis years are further illustrated on a country by country basis for one and two year correlations in Figures 1 and 2. Japan is used as a benchmark in this case. The differences are especially strong for the two year correlations.

3.2 Different Measures of Synchronization

Not surprisingly, different measurements of business cycle correlations can lead to different results. Massmann and Mitchell (2004) differentiated between the trend-cycle decomposition estimated from the original series or ‘growth cycle’ and the turning point analysis or ‘classical cycle’ which indicates peaks and troughs directly from the original series using criteria such as those by the NBER. Despite their note that the parametric and nonparametric detrending methods are alike in the sense that they ‘simply’ take weighted averages of the data¹⁰, Massmann and Mitchell found that inferences about individual euro area business cycles are sensitive to the measure of the business cycle. Alternatively, Canova (1998) categorized detrending methods into ‘statistical methods’ which impose statistical assumptions to identify trends and cycles and ‘economic methods’ where the choice of trend

¹⁰ They considered three parametric methods, ARIMA models and the Beveridge-Nelson decomposition, unobserved components models, and linear regression models. The nonparametric methods include a centered moving average, the Hodrick-Prescott filter, and the Baxter-King band pass filter.

is dictated by an economic model¹¹. He compared the properties of the cycles extracted from each method and reported differences in cyclical variability, the duration, the timing of turning points, and the second moment. More importantly, the magnitude and the sign of cross correlations of cyclical components of different series vary substantially. He then concluded that different “de-trending methods are alternative windows which look at series from different perspectives” (p.477) since it extracts different types of business cycle information, quantitatively and qualitatively, from the original series.

The evidence from Asia also illustrates this point. Since growth rates are analogous to the classical cycle above in the sense that they reflect changes in the original series itself, we use the popular HP filter to represent the growth cycle detrending method. The correlations of deviations from the trend are presented in Table 3. Correlations of short run deviations from trend are often assumed to convey information about whether common shocks hit countries simultaneously and about the timing of adjustment responses of different economies. However, adjusting for deviations from trends does not remove the basic problem noted above that these correlations can be generated by a variety of factors including the patterns of shocks, policy responses, and the degree of direct economic and financial interdependence among countries. Correlations of accumulated deviations from trend over longer time horizons do, however, reveal the differences in steepness of the growth paths. More specifically, a fast-growing country’s GDP at time t_3 tends to deviate more from the starting point, say at time t_0 , on its own time trend in percentage terms than a slower growing country. In this case, low correlations of deviations from trend will result.

¹¹ Statistical procedures are polynomial functions of time, first order differences, Beveridge and Nelson’s procedure, unobserved component model, frequency domain methods, and on-dimensional index model. Among economic procedures are common deterministic trends model, common stochastic trends model, and the Hodrick and Prescott’s filter.

In Table 3, except in a few cases of East Asian countries, the correlations of deviations from trend in both ASEAN and East Asian groups are higher, the longer is the accumulation period. After the crisis, one year deviations from trend of both groups when years 1997-8 are included are more correlated than when those years are removed, reflecting the same external shocks. The magnitude of correlations for the East Asian group is smaller since only some countries in the group were affected by the crisis. And because the crisis was associated with a substantial drop in the long-run growth trends of those crisis-hit countries, medium term deviations of both groups when crisis years are included are less correlated than when they are excluded.

Overall, the correlations in Table 3 are higher than those in Table 2, emphasizing the differences in concepts of changes in series itself and changes relative to trend. As an illustration of this point, Figure 3 below shows output levels and long term trends of country A and B. Over a period of time, country A has a negative growth compared to its starting output level whereas country B has a slightly positive growth. However, if compared to the starting points on their time trends, both deviate in the same direction.

Recently the literature has also begun to focus on correlations of consumption as well as output. Some of this interest was stimulated by hopes that consumption correlations could provide a useful measure of financial integration, but it turns out that there are too many other factors that can influence consumption correlations for them to be useful for this purpose.¹² These correlations are still of interest in their own right, however.

Consumption smoothing behavior should make consumption growth more stable than output growth and consumption correlations across countries higher than output correlations. Surprisingly, however, this doesn't appear to be the case for Asia or Europe.

¹² See Shin and Shon (2006)

Correlations for Asia are presented in Table 4 below.¹³ This is consistent with the findings of Kim, Kim, and Wang (2006) and Shin and Shon (2006).

The substantial variability in correlations across Asian country pairs is illustrated in Table 5 where we present the two year correlations for 1992 to 2005 excluding the crisis years of 1997 and 1998. China, for example, has quite high correlations with Singapore, Thailand, Hong Kong, Indonesia, and Malaysia, but negative correlations with Japan and the Philippines. Singapore has high correlations with many of the Southeast Asia countries, but a negative correlation with Cambodia and low positive correlations with Japan and the Philippines. Korea's correlations run all the way from high negative with Cambodia to high positive with Indonesia and Vietnam, while it is essentially zero (.04) with Japan. One finds similar variability with the one year correlations (not reported). This poses difficulties in judging which countries should be 'in' and 'out' of the group. For example, if country B has a high growth correlation with country A but low with country C while growth of country C is highly correlated with that of country A, should C be accepted? This highlights the importance of taking of other OCA criteria into consideration.

3.3 Benchmarks for Comparison

Another important problem is that there has been relatively little careful analysis of what represents high or low correlations. The most common tendency has been to compare Asian correlations with those in Europe before the euro was launched.¹⁴ While this practice is understandable, its usefulness for policy analysis is open to question.

There is rather widespread agreement that the launching of the euro was primarily the result of political rather than economic considerations, and that while particular sub

¹³ On European correlations see Willett, Permpoon, and Wihlborg (2008).

¹⁴ See, for example, Bayoumi and Eichengreen (1994).

groupings of the euro countries may have met OCA criteria, this was generally considered not to be true for the whole group¹⁵. While the OCA criteria had relatively little relevance to the political economy of the creation of the euro, they may still have a substantial influence on how well it works. To date, the euro hasn't led to disasters such as the Argentine crisis, but neither has it operated as well as many of its supporters hoped. The growing real appreciations of countries such as Greece, Italy, and Spain are a major source of concern to some economists.¹⁶

A rationale for using pre euro Europe as a benchmark could be endogenous OCA analysis. To the extent that fixing exchange rates has strong effects on the OCA criteria that move them in the direction of making a common currency optimal, then meeting pre euro criteria would be a good signal for the likely success of an Asian common currency. Indeed, some economists have gone even farther and argued that the behavior of the important OCA criteria is so endogenous that any currency area would become optimal and this has been used to suggest that Asia should reverse the traditional sequencing of trade integration before monetary integration since monetary integration would automatically stimulate substantial increases in trade integration. (See, for example, Boyer (2005)). We believe that this is a very dangerous recommendation.

4. The Importance of Differences in Inflation and Growth Rates

On the criterion of compatibility of inflation rates, a substantial number of Asian countries could join a common currency area without major disruption. Table 6 presents average inflation rates for the post crisis period 1999 through 2007, a majority of countries' average rates of CPI inflation fall with the range of -1 to +3 percent, with Vietnam and the

¹⁵ See, for example, De Grauwe (2003).

¹⁶ For discussion of this issue see the analysis in Wihlborg, Willett, and Zhang (2009).

Philippines running a little above (4.4. and 5.1 respectively). The large countries are Indonesia with an average of 10 percent and Laos at 24 percent.

Also of considerable relevance for the smooth functioning of a common currency area are the substantial differences in economic growth rates. These averages are also presented in Table 6 for 1999 through 2005, the latest year for which the data for all of the countries was available. The range of average growth rates run from 1.4 percent (Japan) to 9.5 percent (Cambodia). Even excluding these extremes there is a range from 4.2 percent (Indonesia) to 9.1 percent (China).

In general the problem that can be caused for the operation of a currency by differences in growth rates has not received sufficient attention in the OCA analysis. Frequently correlations of deviations from trend growth rates are presented without discussion of the differences in trends themselves.¹⁷ If absolute deflation is to be avoided then the greater the dispersion of rates of productivity growth, the higher will have to be the average inflation rate of the group. As is illustrated by the Balaasa-Samuelson analysis of purchasing power parity, if the prices of traded goods are constant than the greater is productivity growth the greater must be the rate of inflation of prices of non-traded goods.

Of course if domestic economies were fully flexible then there would be little cost to deflation and the average inflation rate of the currency groups could be kept low by having deflation in some countries offset inflation in others. Where there is a good deal of stickiness in economies, however, deflation can be quite painful, generating high unemployment and low growth.¹⁸

¹⁷ An important exception is De Grauwe (2005).

¹⁸ For recent treatments of the consequences of deflation see the contributions in Burdekin and Siklos (2004). Thus we can think of the differences in growth rates as a source of asymmetric shock which raises the costs of a currency area.

5. Sequencing and Endogenous OCA Analysis

There is a substantial history to this sequencing debate. In the early days of European integration this was labeled the monetarists versus economists debate. Recently, however, it has enjoyed a major revival due in part to the development of endogenous OCA analysis. As originally presented by Frankel and Rose (1996), endogenous OCA analysis quite correctly argues that what is relevant for how well a currency area will work is the degree to which the OCA criteria are met *ex post*, not *ex ante*. Furthermore, we have strong reasons to believe that forming a currency area could have substantial effects on how well these criteria are met. For example, trade within the area would increase and this would increase the area's OCA score both directly and quite likely also indirectly through increasing the degree of business cycle synchronization.¹⁹

More generally we would expect most OCA criteria to be met better *ex post* than *ex ante* or as Watanabe and Ogura (2006) put it “joining a currency area *per se* will catalyze the endogenous and *ex post* fulfillment of the optimal currency area conditions.” (p.16) This type of argument is sometimes carried out too far, however, to the conclusion that such endogeneities are necessarily so great that *ex ante* conditions are irrelevant. As Watanabe and Ogura continue “therefore, as this argument goes, there is little point in debating whether or not the optimal currency area conditions are satisfied *ex ante*.” (p.16) An example is the statement by Masahiro Kawai (2007) that “once a group of countries permanently fixes its exchange rate, the degree of intra-area economic integration will rise and shocks will become more symmetric. One need not worry too much, then about the OCA criteria since these will obtain endogenously... Only political commitment is required.” (p.111)

¹⁹ On the later issue, see the analysis and references in Shin and Wang (2003)

This is much too strong. What is important is not just the direction of change, but also its magnitude. If initial conditions are far from meeting the OCA criteria than even sizeable improvements may not be enough to avoid high costs. Again, Argentina provides a valuable example. Although theoretical models show that the effects could go either way, it is most common to argue that fixing the exchange rate should induce an increase in labor market flexibility since the cost of rigidities would rise.^{13a} It appears that this was generally true in Argentina. The amounts of increased flexibility were fairly small, however. They weren't nearly enough to avoid high unemployment.

In general political economy analysis suggests greater skepticism about the amounts of increased flexibility and policy coordination that will be induced by fixing exchange rates than does in economic efficiency analysis. (See Willett, Permpoon, and Wihlborg, 2008) In any event, we have underway a major experiment in Europe of the power of endogenous responses. It's too soon to draw definitive conclusions, but a preliminary analysis is possible. The creation of the euro has been associated with substantial increases in trade and business cycle correlations for the euro members. Trade and growth correlations have also increased substantially between the euro countries and their Western European neighbors, however. Thus we don't have a clear before and after experiment. Other factors haven't been held constant.

With respect to increased economic flexibility, the results are mixed. There have been reforms in some countries but little progress in others. It appears that generally the most effective influences of the euro on policy reforms were in the run up to entry and that once entry was achieved reform fatigue has dominated further endogenous responses. This in our judgment, it would be wise to await further evidence before giving substantial weight

^{13a} On these issues see the references in Eichengreen (2002), De Grauwe and Mongelli (2005), and Willett, Permpoon, and Wihlborg (2008).

to hopes that joining a currency area would induce a process of strong endogenous policy reforms and increased flexibility in domestic economies.

Some authors have drawn more optimistic conclusions about the ability of agreements to coordinate exchange rate policies about the ability of agreements to coordinate exchange rate policies to bring about increases in monetary and fiscal policy coordination. On this view the system of limited exchange rate flexibility (essentially a medium width band with stop adjustments in parities) initiated under the Exchange Rate Mechanism (ERM) of the European Monetary System provided considerable macroeconomic discipline and promoted policy coordination. Such perceptions support arguments that the best path of increasing monetary cooperation in Asia to emulate Europe and create an Asian Exchange Rate Mechanism modeled on Europe's ERM.

In our view, Europe's actual experience doesn't provide strong support this optimistic interpretation. These posited effects did occur in some cases, for example, France's decision to not devalue again in 1983 was accompanied by major changes in its macro economic policy strategy. But such shifts did not extend to all members of the EMS. If they had then we would not have had the crises of 1992 and 1993. Salvatore (2007) notes, "the fundamental weakness of the EMS in attempting to keep exchange rates among member nations within narrowly defined limits without at the same time integrating their monetary, fiscal, tax, and other policies."²⁰ (p.6)

Originally the ERM was expected to operate with considerable flexibility. Over time, however, it became increasingly sticky and by the latter part of the 1980s it no longer functioned substantially differently from the adjustable peg regime of Bretton Woods. Such pegged exchange rate regimes not backed by externally oriented monetary policy run right

²⁰ For further analysis of problems with the ERM approach see Genberg (2006) and Genberg and He (2007).

into the problem of the unstable middle, however. As has been frequently noted, one important difference between Asia today and Europe at the beginning of its monetary integration process is the degree of capital mobility. When Europe started its process countries still had substantial control on capital flows. While there is considerable debate within Asia today about measures to limit the volatility of capital flows, this is within the context of substantial financial liberalization.

It is important to remember that as capital flows were liberalized within Europe parity changes within the ERM became a less frequent until major currency crises were provoked in 1992 and 1993. This is exactly what is predicted by the unstable middle hypothesis. A strong case can be made that flexible rates with increasing monetary policy coordination provides a safer transition path to monetary union than the ERM approach. (See Wihlborg and Willett, 1991) Of course if the ERM is given sufficiently wide bands such as the +/- 15 percent adopted during the 1993 crisis then the differences become muted.²¹

Recent empirical research suggests that while the narrow band adjustably pegged center of the spectrum of exchange rate regimes is indeed the most crisis prone, one doesn't have to go all the way to the free floating end of the spectrum to substantially reduce crisis probabilities as implied by the two corners hypothesis.²² Thus, if implemented with sufficient flexibility, Williamson's BBC proposal could be a viable strategy for monetary cooperation even in a world of substantial capital mobility if monetary and exchange rate policies are not heavily influenced by short run political considerations.²³ Its superiority to Goldstein's (2002) managed floating plus inflation targeting approach is not obvious,

²¹ On the European exchange rate mechanism see also Filippini (2008) and Salvatore (2007) who share our view that it is not a good model for Asian cooperation. See also Chow et al (2008) who proposes an interesting phased approach to Asian monetary cooperation.

²² See Angkinand, Chiu, and Willett (2009) and Chiu and Willett (forthcoming).

²³ Thus giving control of exchange rate as well as monetary policy to an independent central bank is likely to increase the work ability of exchange rate regimes that fall between hard fixes and quite flexible rates.

however.²⁴ The relative costs and benefits of these approaches should be a major focus of attention.

In such analysis it is crucial to emphasize the requirements on national monetary policies necessary for strategies of limited exchange rate flexibility to operate in a stable manner. Especially at the political level there is sometimes a tendency to believe that the coordination of exchange rate policy can make a major contribution to reducing exchange rate fluctuations without putting substantial constraints on the autonomy of national monetary policies.

While capital mobility in Asia is substantial, it is less than perfect, so there is some scope for sterilized intervention to be effective. However, except for countries such as China that maintain a strong set of capital controls, the amount of what can be done with sterilized intervention appears likely to be fairly limited (Ouyang, Rajan, and Willett, 2008). Thus substantial reductions in exchange rate variability would almost certainly require coordination of monetary policies. It might provide useful discipline if all policy discussions of limiting intra regional exchange rate fluctuations would be required to replace the use of the term exchange rate coordination with monetary policy coordination.

It is also important to remember that for highly coordinated exchange rate regimes to avoid generating crisis, fiscal as well as monetary policies need to be consistent with the exchange rate targets over the medium term. Thus, at least some degree of limitation over the independence of national fiscal policies is required. The best design of such rules has been the subject of considerable disagreement, as the controversies over the euro zone's Growth and Stability Pact make clear. It is important to remember that one of the major causes of the crisis in the European Monetary System in the early 1990s was the fiscal shock

²⁴ See also Genberg (2006) and Genberg and He (2007).

that accompanied German reunification and the inability of the European countries to reach a sufficient degree of coordination of their responses to this shock.

In analyzing alternative approaches to regional monetary cooperation and alternative regimes of limited exchange rate flexibility recent literature has shown that it is important to focus on political economy as well as purely technical economic considerations. There can be strong political pressures that make it difficult to operate regimes of limited exchange rate flexibility in a stable manner. (See Willett, 2007) The adoption of institutional mechanisms to help insulate monetary and exchange rate policy making from such political pressures may well prove more important than what form of exchange rate regime is adopted, once one has moved away from the dead center of fairly narrow band adjustable pegs.

5. Concluding Remarks

A major conclusion of our analysis is that while there is clearly a strong case for greater exchange rate and monetary policy cooperation within Asia, these should be approached more on their own merits than as a stepping-stone to Asian monetary union. While some studies have concluded that groups of countries within Asia meet some of the criteria for optimum currency areas as well as did European countries prior to the formation of the euro, we argue that this does not provide strong support for the idea that Asia should put major efforts into attempting to create a common currency in the short or medium terms. Other OCA criteria suggest a much less optimistic picture of the benefits relative to costs of adopting a common Asian currency. This conclusion is reinforced by political considerations and the frequent instabilities in the types of estimates of synchronization that tend to present the strongest support for a common currency. A careful reading of the European experience dashes cold water on views that monetary union is an inevitable

outcome from greater economic and financial integration and that the forces discussed in endogenous OCA analysis are so powerful that any groups of countries can rather swiftly approximate an optimal currency simply by adopting a common currency.

There is much to be said, however, for putting considerable effort into developing institutional mechanisms that help to build up communication, trust, and cooperation over time. At this stage we believe that institution building in Asia should focus heavily on strengthening mechanisms for voluntary cooperation rather than on the more rule based approaches that have tended to characterize European integration. Both common sense and European experience suggest that increasing high quality staff for regional institutions is an important step in this process.

Rather than focusing initially on exchange rate based forms of cooperation we believe that more sustained progress is likely to come from efforts to better understand the ways in which monetary and fiscal policies in Asian countries affect one another and the implications that these have for desirable strategies for monetary, fiscal, and exchange rate policy coordination. For example, it appears that many East Asian countries are more financially integrated with outside markets than with their regional neighbors. The implications of this for the importance of strategies for intra regional monetary policy coordination deserve much more attention.²⁵ This type of analysis seems likely to yield considerably more potential for practical benefits than blueprints for the evolution of a common currency, no matter how elegant they may be.

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²⁵ For a preliminary effort along these lines and references to the literature see Keil, Rajan, and Willett (2008).

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Table 1

OCA Criteria

Traditional Ones (as summarized by Tavlas (1993))

Criteria	Implications for OCA
1. Factor mobility	} alternative adjustment } mechanisms
2. Wage and price flexibility	
3. Size and openness	High pass-through effect can make exchange rate changes ineffective. High openness also reduces the cost of Keynesian adjustment under fixed rates.
4. Goods market integration	Promotes intra regional trade and makes exchange rate fluctuations more costly
5. Commodity diversification	Shocks tend to cancel out so less need for adjustment
6. Fiscal integration	Transfers between states reduce adjustment pressure in the short run
7. Similar inflation trends	Reduces cost of common monetary policy
8. Real exchange rate variability	Affects amount of adjustment
(Generalized PPP)	
9. Political factors	Commitment of exchange rate and monetary policy coordination

Additional Traditional Ones

10. Financial integration (it's ambiguous)	Can help finance payments imbalances. Consumers in countries with different economic situations can share risks. But it can also make floating rates work better.
11. Financial instability	Where speculation is unstable, high capital mobility makes flexible rates more costly.

12. Patterns of Shock

- a. Automatic stabilization Short term shocks can offset each other. Different patterns can favor fixed for flexible rates.
- b. Symmetric medium term shocks Lowers cost of using common monetary policy.
- c. Optimal discretionary
14. Optimal public finance Optimal policy responses depend on nature of shocks. Can affect costs of fixed rates. Optimal inflation tax version is similar to differences in inflation rates.
15. New classical policy Surrender of monetary policy autonomy will not be costly ineffectiveness
16. Informativeness of price and quantity signals The larger the variance of monetary disturbances is compared to that of real output, the less confusion about the shocks and the less adjustment of real exchange rate. Also, if the agents cannot distinguish between local and foreign shocks (by definition, in fixed regime), the response of real exchange rate is less
17. Time inconsistency and credibility discipline problems Creates case for use of fixed rates as a commitment technology to promote discipline.
18. Liability dollarization Flexible rates increase the risk of balance sheet effects due to depreciation
19. Endogenous OCA Not necessary to fully meet the criteria before joining the currency union. Fixed rates will generate responses that reduce their costs.

Table 2 Unweighted average correlations of real output growth rates over different time horizons and different periods

correlation coefficients of real output growth rates	within south east countries*	within east Asian countries**	all countries
between 1965 - 2005			
• annual growth	0.3321	0.1439	0.2153
• 2-year growth	0.3624	0.2793	0.2228
• 3-year growth	0.3601	0.1468	0.2098
between 1968 - 1991			
• annual growth	0.1775	0.1769	0.1546
• 2-year growth	0.2117	0.1674	0.1389
• 3-year growth	0.2262	-0.0172	0.0411
between 1992 - 2005 (<i>excl. 97 &98</i>)			
• annual growth	0.4042	0.1717	0.3646
• 2-year growth	0.4796	0.2819	0.4726
• 3-year growth	0.2627	0.0853	0.3049
between 1992 - 2005 (<i>incl. 97 &98</i>)			
• annual growth	0.5536	0.4751	0.5621
• 2-year growth	0.5651	0.4608	0.5715
• 3-year growth	0.5460	0.5357	0.5596

* south east = Indonesia, Malaysia, Philippines, Singapore, Thailand, excl. Cambodia, Laos, Vietnam

** east = Japan, China and Hong Kong, excl. Korea

Table 3 Unweighted average of correlations of accumulated deviations from the HP trend

correlation coefficients of real output growth rates	within south east countries*	within east Asian countries**	all countries
between 1965 - 2005			
• 1-year deviation	0.4091	0.3476	0.3592
• 2-year deviation	0.5640	0.5377	0.4509
• 3-year deviation	0.5818	0.4515	0.4380
between 1968 - 1991			
• 1-year deviation	0.2699	0.4261	0.2944
• 2-year deviation	0.3414	0.4637	0.4037
• 3-year deviation	0.4618	0.2231	0.3884
between 1992 - 2005 (<i>excl. 97 &98</i>)			
• 1-year deviation	0.4566	0.4522	0.4994
• 2-year deviation	0.8611	0.7733	0.8517
• 3-year deviation	0.9780	0.9394	0.9664
between 1992 - 2005 (<i>incl. 97 &98</i>)			
• 1-year deviation	0.6675	0.5526	0.6572
• 2-year deviation	0.7620	0.5422	0.7173
• 3-year deviation	0.6135	0.6889	0.6711

* south east = Indonesia, Malaysia, Philippines, Singapore, Thailand, excl. Cambodia, Laos, Vietnam

** east = Japan, China and Hong Kong, and Korea

Table 4 Unweighted average correlations of real consumption growth over different time horizons and different periods

correlation coefficients of real consumption growth rates	within south east countries*	within east Asian countries**	all countries
between 1965 - 2005			
• annual growth	0.2549	0.1177	0.1458
• 2-year growth	0.4873	0.1746	0.2652
• 3-year growth	0.6202	0.2364	0.2543
between 1968 - 1991			
• annual growth	0.2320	0.0932	0.0236
• 2-year growth	0.3503	0.0209	-0.0014
• 3-year growth	0.1807	0.0233	0.0114
between 1992 - 2005 (<i>incl. 97 & 98</i>)			
• annual growth	0.3371	0.1698	0.2327
• 2-year growth	0.5120	0.6497	0.4887
• 3-year growth	0.4501	0.8800	0.3217

* south east = Indonesia, Malaysia, Philippines, Singapore, Thailand, excl. Cambodia, Laos, Vietnam

** east = Japan, China and Hong Kong, excl. Korea

Table 5 Unweighted average pair wise correlation of 2-year output growth over different periods

correlation coefficient of 2-year real output growth rate between 1992 – 2005 (excluding 1997-8)

	<u>Cambodia</u>	<u>China</u>	<u>Hong Kong, China</u>	<u>Indonesia</u>	<u>Japan</u>	<u>Korea, Rep.</u>	<u>Lao PDR*</u>	<u>Malaysia</u>	<u>Philippines</u>	<u>Singapore</u>	<u>Thailand</u>
<u>Cambodia**</u>											
<u>China</u>	0.0127										
<u>Hong Kong, China</u>	0.5867	0.7176									
<u>Indonesia</u>	-0.5867	0.6800	0.4659								
<u>Japan</u>	0.1424	-0.0772	0.4827	0.3845							
<u>Korea, Rep.</u>	-0.9195	0.5032	0.0250	0.8827	0.0401						
<u>Lao PDR</u>	-0.4369	0.8039	0.6218	0.9777	0.3602	0.7973					
<u>Malaysia</u>	-0.2394	0.7469	0.7284	0.9422	0.5368	0.6762	0.9759				
<u>Philippines</u>	0.3377	-0.2128	0.4390	0.1819	0.9770	-0.1710	0.1690	0.3676			
<u>Singapore</u>	-0.0767	0.9426	0.8066	0.8376	0.2459	0.5824	0.9334	0.9230	0.0917		
<u>Thailand</u>	-0.0123	0.8715	0.8530	0.8501	0.4157	0.5429	0.9378	0.9624	0.2687	0.9837	
<u>Vietnam</u>	-0.5730	0.4876	0.3853	0.9684	0.5507	0.8457	0.9106	0.9054	0.3600	0.7102	0.7602

** data for Cambodia starts from 1993

Table 6 Average inflation (consumer price) and annual real output growth (constant 2000) of Asian countries

	average annual real output growth (constant 2000) 1999-2005	average inflation (consumer price) 1999-2007
Cambodia	9.5	3.0
China	9.1	1.2
Hong Kong, China	5.0	-1.2
Indonesia	4.2	10.0
Japan	1.4	-0.3
Korea, Rep.	5.8	2.9
Lao PDR	6.3	24.0
Malaysia	5.4	2.2
Philippines	4.5	5.1
Singapore	5.3	0.9
Thailand	4.9	2.4
Vietnam	7.0	4.4

Source: World Development Indicator, World Bank

Figure 1: Comparison of annual correlations of real output growth of Japan with other Asian countries when crisis period (1997 – 98) is included and excluded

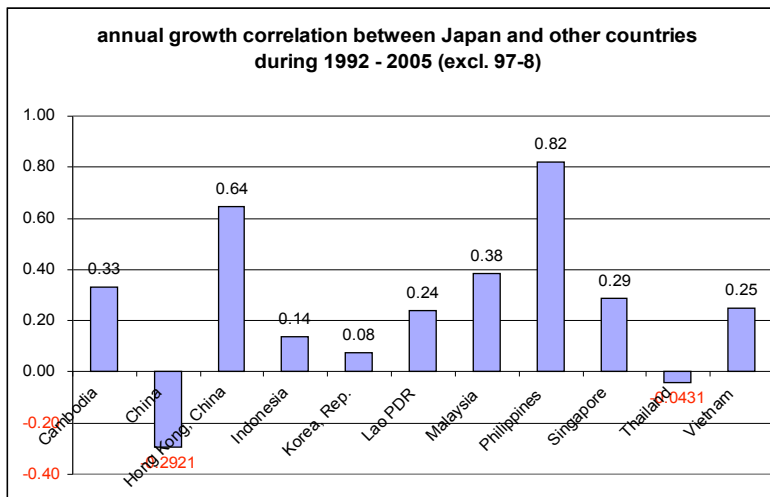
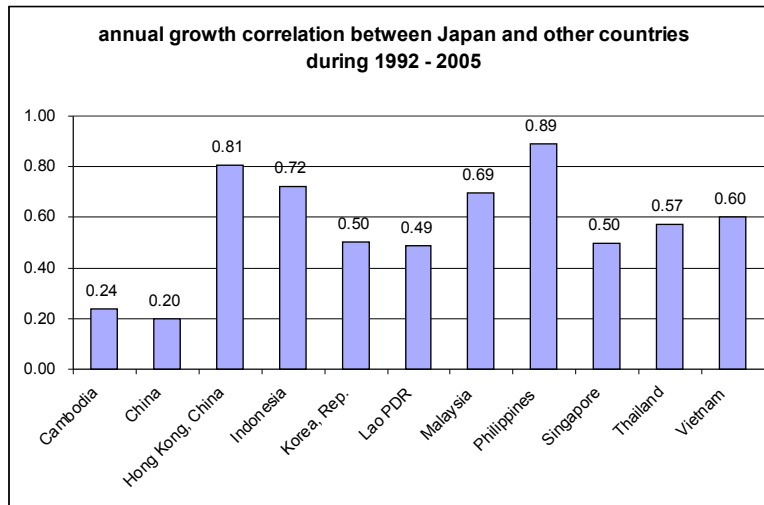


Figure 2: Comparison of 2-year correlations of real output growth of Japan with other Asian countries when crisis period (1997 – 98) is included and excluded

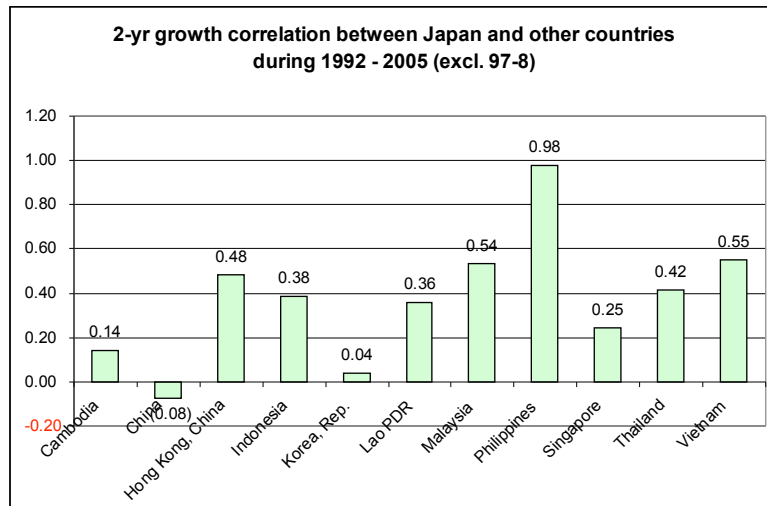
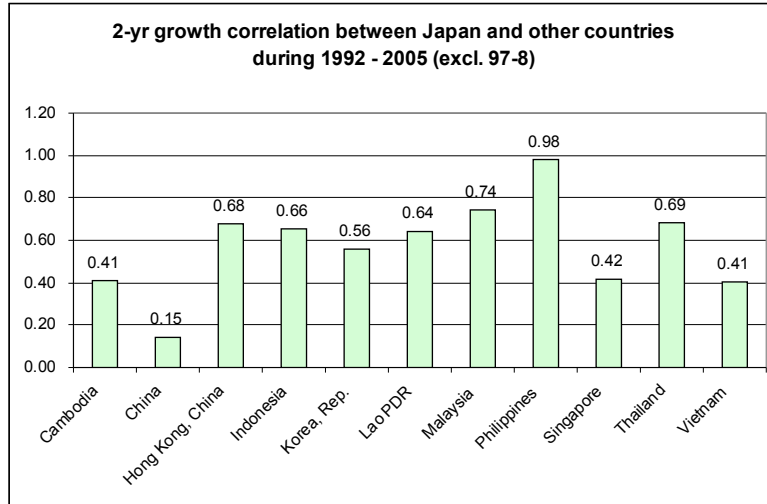


Figure 3 differences between growth and deviation from trend concepts

