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The Post-Crisis Sequencing of Economic Integration in Asia: Trade as a Complement to a Monetary Future

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Unless otherwise noted, $ refers to US dollars.

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Abstract:

Bilateral and regional cooperation initiatives in Asia have been growing in importance over the last five years. These accords span the real and financial sectors; rather than following the more typical pattern of "trade first, money later", recent policy initiatives involve the simultaneous implementation of trade and monetary/financial accords. Given this sequence, is there a case for monetary union in East Asia? Is there a case for expanded free-trade areas (FTAs) in the region? This paper attempts to answer these questions using a variety of empirical techniques, including a Computational General Equilibrium (CGE) model, to evaluate the economics of monetary/financial integration and various configurations of FTAs in Asia. We conclude that, at present, the post-sequencing of economic integration in Asia is developing such that trade agreements will ultimately complement the movement toward financial and monetary integration. While the political constraint on monetary union is real, it is argued that FTAs should help relax this constraint, adding a political complement to the trade complement.

I. Introduction

The Asian Crisis, currency instability, uncertainties with respect to the future of the global international trading system, and the perceived need to cooperate in financial areas to complement regional integration initiatives in the areas of trade and investment have been important driving forces behind recent discussions in Asia to create some form of currency area, be it at the ASEAN[2] level or the "ASEAN+3."[3] Beginning with a proposal to study monetary union by President Joseph Estrada of the Philippines at the ASEAN Summit in December 1998, the possibility of closer financial and monetary integration in ASEAN has been a subject of debate at the highest levels. The ASEAN+3 initiative was originally created in part as a first step toward closer financial and monetary cooperation in Asia, with the possibility of monetary union.

While the subject of monetary union continues to be a popular topic, in practical terms little has been done in the direction of its realization. There have been a number of initiatives (discussed below) in terms of financial cooperation, but to date the most important accords have been in the real sector. In fact, although there were no formal free-trade areas (FTAs) in place in East Asia at the turn of the century, today several are at fairly advanced stages of implementation and many others are being either negotiated or awaiting ratification (see, for example, www.aric.adb.org for a list of FTAs in Asia). Perhaps this is due to a "natural" sequencing of economic integration, i.e., first the real sector and then monetary integration, which is the experience of, for example, the EU. Or perhaps it results from more coincidental factors, e.g., the global movement toward FTAs or the fact that, for whatever reason, there is a strong demand for economic cooperation, and the real sector is the easiest to negotiate in practice and is less compromising in terms of perceived national sovereignty. In any event, the region has been far more active in terms of real integration than monetary integration, but has nonetheless registered obvious interests in engaging in both. This makes it somewhat unique. How this process unfolds will be important for not only the region but also, given its size, the entire global economy.

Is there a case for monetary union in East Asia? Is there a case for wider FTAs? And how do real and monetary integration relate to each other in Asia? This paper attempts to address these questions through institutional, theoretical, and empirical analysis. Section II gives a brief review of the evolution of East Asian integration, including trade cooperation, financial/monetary integration, and exchange-rate management, in order to set the stage for subsequent analysis. Section III considers the degree to which East Asia resembles an Optimum Currency Area (OCA), with a focus on assessing to what degree macroeconomic variables in Asia exhibit convergence and growing symmetry. It also considers possible policy convergence issues, using the EU's Maastricht Treaty as a benchmark. Given the FTA *zeitgeist* in Asia and the importance of trade integration in the determination of an OCA, in

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[2] The Association of Southeast Asian Nations (ASEAN) was created in 1967 with the Bangkok Declaration. It began with five members (Indonesia, Malaysia, Philippines, Singapore, and Thailand) and expanded four times: Brunei Darussalam (1985), Viet Nam (1995), Lao PDR, and Myanmar (1997), Cambodia (1999).
[3] ASEAN plus the main Northeast Asian countries: People's Republic of China, Republic of Korea, and Japan.

Section IV we run fresh simulations to ascertain which configurations of FTAs in Asia would be best for the region. Section V concludes.

II. Survey of East Asian Economic Integration

There are many excellent summaries of East Asian economic integration (see, for example, ADB 2006 for a recent analytical review), and doing justice to the many accords that are in place would be difficult. Moreover, as bilateral FTAs have been booming in recent years, keeping track of third-party and various bilateral arrangements tends to be a moving target.[4] Instead, we limit ourselves to summarizing some salient features of recent accords.

A. Trade Integration

First, ASEAN economic cooperation features as the most prominent of regional accords, representing by far the most important initiatives prior to the Asian Crisis. Still, East-Asia-wide initiatives, such as the "ASEAN Plus Three" accords and "ASEAN+1" agreements (e.g., the ASEAN-People's Republic of China [PRC] agreement and ongoing negotiations between ASEAN and Japan, India, Republic of Korea [Korea], and Australia/New Zealand), are taking on greater importance over time.

Despite the many early agreements in ASEAN's history that were mainly political and token in nature[5], its first major initiative was AFTA (1992). The AFTA is already in effect in the original ASEAN countries but the transitional ASEAN countries (Viet Nam, Laos, Myanmar, and Cambodia) have been granted more time, with Viet Nam due to finish by the end of 2006 and others a few more years. ASEAN has also made significant strides in the area of investment cooperation, e.g., in the form of ASEAN "one-stop investment centers" and the ASEAN Investment Area (AIA). These efforts at industrial cooperation have been designed with essentially the same goal in mind as AFTA: reduce transactions costs associated with intraregional economic interaction.

In November 2002, the ASEAN Heads of Government meeting in Phnom Penh proposed that the region should consider the possible creation of an "ASEAN Economic Community" (AEC) by 2020 (expedited to 2015 in 2007), which would create a single market in which goods and services would flow freely, and there would be a freer flow of capital and skilled labor. This is by far the most ambitious vision for ASEAN economic integration; ASEAN is currently figuring out how it might meet its goals, given the fact that it has in place very little besides (almost) tariff-free trade.

Second, the region has seen an explosion of bilateral FTAs, all of which being between an ASEAN member-country and another country in Asia. That is, there is

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[4] For ongoing "status reports" of these agreements, see the websites of the Asian Development Bank, www.aric.adb.org.

[5] For example, the Preferential Trading Agreement (PTA), was a positive-list approach to trade liberalization with small margins of preference and limited product coverage, expanded somewhat during the 1980s but with no real impact on trade. Industrial cooperation, such as the ASEAN Industrial Project (AIP) system, never really got off the ground.

currently no bilateral agreement between the main economies in East Asia independent of ASEAN member countries, that is, between PRC; Japan; Korea; Taipei,China; and Hong Kong, China. This underscores the key importance of ASEAN as the central player to date in East Asian regionalism. In fact, this is one of the policy factors pushing the AEC: the fear that bilateral agreements between ASEAN member countries and nonmembers, some of which have features that are more advanced and comprehensive than ASEAN economic integration itself, will lead to the dilution and, perhaps, insignificance of ASEAN.

Third, recently there have been a slew of region-wide Asian FTA proposals. These would include an Asia Pacific Free Trade Area (APFTA), which would include all APEC members,[6] an East Asian Free Trade Area, recently proposed by Japan, and a proposal to create an FTA between the ASEAN+3, New Zealand, Australia, and India ("ASEAN+6"). None of these proposals has been articulated formally yet, though, as noted below, there have been some financial initiatives under the ASEAN+3 framework, which essentially covers almost all East Asia. However, it is noteworthy that the "noodle-bowl" effect caused by overlapping, inconsistent FTAs that have characterized the recent FTA trend in Asia are economically and/or politically sub-optimal. In any event, while these schemes are being actively discussed at various formal meetings, no official initiatives have been forthcoming.

B. Exchange-rate Management

Exchange-rate regimes in Asia differ widely, from various degrees of managed floats (e.g., most ASEAN countries, Japan, and Korea) to hard pegs (e.g., PRC and Hong Kong, China). There are many excellent reviews of exchange-rate regimes in the region (see, for example, ADB 2006). However, they all have one common characteristic: the US dollar as the (explicit or implicit) reference currency or anchor. In reviewing the evolution of the roles of the US dollar, yen, and euro in East Asia, Kawai (2002) notes that the US dollar was either the *de facto* or *de jure* anchor in the region's economies prior to the 1997/98 Asian crisis. During the crisis the role of the US dollar declined but in its aftermath the US dollar generally assumed its traditional role as anchor. Still, its importance diminished in certain countries (e.g., Indonesia) and there has been greater flexibility in exchange-rate management. As of early 2007, the role of the US dollar continues to be prevalent, but there are some indications of certain strains and a desire to diversify is in evidence. Weakness in the US dollar appears to have led some countries (e.g., PRC) to announce explicit reserve diversification strategies. Thailand in December 2006 even (briefly) imposed capital controls in order to prevent further *appreciation* of the *baht* against the dollar, reflecting problems associated with continued sterilization of foreign exchange interventions over a long period of time (holdings of US dollars by the region's central banks are at historical highs).

Numerous studies in the literature evaluate alternative exchange-rate regimes in Asia. Kwan (2001), for example, considers from an institutional/political-economy

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[6] This proposed agreement, which was intended to replace the APEC goal of a region of "open trade and investment" by 2010 for developed countries (2020 for developing countries), ostensibly has support of private sector organizations in the Asia Pacific and some academics, but has not been considered officially as of the time of this writing.

perspective the case for closer exchange-rate management in Asia, with a focus on the potential role of the Japanese yen in future arrangements. McKibbin (2004) evaluates the performance of several potential Asian exchange-rate arrangements with respect to their effects on output and inflation variability in the presence of various shocks, and finds that no regime dominates in the presence of all shocks but the regimes of floating and a basket peg to the US dollar, euro and yen generally perform better than an Asian currency union or yen-zone regime.

There continues to be a strong appetite in the region for various proposals regarding future exchange-rate management and cooperation, even if there has been little or no concrete progress in this regard at the policy level (as will be discussed below, various forms of monetary union in Asia have been tabled by academics but these have not been considered seriously in policy discussion). Arguably, this desire relates to the problems associated with the Asian crisis. This "contagion" effect of the crisis, which began in Thailand on 2 July 1997 and quickly spread to Malaysia, Indonesia, Philippines, and ultimately Korea and even Hong Kong, China took the region by surprise, particularly since the potential for "real contagion" was thought to be small given the relatively-low levels of trade integration between the affected economies at the time. However, the contagion effect was devastating. Kim, et. al. (2002) separate contagion into several separate categories, with bilateral real integration just being one (and a small part of it).[7] The others would include competition in third markets,[8] "financial contagion," which relates to international investor's behavior during a crisis; and "pure contagion," which could be "herd behavior," informational cascades, and the like. Kim, et. al. (2002) argue that all these channels played a role in the crisis and survey the relevant literature.

For Asian policymakers, this contagion effect clearly underscored the "policy externalities" associated with macroeconomic and financial policies in an increasingly-integrated region, which in turn has given birth to a variety of approaches geared to endogenize at least in part these externalities. We discuss these initiatives below. Suffice it to note that the presence of contagion at higher levels of integration (see, for example, Candelon, Piplack and Straetmans 2006 and Dungey, et. al. 2004) reinforces arguments in favor of monetary union.

C. Financial/Monetary Integration

One might trace the first initiative in favor of monetary/financial cooperation in East Asia to be the original "Miyazawa Plan," which was initiated by Japan during the Asian Crisis to create an Asian Monetary Fund to supplement the IMF. It was opposed by the IMF and the United States (US), but eventually led to the establishment of currency swap arrangements among East Asian countries (basically

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[7] Glick and Rose (1999), for example, examine five currency crisis episodes and find that countries affected by crisis have strong trade relations with the country that was the first victim of the crisis episode. But this effect is not important relative to other channels. Moreover, in the case of the Asian Crisis, Thailand accounted for only between 1 percent and 4.5% of the exports of the affected Asian economies.

[8] That is, if a crisis hits Thailand and Malaysia and Thailand compete significantly in the US market, a strong devaluation of the baht would impact the competitiveness of Malaysia, which would lead investors to sell short Malaysian *ringgit.* For analysis of this type of competitiveness effect in the Asian crisis context, see Kochar, Loungani, and Stone (1998), who find that this type of trade channel played an important role in the crisis.

bilateral swaps between Japan and individual countries) during the annual meeting of the Asian Development Bank in May 2000 (the "Chiang Mai Agreement"). These swaps have grown in terms of nominal values to approximately $75 billion (May 2006).

There have also been proposals to integrate capital markets in the region, from modest proposals to coordinate more closely existing national capital markets, to more ambitious proposals such as the creation of supranational regional bond and stock exchanges. The main issues relate to integration as opposed to capital market development more generally, although one motivation for integration is typically to foster development of the market.

Interest in stock market integration arises primarily because financial theory suggests that an integrated regional stock market is more efficient than segmented national capital markets. Capital market efficiency in Southeast Asia has become even more important after the Asian financial crisis. Southeast Asian countries are specifically seeking to reduce the traditional dependence of firms on bank loans rather than bond and stock issuances, and at the same time are seeking new capital from outside the region.

With an integrated regional stock market, investors from all member countries will be able to allocate capital to the locations in the region where it is the most productive. With more cross-border flows of funds, additional trading in individual securities will improve the liquidity of the stock markets, which will in turn lower the cost of capital for firms seeking capital and lower the transaction costs investors incur. These suggest a more efficient allocation of capital within the region.

From the perspective of a portfolio investor outside the region, stock market integration suggests that separate markets move together and have high correlations, so there is less benefit from portfolio diversification across countries. However, an integrated regional stock exchange will be more appealing to investors from outside the region who would find investment in the region easier or more justifiable. As shares become more liquid and transaction costs fall, fund managers become increasingly willing to take positions in the stocks. In addition, outside investors may take notice of the regional stock exchange instead of dismissing a collection of small national exchanges: the whole (one regional stock exchange) might be greater than the sum of the parts (individual country exchanges). Click and Plummer (2005) find evidence of co-integration of the original ASEAN-5 stock markets, which would bode well for the creation of a regional market. Candelon, Piplack and Straetmans 2006 come to the same conclusion; they consider five different Asian economies (Malaysia; Thailand; Taipei,China; Singapore; and Korea) and find an increased co-movement of these stockmarkets during periods of boom and bust, with a common break in 1997 (which can only be interpreted as an "Asian Flu" effect).

With respect to fixed-income markets, the need to finance emerging government deficits in the region, robust demand for infrastructural projects, and ambitious business plans of many private-sector companies make the development of bond markets a natural priority, though a major challenge. Fixed-income instruments are important not only as an additional financial vehicle but also as a complement to equity markets. Firms may wish to raise medium- and long-term financial capital

without relinquishing more control of the firm, or possibly as a complement to equity issuances (or *vice versa*; major corporate bond issues are often accompanied by warrants). Moreover, ASEAN governments in particular have recognized that a stronger and more extensive local bond market can be strong protection against maturity and currency "mismatches." While ASEAN launched a study on the possibility of creating an ASEAN bond market in 2002–2003, the idea was essentially put on a back-burner in favor of an ASEAN+3 framework, which would include the major financial players in Asia. For example, the December 2002 "Asian Bond Markets Initiative" established a (small but growing) bond pool under the auspices of the Bank for International Settlements.

Nevertheless, financial and monetary cooperation in Asia continues to be at a conceptual stage. Even its most successful cooperative effect, the Chiang Mai Initiative, relatively lacks ambition if one considers that its swaps totaling $75 billion (May 2006) will be drawn from reserves that are currently at about $2.5 *trillion*. But the economics seem to support such initiatives.

III. Do Macroeconomic and Policy Trends in Asia Support Monetary Union?

Ever since the World Bank's publication of the *East Asian Miracle* (World Bank 1993), the successful, export-oriented approach to economic development has been a model for developing countries. Of course, the region's remarkable trade performance has been made possible by general political stability, stable macroeconomic policies, and market-oriented microeconomic reforms (see, for example, World Bank 1993, World Bank 2006, and ADB 2006). While an exhaustive review of the determinants of the "East Asian Miracle" would go beyond the scope of this paper, suffice it to note that more than any other region in the developing world, Asia has been able to exploit to its advantage the global marketplace and globalization.

As has been well-documented,[9] over the past 20 years the region has been highly successful in raising living standards (and, with it, reducing poverty significantly) and in maintaining healthy macroeconomic indicators. Moreover, it exhibits a classic process of structural change as the economic development proceeds apace, with agricultural falling in importance while services (and, usually, manufactures) rise.[10]

There has also been a process of convergence at work. As Barro and Sala-I-Martin (2004) show, while the hypothesis of global economic convergence ("beta" convergence) can be rejected with reasonable degrees of confidence, there is evidence of "conditional convergence".[11] But East Asia is the only region where economies are catching up unambiguously with each other and the OECD (World Bank 2006). For example, while the *per capita* incomes of Singapore and

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[9] ADB (2006) and World Bank (2006) each give excellent reviews of these processes, but the literature is large.

[10] The exception in terms of services is Thailand, whose share actually falls slightly. However, this reflects a problem with collection of services data in Thailand: in short, laborers who work only part time in agriculture are included as agricultural workers, even if they generally rely on employment in services as their most important source of income.

[11] In calculating "conditional convergence," the authors only include countries that meet certain criteria, that is, countries with hyper-inflation, political instability, and the like are excluded from the database.

Taipei,China were about half that of Japan in 1985, by 2004 they had almost caught up to Japan…and Hong Kong, China actually surpassed it.[12] Korea's *per capita* GDP was still one-third lower than that of Japan in 2004 but its catching-up process has been impressive, with *per capita* GDP virtually quadrupling since 1985.[13] Most ASEAN countries also exhibited notable catch-up relative to Japan (and other OECD countries). The most remarkable story, however, is that of PRC, which has been transformed from a poor, isolated, autarkic economy into an economic powerhouse in a generation. This dramatic transformation is attributable to a major overhaul of economic policy that has embraced (and, in some ways, is now leading) globalization, rather than resisting it as in the past.

This outward-oriented approach to economic development, which has been a key engine of growth in Asia, has made it a natural candidate for regional economic integration initiatives in a world that is increasingly eschewing a multilateral approach to trade policy in favor of bilateralism and regionalism. In addition to the need to reclaim most-favored nation status in key markets ("defensive" regionalism), FTAs in Asia are being used as a means to address key areas that have been hitherto excluded in the WTO talks.

A. The Economics of Monetary Union: Is Asia an Optimum Currency Area?

There exist several studies in the literature that attempt to address the question of whether or not some sort of Asian currency area would make sense, often using the experience of monetary union in Europe as a yardstick. Such comparisons are only natural. The theory of OCAs does not provide us with an optimal "threshold"; however, if it is assumed that the EU makes sense as a currency area, comparisons of indicators between what the EU was like prior to monetary union and what Asia is now would be appropriate.

Perhaps the most comprehensive works on the subject thus were undertaken by Bayoumi and Eichengreen (1999) and Bayoumi, Eichengreen, and Mauro (1999). They use a variety of indicators consistent with the OCA literature, from analysis of intra-regional trade to correlations of aggregate supply shocks, to compare the EU prior to Maastricht and Asia/ASEAN today.[14] They find that, in general, Asia comes as close to meeting OCA criteria as Europe did. However, they note that historically the essential preconditions for a durable regional monetary arrangement depend critically on politics rather than economics. In this sense, Asia looks much less like an OCA. Nicolas (1999) essentially comes to the same conclusion in terms of political limitations but is less sanguine with respect to the economics of a currency area in ASEAN. Tang (2006) focuses on symmetry of supply and demand shocks and speed of adjustment in evaluating possible configurations of monetary union across major Asian economies. He finds that smaller subgroupings of economies in Asia (e.g., Malaysia and Singapore; ASEAN more generally; Hong Kong, China; and Taipei,China) fit the OCA criteria better than a general Asian monetary union.

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[12] World Bank Development Indicators database; CEIC database.
[13] Ibid.
[14] One problem with the Bayoumi, Eichengreen, and Mauro (1999) paper is that they define ASEAN to include all of its official member states, including the most recent members, i.e., Viet Nam, Lao PDR, Cambodia, and Myanmar. None of these countries would be a candidate for monetary integration of various sorts in the short- or medium-run, given their low level of economic and financial development, closed financial markets, and unconvertible currencies.
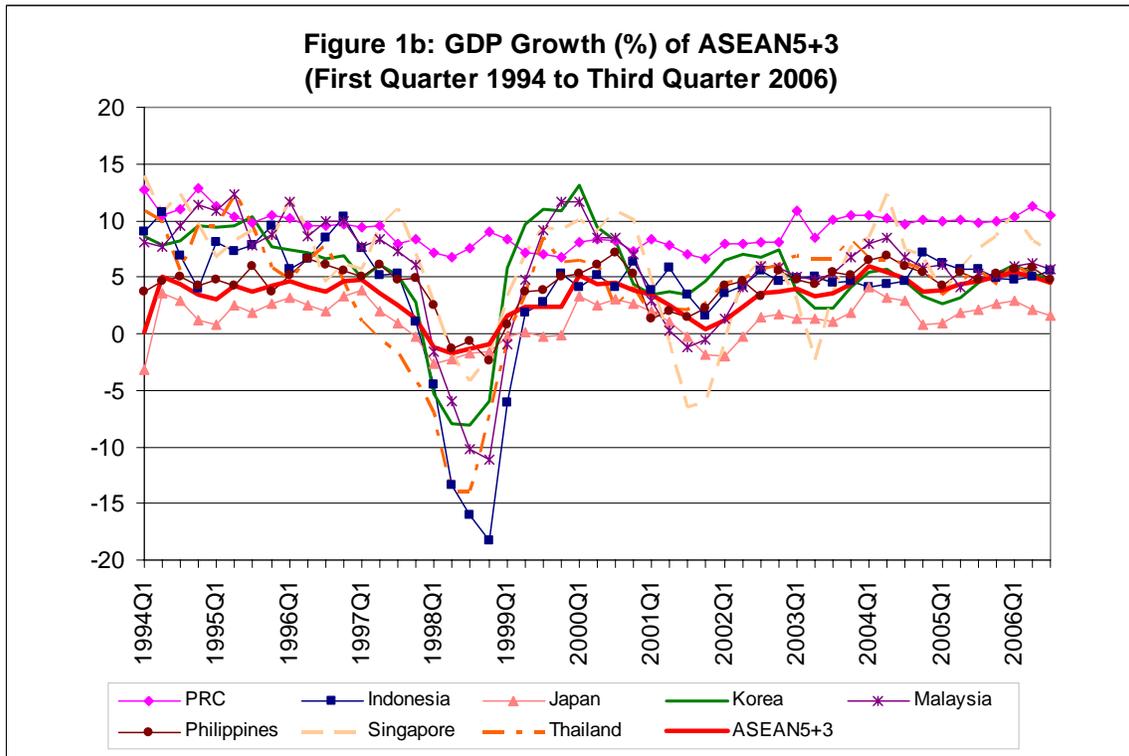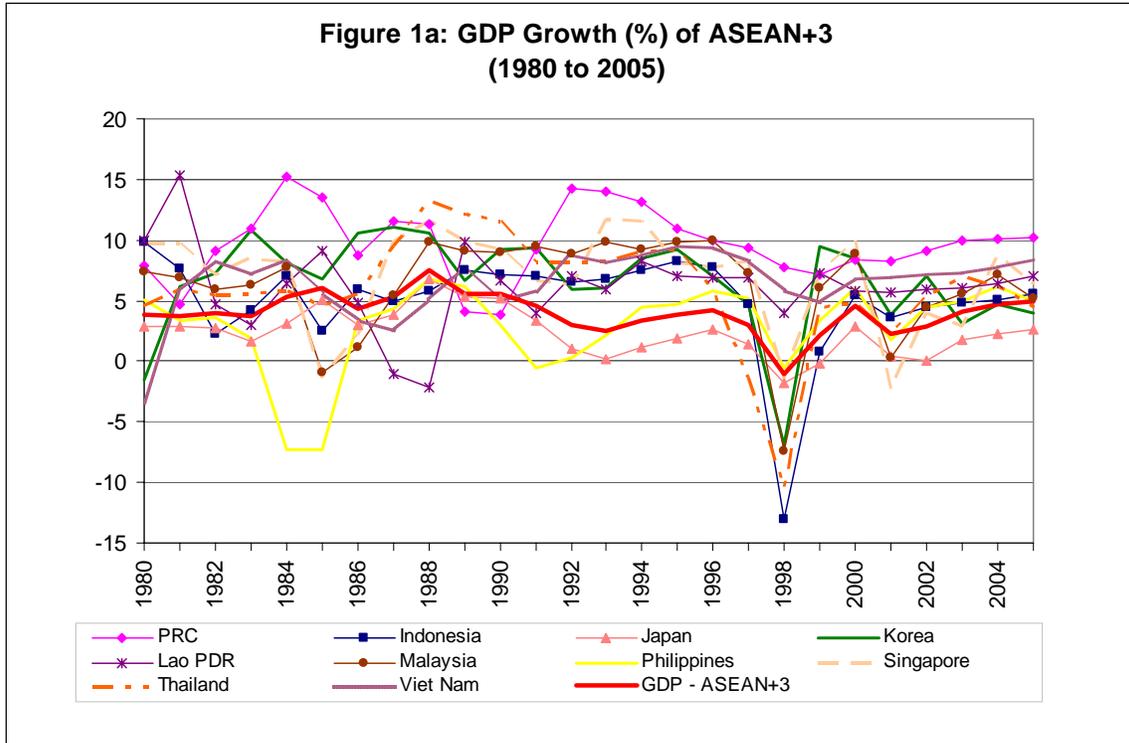
One way to evaluate the OCA symmetry criterion is to estimate correlations of macroeconomic variables between members of a proposed currency group over time using high frequency data. The more highly correlated these variables are throughout the business cycle, the greater the implied symmetry of economic structures of the component members of the group, and the more likely the group would constitute an OCA. Kose, et.al. (2003) use overall output (real GDP) as the key macroeconomic variable for the ASEAN-5, Korea, and Taipei,China. The results show fairly high (positive) cross-correlations of output between most ASEAN countries and between individual countries and the Asian aggregates. For example, correlations between the ASEAN-5 countries and the Asia Cycle 2 aggregate fall in the range of 0.36 (Philippines) and 0.49 (Singapore). Moreover, with the exception of Indonesia, correlation coefficients have generally been rising over time. Excluding Indonesia, they increased over time in all cases expect that of Malaysia-Philippines. The highest correlations in period 2 were found between Malaysia and Indonesia (0.73); Singapore and Thailand (0.63); and Singapore and Malaysia (0.58). In general, correlations between ASEAN countries are often higher than with the general Asia group aggregates.

In short, it would be difficult to state unequivocally that East Asia constitutes an OCA. However, macroeconomic trends and symmetry analysis would suggest that at least it is moving in that direction, and if the EU is used as the benchmark, it already may be there. Moreover, the "endogeneity" process noted by Frankel and Rose (1998) would suggest that, should Asia join in monetary union, the convergence indicators would be reinforced. Nevertheless, the political *status quo*, particularly in Northeast Asia, would preclude such an arrangement—at least in the short-run. But the confluence of closer trade integration and the emergence of an "Asian identity" could well enhance the potential for a removal of existing political obstacles.

The Maastricht Treaty created considerable excitement in the discipline of international economics regarding the economic logic behind monetary union. Since then, there have been hundreds of studies estimating the economic effects of monetary union. Grubel (2006) gives an excellent survey of the economics of monetary union, using a framework that is highly relevant to the Asian case. In this section, we review both the convergence of financial indicators and survey the literature on monetary union in Asia, with a focus on studies related to symmetry of economic structure.

Figure 1 shows GDP growth rates for the ASEAN+3, both individually and as a group. Figure 1a is based on annual data for the period 1980–2005, whereas Figure 1b employs quarterly data for the period 1994–2006Q3.[15] Clearly, the ASEAN+3 economic performance has been impressive; growth has been strong for just about all countries (the Philippines is an exception) outside the 1997Q3–1998Q4 Asian Crisis period.

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[15] Data for Brunei Darussalam, Myanmar, and Cambodia were not available for the annual data calculations; data for Brunei Darussalam, Myanmar, Cambodia, and Lao PDR were unavailable for the quarterly-based calculations.

**Figure 1a: GDP Growth (%) of ASEAN+3
(1980 to 2005)**

Legend: PRC, Indonesia, Japan, Korea, Lao PDR, Malaysia, Philippines, Singapore, Thailand, Viet Nam, GDP - ASEAN+3

**Figure 1b: GDP Growth (%) of ASEAN5+3
(First Quarter 1994 to Third Quarter 2006)**

Legend: PRC, Indonesia, Japan, Korea, Malaysia, Philippines, Singapore, Thailand, ASEAN5+3

Sources: CEIC, IMF *World Economic Outlook Database*, and World Bank *World Development Indicators Online.*

A process of convergence also appears to be in evidence. In order to capture this process, we calculate correlation coefficients between individual-country growth and the ASEAN+3 for pre- and post-crisis periods using annual (Table 1a) and quarterly (Table 1b) data. The results are illuminating. Table 1a shows that while in the pre-crisis period not one correlation coefficient was statistically significant (and many were negative), in the post-crisis period half of them were. Moreover, the statistically-significant coefficients are all positive and remarkably high, i.e., in the range of 0.81 and 0.95. The same results generally obtain using quarterly data (Table 1b), with lower estimated coefficients but a higher number of statistically-significant ones (only Malaysia's continues to be statistically insignificant).

In combination with the existing literature summarized above, these results give strong support to the view that, while we do not know if East Asia constitute an OCA, we can be confident that symmetry in the region is increasing and is high for just about every country. But the literature points to two other possible criteria: factor flows and degree of interdependence. With respect to the former, the prognosis is less optimistic: intraregional labor flows are very small even by international standards (World Bank 2006b) and intraregional flows of foreign direct investment are relatively low.[16] On the other hand, intraregional trade shares are relatively high and growing. As can be seen from Figure 2, while the share of sub-regional trade in ASEAN is relatively low for most countries except the transitional economies, East Asia is becoming increasingly important in the trade of just about all regional economies since 2001, though the trend is not generally monotonic. In fact, no economy in the region undertakes less than 40% of its trade with other East Asian partners, and for most the share is 60% or more. This is especially impressive when one remembers from the above discussion that, unlike the EU, no preferential trading arrangements were really in place to influence these trade shares with the (theoretical) exception of AFTA.

As Rana (2006) argues, this process of rising intraregional trade is being led by intra-industry trade. He uses a gravity model to show that the rise in economic symmetry in the region *derives* from this increase in intra-regional trade. The literature would suggest that this process would bode well for a continuing "endogenous" process of increasing symmetry.

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[16] UNCTAD, FDI Statistics online. For example, intraregional FDI in ASEAN comes to only 13% of the total. Singapore is an FDI hub in ASEAN (accounting for two-thirds of FDI in the region) but its major sources are from outside the region, particularly the EU and the US. Japan, and Korea only account for about 1% of global flows of FDI each. Only PRC really stands out as a major recipient of FDI flows from the region (mainly from Hong Kong, China; Japan; and Taipei,China).

Table 1a: **Correlation of GDP Growth Rates between Individual Countries and ASEAN+3: 1980–2005 [1/]**

	1980 to 1997	1998 - 2005
China, People's Republic of	-0,41	0,58
Indonesia	-0,23	0.9036*
Japan	-0,14	0.8103*
Korea, Rep. of	0,28	0,53
Lao PDR	-0,39	0,68
Malaysia	-0,20	0.8824*
Philippines	-0,19	0.9496*
Singapore	-0,16	0,69
Thailand	0,46	0.8635*
Viet Nam	-0,24	0,70

* Significant at 5% level.

[1/] ASEAN+3 excludes Brunei, Cambodia, and Myanmar. Regional GDP growth is weighted by gross national income (atlas method, current $).

Sources: IMF *World Economic Outlook Database* and World Bank *World Development Indicators Online*.

Table 1b**: Correlation of GDP Growth Rates between Individual Countries and ASEAN5+3: First Quarter 1994 to Third Quarter 2006 [1/]**

	Q11994–Q41997	Q11998–Q32006
China, People's Republic of	-0,16	0.5117*
Indonesia	0,33	0.7633*
Japan	-0,08	0.7690*
Korea, Rep. of	0,08	0.5312*
Malaysia	0,35	0,81
Philippines	0,33	0.8479*
Singapore	-0,31	0.7322*
Thailand	0,06	0.7971*

* Significant at 5% level.

[1/] Regional GDP growth is weighted by gross national income (atlas method, current $).

Sources: CEIC Database and World Bank *World Development Indicators Online*.

Figure 2: Intraregional Trade Shares of East Asian Economies (% of total trade, 1980 to 2005)
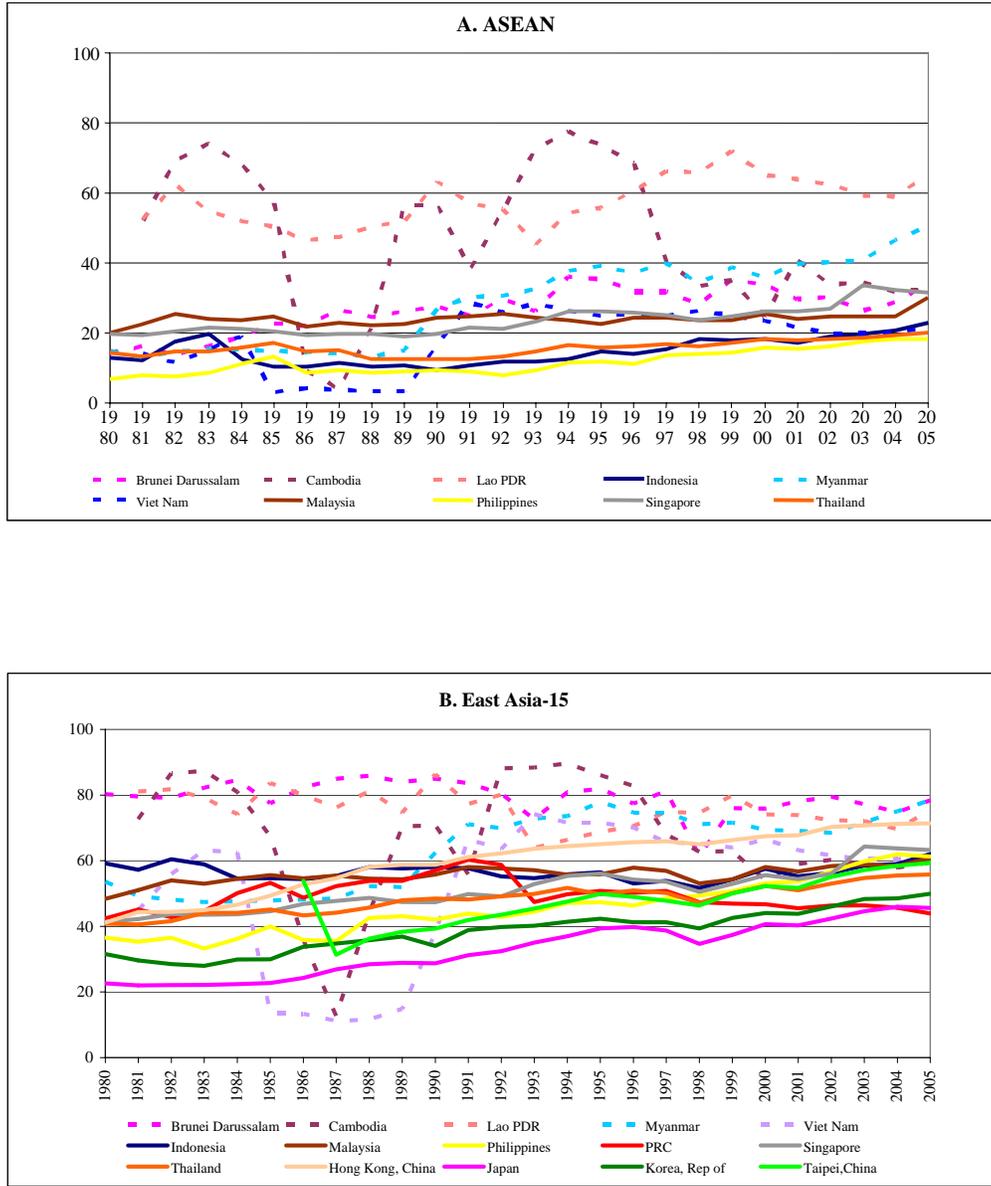
Source: IMF Direction of Trade Statistics.

B. Macroeconomic Policy Diversity in East Asia: Would Maastricht Criteria Be Possible?

As part of the monetary union process in Europe, it became clear that some policy harmonization was necessary in order to ensure a stable regime. The famous "Maastricht Criteria," later reinforced by the Stability and Growth Pact, had four principal requirements: (1) debt/GDP should be no greater than 60 percent (though this indicator was downplayed given the greater than 100% shares in Belgium and Italy); (2) any deficit/GDP should be no more than three percent; (3) the inflation rate and nominal interest rate of a country should be no greater than 1.5% higher than the average of the lowest three countries; and (4) there should be no realignment of a country's exchange-rate peg in the Exchange Rate Mechanism (ERM) of the European Monetary System (EMS) for 2 years prior to acceding to monetary union. Thus, the main goal was macroeconomic policy harmonization and stability.

There has been considerable debate on the economic logic of the Maastricht criteria in general, and the actual numeric criteria in particular. But if we were to subject East Asia to the same test, how would it fare?

First, fiscal policy would generally receive high marks, especially relative to the EU. The share of government spending in GDP in the NIEs (less than 25 percent), ASEAN (11–30% range, save the peculiar cases of Brunei and Myanmar), and China (18 percent) are low relative to the EU average, even though as developing countries this is not a surprising outcome,.[17,18] Japan's share is somewhat higher (37%) but this is among the lowest in the OECD (though, of course, its debt/GDP ratio of over 165% is the highest in the OECD). With respect to budget deficits, Table 2 shows that there is a good deal of variability across East Asia. Deficit/GDP ratios of the ASEAN countries were less than three percent for all original ASEAN countries save Malaysia (3.8%), but only Viet Nam among the transitional economies would meet the Maastricht inflation criterion. Singapore actually had a surplus of 8% of GDP. It is interesting to note that the crisis-affected ASEAN countries had surpluses or essentially balanced budgets on the eve of the crisis. Since then, they have tended to have modest deficits, with the occasional exception of Thailand. The deficits of PRC and Taipei,China (2004) came to approximately 1-2%, while Korea and Hong Kong, China had surpluses. Only Japan, which currently has a deficit/GDP of about 5% and has not met the Maastricht criteria since 1993, would fail the test outright. Hence, with the exception of Japan and a few of the smaller, transitional ASEAN economies, reaching a 3% target would not be particularly difficult for East Asia.

By developing-country standards, East Asia has been characterized by conservative monetary policies and price stability. Inflation rates in the ASEAN countries are in the 0–10.5% range (with Indonesia defining the upper bound); PRC and the NIEs have

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[17] With a smaller tax base, potential fiscal burdens are less.
[18] All data for this section not included in Table 2 are taken from the IMF World Economic Outlook Database; World Bank *Development Indicators Database;* ADB *Key Economic Indicators*; or the *OECD Statistics Database*.

Table 2: Divergence in East Asian Macroeconomic Indicators (2005)

	Public Sector Debt (% of GDP) [1]	Fiscal Balance of Central Government (% of GDP)	Inflation Rate (%)	Interest Rate (%) [2]
Japan	…	-5,2	-0,3	0,1
People's Republic of China	19,2	-1,6	1,8	2,5
NIEs-3				
Hong Kong, China	…	0,3	1,1	3,2
Republic of Korea	22,0	0,8	2,7	3,7
Taipei,China	30,3	-1,0	2,3	1,5
ASEAN				
Brunei Darussalam	…	…	0.9 [3]	…
Cambodia	…	-3,1	5,8	…
Indonesia	58,3	-0,5	10,5	10,3
Lao PDR	…	-6,0	7,2	…
Malaysia	68,9	-3,8	3	2,9
Myanmar	…	-6.0 [3]	4.5 [3]	…
Philippines	101,3	-2,7	7,6	7,0
Singapore	…	8,0	0,4	2,3
Thailand	49,4	0,1	4,5	3,3
Viet Nam	40,8	-2,3	8,3	…

[1] Refers to consolidated government debt except for Indonesia, Korea, and Taipei,China which refer to central government debt while Philippines refer to nonfinancial public sector debt.
[2] Money market rate.
[3] As of 2004.

Sources: Asia Economic Monitor (December 2006), Asian Development Outlook (2006), and Bloomberg.

inflation rates of less than 3%; and Japan continued to be in a deflationary state in 2005 (-0.3%). Thus, while inflation in the region is generally under control, there exists considerable disparity in terms of inflation rates. It is worth noting, however, that the inflation criterion for Maastricht has been a source of major disagreement: for example, if Luxembourg, the Netherlands, and Sweden were experiencing deflation, would it make sense to use their average as a reference point, given their relative sizes and falling prices? If we did the same for East Asia, we would calculate an average 0.3% percent (Singapore, Japan, and Brunei Darussalam), meaning that all countries with inflation rates above 1.8% would be ineligible. While this would seem normal to the European Central Bank, whose inflation target is 2% or less, it would mean that 12 out of 15 countries would fail to meet the criteria. In any event, it would take some effort to force relative convergence of inflation rates, though this would not be a task that would be much more difficult than it was in Europe. The same story generally applies to interest rates, though divergence is much less than for inflation. However, as most East Asia countries have underdeveloped bond markets, it is unclear if economy-wide interest rates reflect the true price of risk in the economy, due to, *inter alia*, lack of liquidity in the market. In addition, there is no doubt a far greater spread of risk across bonds in East Asia than there was in the case of the EU.

Finally, regarding exchange rates, Japan and the NIEs have been characterized by high trend volatility relative to each other and, particularly, compared to the ASEAN countries. This is a reflection of both institutional arrangements (e.g., pegs, managed float, and float) and underlying macroeconomic variables. ASEAN exchange rates, however, pretty much seem to move in step with each other since the early 1990s, reflecting in large part the implicit or explicit peg to the US dollar. In any event, these regimes have been developed in an independent context; certainly, prior to any movement toward monetary union the regime would require an exchange-rate mechanism (such as the ERM/EMS prior to monetary union).

In short, while there is no magic number that one could assign to the degree of economic symmetry across these countries in terms of basic macroeconomic variables, empirical assessments would support the view that ASEAN+3 countries are increasingly symmetric, and the share of intra-regional trade in total trade is relatively high and rising. This process is being bolstered by increasing shares of intra-industry trade. Moreover, with respect to policy harmonization, the conclusion is mixed: fiscal policies could be fairly easily harmonized, whereas the monetary variables might take some doing. In any event, any policy decision to move toward monetary union in Asia would require a transitional period, as was the case in Europe.

IV. Computational Scenarios of East Asian Integration

As noted above, while Asia has embraced various forms of monetary/financial and trade integration simultaneously, it has been far more active in negotiating real-sector accords. The ultimate implications of formal trade accords are complicated, including the "static" effects of integration (i.e., trade creation and diversion), dynamic effects (e.g., FDI creation and diversion, productivity effects, economies of scale) and various political-economy implications of preferential trading arrangements. The fact that Asian countries have been negotiating FTAs with both Asian and non-Asian countries suggests that the ultimate effect of the FTA movement in Asia is *a priori* indeterminant: it could either lead to an increase or a decrease in intraregional trade and investment.

To the extent that FTAs change intraregional real-sector integration, *ceteris paribus* the FTA movement will be important in determining whether or not formal trade integration will support an OCA in Asia. Trade has obviously been an important part of the story in the evolution of integration in the EU. While authors[19] differ with respect to their conclusions as to whether or not trade integration will ultimately increase (due to lower regional transactions costs) or actually decrease (due to greater specialization) following the introduction of the euro, the high degree of trade integration prior to monetary union in Europe is generally considered to have been an important criterion for success, along with other traditional variables reviewed above, e.g., economic symmetry and free factor flows. For example, Babetskii (2005) uses a technique that employs time-varying coefficients of supply and demand shock asymmetry with indicators of trade intensity and exchange rates and finds that, *intra-*

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[19] See, for example, the review in De Grauwe (2005).

alia, an increase in trade intensity leads to higher symmetry of demand shocks, which in turns supports an OCA.

Even before the many FTAs in Asia have been able to have any discernable effect, the process of real integration in Asia is increasing the potential gains from monetary union (as noted above) and appears to be driving at least in part the symmetry of economic structure in the region (Rana 2006). To the extent that FTAs serve to reinforce this process ("flag following trade"), benefits will be magnified.

In short, future FTAs could play an important complementary role in setting the stage for monetary integration and, in the long-run, monetary union in Asia. The type of FTAs developed will likely make a difference, however. In the remainder of this section, we consider the aggregate economic effects of a series of possible scenarios in the region. In sum, we find that an ASEAN+3 scenario would generate a far better outcome for the region than the existing mix of bilateral FTAs and, in fact, would yield a majority of gains in an all-Asia scenario. Coupled the results of Section III in which economic symmetry in ASEAN+3 has been rising significantly, such a scheme might be an attractive policy option.

A. A CGE Model of Trade Scenarios in Asia

There is increasing academic interest in examining the economic effects of East Asian FTAs using global computable general equilibrium (GCGE) models. This interest stems from advances in GCGE model development and computing power as well as strong international policy attention on the implications of an East Asia FTA. Policy makers are particularly interested in understanding the magnitude of the benefits of an East Asian FTA for member countries, the possible losses to non members, and sector-level gains and losses for members and non-members alike. But they are also important to the analysis of the future of economic integration in the region, including proposals related to the "Asian Economic Community" and, of course, Asian monetary union.

By relying on a simulation approach to analyze the economic effects of policy changes due to the formation of an East Asia FTA, GCGE models can shed light on these issues. The GCGE models used in empirical studies have varied somewhat in their underlying economic structure, behavior of agents and focus but commonly use the Global Trade Analysis Project (GTAP) database to examine an ASEAN+3 policy scenario or an APEC policy scenario. The primary focus of such policy scenarios is on the removal of price distortions against imports that arise from existing trade barriers and other sources. Most studies have used the standard GTAP model[20] with constant returns to scale in production, perfect competition, and the Armington assumption (or some variant of GTAP) while a few have adopted GCGE models with firm-level imperfect competition.

Four major findings from the formation of an East Asian FTA are indicated by GCGE studies (see Ballard and Cheong, 1997; Urata and Kyota, 2003; Gilbert *et al.* 2004; and Lee *et al.*, 2004):

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[20] See Hertel (1997). For more details about the current standard GTAP model see www.gtap.agecon.purdue.edu

1) all the countries involved would collect welfare gains;

2) the countries that are excluded are much more likely to suffer welfare losses;

3) production of sectors with a comparative advantage increases;

4) an East Asian FTA is a step toward multilateral liberalization.

Depending on the GCGE model used and data sources, studies, however, differ in their estimates of welfare gains to members and losses to non members from an East Asia FTA. For example, Urata and Kyota (2003) estimate from GTAP simulations that an ASEAN+3 FTA will generate welfare gains for members from the highest of 12.5% of GDP for Thailand and 6.6% for Viet Nam to the lowest of 0.19% for Japan and 0.64% for the PRC. They find modest welfare loses for non-members of -0.02% for the EU, -0.09% for the US and -0.29% for Australia/New Zealand. Also using GTAP, Gilbert *et al.* (2004) find that an ASEAN+3 FTA will produce higher welfare gains for members than a PRC-Japan-Korea FTA indicating that broadening FTAs brings benefits. They report lower welfare gains from an ASEAN+3 FTA for Viet Nam (3.1%) and Thailand (1.6%) than Urata and Kyota (2003). From their LINKAGE CGE model, Lee *et al.* (2004) show significantly higher welfare gains from an ASEAN+3 FTA for PRC+Hong Kong, China (4%) and Japan (1.6%), notable gains for Korea (3.7%) and ASEAN as a group (4%) and welfare losses for the rest of the world of under -0.2%. Using a GCGE model with firm-level imperfect competition, Ballard and Cheong (1997) indicate that both an APEC FTA and an East Asian FTA would generate gains for all members even without the participation of the US and Japan. They go on to show that developing nations of Asia are expected to gain more when the US joins the FTA than when Japan joins.

Furthermore, some studies point to how regional trade and country specializations could evolve in the future. One might expect that an East Asia FTA would increase the share of intraregional trade as well as the degree of specialization of each country according to comparative advantage. In part this effect might arise from an enlarged regional market resulting from elimination of trade barriers which gives more scope for differentiated products. Nonetheless, the available CGE simulation studies indicate a mixed and inconclusive picture of the likely effects of an East Asia FTA on regional trade and country specializations. For instance, Urata and Kyota (2003) suggest that such effects may be small in the case of an ASEAN+3 FTA. They argue that "the results show that the impact of an East Asia FTA are not large enough to change the composition of each country's exports and imports substantially" (2003, pp. 12–13). They suggest that 5% changes in exports are indicated for a few sectors like mining and textiles in Viet Nam and food and beverages in Korea and Thailand. For other sectors and countries the changes in exports are found to be mostly less than 1% (with some are less than 5%). Likewise, Urata and Kyota argue that an ASEAN+3 FTA may not significantly expand intra-industry trade. In contrast, Gilbert *et al.* (2004) looking at production effects (rather than exports) of an ASEAN+3 FTA find large changes in value added including declines of between 13% to 42% in the automobile sector in most member countries, rises in the textile sector of between 5–10% in many member countries, and increases in electronics of between 2% to 8% in some member countries. If the changes in value added indicated by Gilbert *et al.* (2004) mirror changes in exports,

then it is likely that an ASEAN+3 FTA may have notable impacts on intra-industry trade and country specialization. Further work is needed on this important issue using a combination of CGE analysis and industry-level studies. Such an exercise is beyond the scope of the current study.

Bchir and Fouquin (2006) use the CEPII *Mirage* model to create several scenarios of economic integration based on hub-and-spoke (ASEAN+1 agreements) and Asian regional approaches, as well as whether or not the agreements will be all-inclusive or would exclude sensitive products. They find that ASEAN, for example, would be better off with a series of bilateral agreements than with an Asian-inclusive approach, as this would allow them better to exploit their comparative advantage in agriculture, which is characterized by much higher levels of protection in the region than manufactures.

Previous GCGE studies provide valuable insights on the likely economic effects of an ASEAN+3 FTA and an APEC FTA. There is a need to build on this literature and adopt a more comprehensive approach that incorporates the new reality of multiple FTA initiatives in East Asia, new data sources and recent modeling developments. Accordingly, the following six policy scenarios are considered in the GCGE modeling exercise:

1) a fragmentation scenario: a continuation of the current wave of bilateralism, where the region is fragmented by several bilateral or small regional FTAs;

2) An ASEAN+3 FTA scenario: free trade among ASEAN countries; PRC+Hong Kong, China; Japan; and Korea;

3) An ASEAN+6 FTA scenario: free trade among ASEAN+3 countries, India, Australia, and New Zealand;

4) An Asia-wide FTA Scenario: free trade among all Asian countries;

5) An APEC FTA: free trade among all APEC members;

6) A global trade liberalization scenario: complete abolition of import tariffs and export subsidies.

Some comments on these scenarios is appropriate. Scenario 1 represents the current reality of multiple and overlapping bilateral/regional FTAs involving East Asian countries. Scenario 2 is included because this seems to be gradually taking shape with ASEAN having signed liberalization of goods agreements with both PRC and Korea[21] while negotiations with Japan are still ongoing. Although negotiations for an ASEAN+6 FTA have not yet begun, scenario 3 is considered because policy makers have become more conscious of the synergies to be gained by linking India and Australia-New Zealand with ASEAN+3. Scenario 5 is provided to represent the discussions among APEC economic ministers on ways to improve trade relations. Scenario 4 and 6 are included to enable comparisons of relative gains and losses from other scenarios with hypothetical cases.

The estimates of the economic impacts of FTA scenarios were prepared using the Asian Development Bank's General Equilibrium Model for Asia's Trade (GEMAT). GEMAT—which is an applied general equilibrium model of the global economy with

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[21] However, negotiations on services with PRC and Korea are still ongoing.

a focus on Asia—extends the *LINKAGE* model developed at the World Bank (see ADB 2006 for details of GEMAT). It has strong micro-foundations and captures detailed interactions among industries, consumers and governments, across the global economy. It is ideally suited for the analysis of structural changes over periods that are sufficiently long to allow markets to adjust and rigidities to work themselves out. Among other assumptions, GEMAT incorporates firm heterogeneity, fixed trade costs and imperfect competition.

Table 3 summarizes the results for GDP and welfare in terms of equivalent variation for the six policy scenarios. It comes as little surprise that scenario 1—a fragmented reality of multiple bilateral and regional FTAs—is the least attractive for all regions and countries. Among others, this scenario may give rise to the famous "spaghetti" or "noodle bowl" effect which refers to higher transactions costs from multiple rules of origin and standards in the growing number of FTAs in East Asia. Global free trade (scenario 6) is the most attractive but unrealistic bearing in mind that even the WTO process has been beset by uncertainties on the timing and depth of multilateral agreement to reduce trade barriers.

Also perhaps somewhat unrealistic, an APEC FTA (scenario 5) brings gains to Northeast Asia and the US but ASEAN witnesses less gains compared to scenario 1. The rest of Asia and Europe, which would be outside an APEC FTA, also lose relative to scenario 1.

Under the ASEAN+3 Scenario (scenario 2), the welfare of members increases with Northeast Asia and ASEAN witnessing gains of 0.37% and 2.02%, respectively. Nonmembers (the rest of Asia, US and Europe) incur modest losses. Hence, these results are in line with that of previous CGCE studies on an ASEAN+3 FTA. If free trade among ASEAN+3, Australia, New Zealand, and India (scenario 3) were to be realized, Northeast Asia (0.58%) and ASEAN (2.06) are expected to capture even greater gains than under the ASEAN+3 FTA. However, non-members are likely to experience greater losses too. The Asia-wide FTA (scenario 4) would bring gains to the rest of Asia, marginal gains to Northeast Asia and ASEAN and losses to non-members.

Table 3: **Impact of 6 FTA Scenarios,** Real Income (Equivalent Variation)						
	(1) Fragmentation Scenario	**(2) ASEAN+3 FTA**	**(3) ASEAN+6 FTA**	**(4) Asia-wide FTA**	**(5) APEC FTA**	**(6) Global Free Trade**
In US$ million 2001 prices						
Northeast Asia	-1,219	21,724	34,460	35,713	56,734	72,944
ASEAN	8,869	10,375	10,582	10,907	8,341	11,319
Rest of Asia	-101	-425	-619	1,355	-1,560	4,288
US	-1,371	-2,362	-3,633	-3,263	12,035	22,884
Europe	-1,021	-904	-1,597	-1,413	-3,047	25,325

ROW	-555	-464	-1,880	-2,291	280	14,861
World	4,401	27,546	40,546	45,012	74,689	153,718
	In % of GDP					
Northeast Asia	-0.02	0.37	0.58	0.60	0.96	1.23
ASEAN	1.72	2.02	2.06	2.12	1.62	2.20
Rest of Asia	-0.01	-0.06	-0.09	0.19	-0.22	0.61
US	-0.01	-0.02	-0.04	-0.03	0.12	0.24
Europe	-0.01	-0.01	-0.02	-0.02	-0.04	0.30
ROW	-0.01	-0.01	-0.04	-0.05	0.01	0.34
World	0.01	0.09	0.14	0.15	0.25	0.51
Source: ADB Staff estimates using GEMAT						

The impact of the three Asian FTA scenarios on East Asian economies is provided in Table 4. The ASEAN+3 and ASEAN+6 FTAs have different impacts on the three Northeast Asian economies. Korea is expected to see the largest gains (3.49%) under an ASEAN+3 FTA and these increase further (3.94%) under the ASEAN+6 FTA. Japan experiences similar but modest gains under the two scenarios. However, the PRC (including Hong Kong, China) experiences small losses under the ASEAN+3 FTA which reduce somewhat under the ASEAN+6 FTA. The expected welfare losses to the PRC are a puzzle and preliminary research have attributed them to special features of regional trading patterns in Asia which induce a deterioration in PRC's terms of trade.[22] Within ASEAN, the largest gains from ASEAN+3 FTA are likely to occur to Malaysia, Viet Nam, and Thailand though these gains fall somewhat for Malaysia and Thailand from an ASEAN+6 FTA.

Table 4: **Impact of Asian FTA Scenarios on East Asian Economies** Real Income (Equivalent Variation)						
	(2) **ASEAN+3** **FTA**	**(3)** **ASEAN+6** **FTA**	**(4)** **Asia-wide** **FTA**	**(2)** **ASEAN+3** **FTA**	**(3)** **ASEAN+6** **FTA**	**(4)** **Asia-wide** **FTA**
	In US$ Mn 2001 prices			*In % of GDP*		
Japan	10,419	16,695	16,750	0.26	0.42	0.42
PRC+Hong Kong, China	-1,638	-251	-35	-0.15	-0.02	0.00
Korea	14,271	16,111	17,030	3.49	3.94	4.16
Taipei,China	-1,328	1,905	1,969	-0.49	0.71	0.73
Indonesia	523	900	901	0.38	0.65	0.65
Malaysia	3,941	3,613	3,627	4.62	4.24	4.26

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[22] See, for instance, Fan Zhai (2006) on this point. The results for PRC might also reflect the assumptions and underlying structure of the GEMAT model. Further research using different CGE models is needed to investigate the robustness of the results for PRC.

Philippines	350	355	343	0.52	0.53	0.51
Singapore	1,240	1,386	1,538	1.52	1.70	1.89
Thailand	3,305	3,139	3,280	3.00	2.85	2.98
Viet Nam	1,016	1,189	1,218	3.27	3.82	3.91
Source: ADB Staff estimates using GEMAT						

GCGE simulation studies are useful in indicating the channels by which the formation of an FTA translates into improvements of the economy. Existing studies have focused on liberalization of import tariffs on goods trade. A major shortcoming of such studies is their inability to incorporate rules of origin and non-tariff measures (e.g. SPS and TBT) which are likely to afford more protection for domestic industries than tariffs. In addition, there are no GCGE studies on liberalization of barriers to services trade. Furthermore, in these approaches, it is unclear whether the members of an FTA ultimately realize potential effects. Thus, GCGE studies are best when used in conjunction with other empirical tools—notably analysis of the complex structure of FTAs and enterprise perception studies of the benefits of FTAs (Francois, McQueen and Wignaraja, 2005).

Figure 3: **Comparative Effects of 6 FTA Scenarios on Asia and World**

Real

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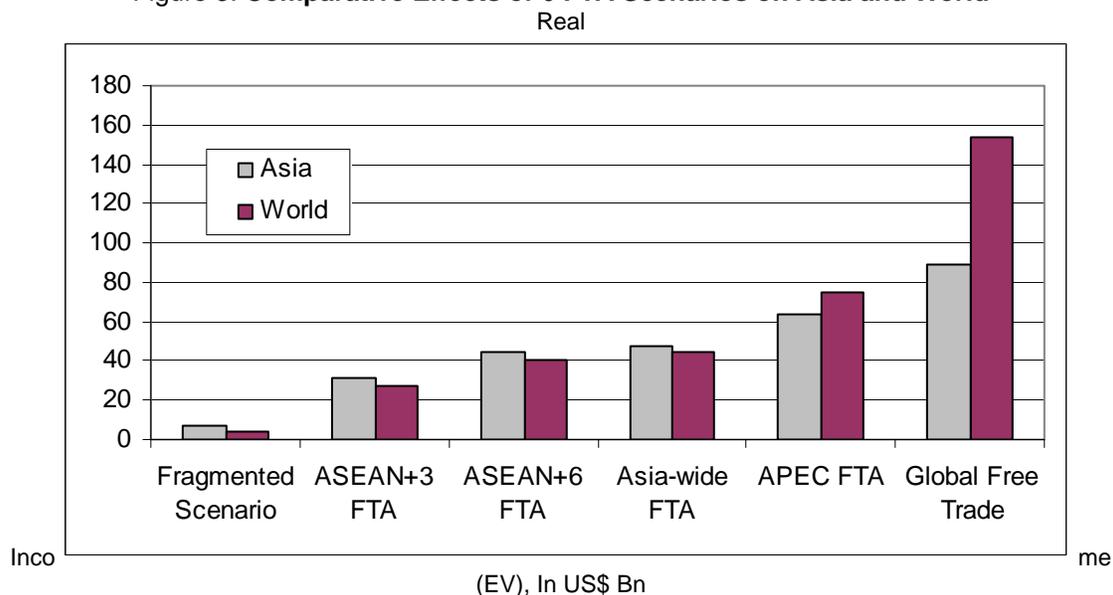
V. Concluding Remarks

In this paper, we evaluated, *inter alia*, the economic prospects of economic integration in Asia. We reviewed the current evolution of trade and financial accords in the region and surveyed the literature on the economic viability of these accords, including some fresh simulations on the correlation of business cycles and the economic effects of potential trade groupings being considered. In general, the paper suggests that the economic potential for monetary integration in Asia is strong, even though the political underpinnings of such an accord are not yet in place. On the other hand, real integration has been taking place at the bilateral, plurilateral, and regional levels; we note that the economic implications of these emerging agreements will actually reinforce the economic case for monetary union in Asia, in a similar way that real-sector integration did so in Europe. Hence, we conclude that, at present, the post-sequencing of economic integration in Asia is developing such that trade agreements, which are dominating the formal accords in Asia, will ultimately complement the movement toward financial and monetary integration, which will take a great deal more time and political will.

In addition to the structural considerations discussed above, we should note that the process of monetary union could have important implications for *policy*. Based on the EU experience, closer financial and monetary cooperation in Asia in general and in ASEAN in particular will necessitate Maastricht-type exigencies to create a more stable macroeconomic environment in the region, thereby producing significant positive policy externalities. Moreover, as monetary policy would likely be driven by the most credible country/countries, less credible countries would be able to "import

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credibility," much as, for example, Italy was able to import German monetary credibility, and interest-rate spreads would converge, making it easier to price risk at the regional level and lower the cost of capital. Our casual empiricism in Section III suggested that policy convergence might be difficult in some cases but certainly feasible.

Further, existing studies on monetary union in Europe tend to focus on macroeconomic considerations, and overlook another key economic argument: financial market development, which is a key reason why ASEAN leaders are considering monetary cooperation and integration in the first place. The creation of a common currency could go a long way in helping the ASEAN countries diversity and deepen their capital markets, as well as create new regional equity and securities markets.

In fact, it is worth recalling that the European Currency Unit (ECU) was a basket of the currencies of the member countries of the EC, weighted in line with each country's gross domestic product and foreign trade (and therefore subject to change periodically). It was introduced in 1979 as part of the EMS, to be used as the benchmark for determining the overvaulation/undervaluation of individual currencies and to serve as a unit of account among the central banks participating in the EMS. No physical ECU notes or coins ever circulated, so the ECU was strictly an artificial denomination. However, certain European banks established a banking product so that lenders and borrowers could carry out transactions in ECU. The first ECU-denominated bond was issued in 1981, just 2 years after the introduction of the currency basket. The ECU subsequently became a significant "currency" denomination in the Eurobond markets, outranked only by the US dollar and the German mark. In short, the ECU was an attractive alternative to single foreign currencies because it was less sensitive to the volatility of a single currency. The fact that the ECU existed for 20 years prior to European monetary unification suggests that the simple introduction of a currency basket serves as a useful precursor to monetary union. The literature has not ignored this experience; in fact, the ADB and other institutions have been developing various possible exchange-rate indexes for the region (see, for example, Ogawa and Shimizu 2006).

As a final point, we should note that the process of creating FTAs at various levels has an important political effect on cementing a regional "identity" and in bringing the region closer together. The proliferation of superficial FTAs in the world testifies to the political usefulness of such agreements. Indeed, it would be impossible to understand the unfolding of regionalism in Asia (or in Europe, for that matter) from a merely economic perspective: there exist strong political and strategic motivations behind this movement. Given that many see the chief problem of monetary union in Asia as being political (unlike in Europe), the "endogeneity" effect noted by Frankel and Rose (1998) could very well have its counterpart in the political realm. In this sense, the FTAs are serving as a political, as well as economic, complement, to monetary union.

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Appendix Table 1: Correlation of GDP Growth Rates of East Asian Economies: 1980 – 2005 [1]

A. 1980 - 1997

	Brunei Darussalam	Cambodia	PRC	Hong Kong, China	India	Indonesia	Japan	Korea, Rep of	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Taipei,China	Thailand	Vietnam
Brunei Darussalam	1.0															
Cambodia	0.2	1.0														
PRC	-0.1	0.4	1.0													
Hong Kong, China	-0.1	0.6260*	0.1	1.0												
India	-0.1	-0.2	-0.1	-0.2	1.0											
Indonesia	0.3	-0.5	-0.2	0.3	0.1	1.0										
Japan	-0.1	0.1	-0.4	-0.1	0.3	-0.1	1.0									
Korea, Rep of	0.1	0.4	0.1	0.1	0.3	-0.4	0.2	1.0								
Lao PDR	-0.2	-0.6715*	-0.4	-0.3	0.0	0.4	-0.2	-0.6025*	1.0							
Malaysia	0.6202*	-0.2	-0.1	-0.1	0.2	0.6049*	-0.2	-0.1	-0.1	1.0						
Myanmar	0.0	-0.4	0.0	-0.3	-0.2	0.3	-0.6934*	-0.5778*	0.7255*	0.1	1.0					
Philippines	0.2	0.1	-0.4984*	0.1	0.4	0.3	0.0	-0.1	-0.1	0.4	-0.1	1.0				
Singapore	0.5	0.2	-0.1	0.2	0.3	0.4953*	-0.1	-0.1	-0.1	0.8015*	0.0	0.5699*	1.0			
Taipei,China	-0.2	0.6258*	0.2	0.7984*	-0.1	0.1	0.0	0.4	-0.4	-0.2	-0.4	0.0	0.1	1.0		
Thailand	0.0	0.1	-0.1	0.0	0.4	0.3	0.4762*	0.4	-0.3	0.4	-0.4	0.2	0.4	0.1	1.0	
Vietnam	0.2	-0.4	0.3	-0.5405*	0.4	-0.2	-0.3	0.4	0.1	0.3	0.3	-0.1	0.0	-0.3	0.0	1.0

*Significant at 5% level.

B. 1998 - 2005

	Brunei Darussalam	Cambodia	PRC	Hong Kong, China	India	Indonesia	Japan	Korea, Rep of	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Taipei,China	Thailand	Vietnam
Brunei Darussalam	1.0															
Cambodia	0.3	1.0														
PRC	0.4	-0.4	1.0													
Hong Kong, China	0.7	0.5	0.4	1.0												
India	0.0	0.4	0.4	0.4	1.0											
Indonesia	0.9466*	0.2	0.5	0.7985*	0.1	1.0										
Japan	0.7	0.2	0.7	0.9133*	0.4	0.8066*	1.0									
Korea, Rep of	0.8267*	0.6	0.0	0.7260*	-0.1	0.8013*	0.5	1.0								
Lao PDR	0.7667*	0.7	0.2	0.7	0.5	0.7292*	0.7807*	0.5	1.0							
Malaysia	0.8131*	0.6	0.4	0.9249*	0.3	0.8738*	0.8034*	0.8829*	0.7776*	1.0						
Myanmar	0.5	0.2	-0.3	0.0	-0.6	0.3	0.0	0.4	0.0	0.3	1.0					
Philippines	0.7155*	0.3	0.6	0.9410*	0.4	0.8562*	0.8865*	0.7312*	0.7	0.9503*	0.1	1.0				
Singapore	0.4	0.6	0.2	0.8867*	0.5	0.5	0.7	0.7	0.6	0.8493*	-0.1	0.8528*	1.0			
Taipei,China	-0.2	0.5	0.1	0.4	0.5	-0.1	0.2	0.2	0.2	0.4	-0.2	0.4	0.7554*	1.0		
Thailand	0.9393*	0.4	0.5	0.7763*	0.2	0.9564*	0.7298*	0.8450*	0.7948*	0.9227*	0.3	0.8703*	0.6	0.1	1.0	
Vietnam	0.4	-0.5	0.9213*	0.4	0.1	0.6	0.7	0.0	0.1	0.3	-0.2	0.5	0.1	-0.2	0.4	1.0

*Significant at 5% level.

1/ Annual data are used in the computation.

Source: IMF World Economic Outlook Database.