

# FINANCIAL INTEGRATION IN ASEAN AND BEYOND: IMPLICATIONS FOR REGIONAL MONETARY INTEGRATION

by

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## **FINANCIAL INTEGRATION IN ASEAN AND BEYOND: IMPLICATIONS FOR REGIONAL MONETARY INTEGRATION**

### **Abstract**

This paper is broadly divided into two parts. The first part of the paper outlines the various definitions of financial integration and summarizes available empirical evidence on the extent of financial integration in ASEAN and the larger East Asian region. Even if the ASEAN/East Asian economies do strengthen financial links intraregionally, does that necessarily imply that they are any closer to creating a full-fledged monetary union? The second part of the paper therefore explores the links between financial integration, on the one hand, and monetary integration (common currency), on the other.

Key words: *ASEAN, East Asia, Financial Integration, Interest Parity, Monetary Integration, Trade Integration*

## 1. Introduction

The post-1997 period has not been very kind to Southeast Asia in general. The list of bad news that has recently hit the region has been daunting and appears never-ending. A non-comprehensive list includes:

- (a) the regional financial crisis in 1997-98 and its lingering after-effects;
- (b) the socio-political turmoil in ASEAN's largest member, Indonesia and fears of regional instability thereof;
- (c) continued recessionary environment in Japan and consequent curtailment of capital flows to the region from Japan;
- (d) intensified competition for foreign direct investment (FDI) and export markets from the emerging Asian giants, China and India<sup>1</sup>;
- (e) the sharp downturn in capacity utilization in the US (Baily, 2003) and consequent decline in external demand for ASEAN exports;
- (f) the seemingly more volatile international electronics cycle (IMF, 2001);
- (g) the concerns about regional and international terrorism; and most recently
- (h) the SARS outbreak and consequent decimation of the tourism industries, decline in business and consumer confidence, rise in health care costs and their consequent budgetary impacts, not to mention the unfortunate loss of human lives<sup>2</sup>.

All these factors have worked in tandem to generate lower and more volatile post-crisis growth rates in the more developed ASEAN members (Singapore, Malaysia, Thailand, Philippines and Indonesia), some economies being more adversely impacted than others (Figures 1 and 2).

During and immediately following the East Asian crisis of 1997-98 there were widespread concerns that ASEAN as an organization was disjointed, uncoordinated and altogether ineffective (Chang and Rajan, 1999, 2001 and Khoo, 2003). To its

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<sup>1</sup> The economic rise of China and India ought to have longer-run benefits to ASEAN, though short-term adjustment costs are inevitable (Rajan, 2003b).

<sup>2</sup> See Fam (2003) for a discussion on the impact of SARS on Asian economies.

credit, ASEAN has done remarkably well since then to rebuild its image, and is being actively courted by the larger economic powers once again. For instance, apart from the proposed ASEAN-China FTA (ACFTA), Japan, India and Korea have also sought out various types of trade pacts with ASEAN. In addition, the US President, George W. Bush, launched the Enterprise for ASEAN Initiative (EAI) during the APEC Summit in October 2002 to strengthen bilateral trade linkages with ASEAN<sup>3</sup>. A European Union (EU)-ASEAN trade pact also seems to be in the offing (Kassim, 2003). All of this in turn has offered ASEAN the potential to act as a hub with the consequent benefits of being one. In addition to this, many ASEAN members such as Thailand and Singapore are actively sourcing trade pacts with non-ASEAN members on bilateral basis (Rajan and Sen, 2002). Nonetheless, ASEAN Leaders recognize that current extraregional initiatives ought not to distract ASEAN from furthering its own regional integration; renewed efforts are needed to deepen intra-ASEAN interactions. In view of this, the recently mooted ASEAN Economic Community (AEC) initiative by Singapore's Prime Minister, Goh Chok Tong, takes on particular relevance (ISEAS, 2003).

While a number of other papers have focussed on trade integration and institutional mechanisms to further real sector economic integration in ASEAN, this chapter concentrates on the financial dimension of regional integration in ASEAN and the larger East Asia and its implications for regional monetary integration.

The roadmap of the chapter is as follows. The next two sections explore the extent of intra-East Asian financial integration. Despite several empirical studies examining various facets of the topic, the degree of intraregional financial integration

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<sup>3</sup> While details of the EAI remain unclear, the proposal essentially offers ASEAN economies the opportunity to sign bilateral trade pacts with the US provided that they are members of the WTO and that they are signatories to trade and investment facilitations agreements (TIFAs) with the US (implying that Malaysia, and the non-WTO ASEAN members, i.e. Cambodia, Lao, PDR and Vietnam remain ineligible for the time being). While the EAI is viewed as a means of eventually networking ASEAN with the US seamlessly, the initiative appears to have less to do with economics than it does with symbolism regarding the commitment of the US to the ASEAN region at a time of global security and political tensions (Lien, 2002).

in East Asia remains a matter of vigorous debate. Numerous methods have been employed to measure financial integration. We place them into three broad categories.

The first category is price conditions involving debt as well as equity flows. The former are largely embodied in the interest parity conditions, viz. the covered interest parity (CIP), the uncovered interest parity (UIP), and the real interest parity (RIP). As will be discussed, the CIP is the narrowest of measures (of capital mobility per se), the UIP being a somewhat broader measure (of financial integration), while the RIP is the broadest of arbitrage measures (incorporating both financial and real integration). Apart from the arbitrage conditions, another set of price measures involves non-debt flows like the co-movement of stock market returns. The second broad category involves quantity based measures such as savings-investment correlations, consumption correlations, current account dynamics, and gross capital flows. The third category can be broadly classified as regulatory measures (such as capital controls and prudential regulations), or institutional ones (for instance, cross-listing of equities, creation of regional capital markets, and the like). Figure 3 summarizes the various measures of financial integration.

Most empirical work in East Asia has focused on the first and third set of measures (Cavoli, Rajan and Siregar, 2003). Consequently, Section 2 details the arbitrage price measures. Section 3 considers simple measures of equity market integration. Section 4 focuses briefly on the literature on regulatory measures. Due to space constraints, we do not discuss institutional measures. In any event, these measures have been discussed in detail elsewhere (for instance, see Michael Plummer's chapter in this volume and references cited within).

To preview the main conclusion, given definitional and data limitations, unsurprisingly, one would be hard-pressed to make any unambiguous conclusion about the extent of intraregional financial integration. But even if one were able to do

so, what are the implications of closer financial integration for monetary integration<sup>4</sup>? The penultimate section explores this rather under-researched area. The final section offers a summary and brief concluding remarks on the issue of monetary integration in ASEAN and the larger East Asian region<sup>5</sup>.

A caveat is in order before proceeding. As the reader will no doubt have noticed, the focus of this chapter is on *East Asia* rather than *ASEAN* as most recent empirical analysis on financial integration takes a broader view of the region. More importantly, from a policy perspective there is a growing acceptance (certainly by the higher income ASEAN members) that for the purposes of integrationist initiatives, ASEAN Plus Three or APT (China, Japan, Korea) or something even broader is the appropriate regional grouping, not ASEAN per se (Soesastro, 2001)<sup>6</sup>.

## 2. Arbitrage Measures of Financial Integration

Price based measures of financial integration or arbitrage conditions seek to equate rates of returns of comparable assets across different markets/economies. In this section we examine three common interest parity conditions, viz. CIP, UIP and RIP<sup>7</sup>.

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<sup>4</sup> We use the terms currency union, common currency, monetary union and monetary integration interchangeably in this paper.

<sup>5</sup> The ASEAN Finance Ministers meeting in March 19-20, 1999 endorsed a plan for a Task Force to be established to study the feasibility of establishing an ASEAN common currency.

<sup>6</sup> There have been recent suggestions that while the APT is a useful starting point but it ought to be expanded to include Hong Kong, Taiwan, as well as India, which is a full dialogue partner and is one of the world's fastest growing economies. Another prominent suggestion is to extend effective membership to Australia and New Zealand (ISEAS, 2003, Appendix 1).

<sup>7</sup> Another arbitrage condition is the closed interest parity condition which essentially states that the returns on identical instruments of the same currency but traded in different markets (such as onshore and offshore markets) should be equalized. Any deviation arising from this condition can be interpreted as possible evidence of the existence of capital controls in one of the two countries or the existence of other political or country risks that may prevent interest rate equalization. The measurement of the closed interest differential is difficult for developing economies as it requires that a particular asset is traded sufficiently for there to be a liquid offshore market for it (see Frankel and Okwongu, 1996).

## 2.1 The Covered Interest Parity (CIP) Condition<sup>8</sup>

The CIP may be formally stated as follows:

$$i_t = i_t^* + f_{t,t+n} - e_t \quad (1)$$

where:  $i_t$  is the domestic interest rate,  $i_t^*$  is the foreign interest rate (US rate unless otherwise stated) and  $f_{t,t+n}$  is the forward rate for  $n$  periods into the future and  $e_t$  is the spot exchange rate<sup>9</sup>.

The CIP indicates that the difference between the current spot rate and the forward rate will equal the interest differential between similar assets measured in local currencies. Therefore, in the absence of capital account restrictions and/or transactions costs, the covered interest differential (CID) ought not to differ significantly from zero. A negative differential suggests the existence of capital controls or transactions costs that restrict capital *outflows*. Investors would certainly not tolerate a lower domestic return in the absence of capital controls (Frankel, 1991).

While there have been a number of studies on the CIP involving industrial economies, there have been relatively fewer ones pertaining to developing economies. This is primarily attributable to the fact that many developing economies do not have sufficiently liquid forward foreign exchange markets, or if they do exist, the data on forward rates are not easily available.

One of the most recent studies on CIP is by de Brouwer (1999) who estimates the following:

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<sup>8</sup> Despite its wide-spread application in the literature, strong objections have been raised against the use of the CIP as a measure of financial integration. See Willett, Keil and Ahn (2002) and sub-section 2.4

<sup>9</sup> Throughout this paper, the exchange rate is quoted as the domestic price of foreign currency.

$$f_{t,t+n} = \alpha + \beta(i_t - i_t^*) + \varepsilon_t \quad (2)$$

where the null for the CIP is  $\alpha = 0, \beta = 1$ . The de Brouwer results, which are based on 3-month assets between 1985 and 1994, are shown in Table 1.

With the exception of Taiwan, the CIP in the strict sense is rejected due to the non-zero constant<sup>10</sup>. However, focusing on the slope coefficient, Japan appears to be the country that comes closest to the CIP holding, as they do in the cases of Hong Kong and Singapore. Taiwan and Thailand have maintained restrictions on their capital account transactions. Yet there does not appear to be any obvious pattern emerging as a result - Taiwan seems to strongly deviate from the CIP whilst Thailand has a significant constant term but the slope coefficient is close to unity.

## 2.2 The Uncovered Interest Parity (UIP) Condition

The UIP may be represented as follows:

$$i_t = i_t^* + \Delta e_{t,t+n}^e \quad (3)$$

where:  $\Delta e_{t,t+n}^e$  is the expected exchange rate change in time t+n.

The nexus between the UIP and the CIP is apparent by decomposing eq. (3) as follows:

$$i_t - i_t^* - \Delta e_{t,t+n}^e = [i_t - i_t^* - (f_{t,t+n} - e_t)] + (f_{t,t+n} - e_{t,t+n}^e) \quad (4)$$

where the first bracketed term on the right hand side is the CIP (sometimes referred to as country or political risk premium) and the second term is the currency risk

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<sup>10</sup> The non-zero constant may be due to the presence of non-zero risk premia (country or currency).

premium. If the CIP holds but the UIP is rejected, this would imply that forward rates are biased predictors of future exchange rates.

Before formally testing eq. (3), the researcher needs to find a way of measuring the expectation of the future exchange rate. One way to make the leap from theory to empirical operationalization is by using *ex-post* differentials. This may be justified by assuming that Rational Expectations (RE) holds. This assumption - that the actual or *ex-post* spot exchange rate equals the expected spot exchange plus an uncorrelated error term - is a practical way of overcoming the problem of non-observable expected exchange rate changes. Another approach is to use surveys of exchange rate expectations of market agents.

In his study, de Brouwer (1999) estimates the following equation assuming RE:

$$\Delta e_{t,t+n}^e = \alpha + \beta(i_t - i_t^*) + \varepsilon_t \quad (5)$$

where the null hypothesis for the UIP is  $\alpha = 0$  and  $\beta = 1$ . The results are presented in Table 2.

When testing for the null of  $\beta = 1$ , the results are mixed. Curiously, the economies that would typically be regarded as having open capital accounts are the ones that largely reject parity, while those that are regarded as being quite closed have coefficient values that do not reject the UIP. This may be partially explained by the observing that those economies perceived as closed are also the ones with managed exchange rates. Managed exchange rates are easier to predict than their floating counterparts, their expected depreciations being relatively easier to measure (de Brouwer, 1999). The author also computed the uncovered interest differentials (UID) which are defined as follows:

$$UID_t = i_t - i_t^* - \Delta e_{t+n}^e \quad (6)$$

If  $UID > 0$ , the expected rate of return on home assets is higher than foreign assets, resulting in capital inflows into the home country. Similarly, outflows take place if  $UID < 0$ .

As expected, the UIDs of Hong Kong and Singapore are close to zero. The estimated UIDs show significant deviations for Indonesia, Korea, the Philippines, Taiwan and Thailand. This coincides with the existence of certain restrictions on the capital account for each of these economies.

Flood and Rose (2002) test for the UIP using daily, weekly and monthly Bank for International Settlements (BIS) exchange rate and Eurorate data for the 1990s. The regression equation estimated is similar to eq. 5 above. The results are more encouraging in that the estimated  $\beta$  is the correct sign for most of the economies in the sample. Even more encouraging results are obtained when pooling the data, and the results are better for daily data than weekly, monthly or quarterly. Results for East Asia are summarized in Table 3. While the results for Japan appear rather dubious, comparison of Tables 2 and 3 reveals that the extent of openness in Indonesia and Thailand has increased over the latter half of the 1990s. This may however be an artifact of the currency crisis in 1997-98, an issue to be explored in more detail in the latter part of the chapter.

Cavoli, Rajan and Siregar (2003) computed the UIDs for commercial deposit rates offered by domestic banks of each relevant economy for three separate sub-periods: (a) the pre-crisis (January 1995 - December 1996); (b) the crisis period and immediate post-crisis period (January 1998 - December 1999); and (c) the period the monthly interest rate observations into three of relative stability (January 2000 - November 2002).

The UIDs are the actual *ex-post* interest rate differentials received by the investors at the end of the 6-month maturity period. The UIDs are reported in Table 4. The results reveal the existence of arbitrage opportunities throughout the three different periods among the East Asian economies. Furthermore, the results suggest that the markets became more segmented during the crisis period (1998) and the period immediately following that (period 2). The continued high degree of foreign exchange volatility may have contributed to the rise in the UIDs during this period. In contrast, the picture for the period of relative calm (2000-2002) suggests the intensification of market integration among these economies during the period 3. Only Thailand experienced widening absolute UIDs (see Bird and Rajan, 2001 and Rajan, et al., 2003 for elaborations of this issue).

For the five ASEAN economies, Indonesia is the only country which offered substantial and persistent positive interest rate spreads over other regional economies. It is possible that the positive UIDs offered on the rupiah are partly a reflection of the “peso problem”, i.e. a small probability of a large rupiah devaluation as well as high country or currency risk premia.

Malaysia maintained a positive UID with all economies save Indonesia only during period 3. This is probably explained by the strength of the ringgit vis-à-vis respect to most other East Asian currencies. Thailand generally maintained positive UIDs in periods 1 and 2 against most economies except Indonesia and Korea (in period 2). Note that Singapore’s commercial banks largely maintained the lowest returns on their deposit rates. The low inflationary environment, relatively stable currency and overall macroeconomic climate, are all contributory factors. With regard to the North Asian economies (China, Korea, Hong Kong), the UIDs are again at the highest during period 2 at the height of the financial crisis. The high interest rate policy adopted in Korea created significant spreads against all other economies except Indonesia. In contrast, Hong Kong and China had negative spreads against all economies save Singapore. Contrasting trends appear during the last two periods

(periods 2 and 3). A combination of a weaker won (especially against other crisis-affected currencies) and sharply lower key interest rates in Korea led to its UIDs turning positive against Singapore, Thailand and the Philippines in period 3. In contrast, the lowering of interest rates in many ASEAN economies post-crisis, and the recovery of these currencies vis-à-vis the US dollar (and thus the Hong Kong dollar and Chinese renminbi, both of which are firmly pegged to the US dollar), were responsible for creating positive UIDs in period 3.

### 2.3 The Real Interest Parity (RIP) Condition

The third arbitrage condition is the RIP which is derived by using the following UIP equation:

$$\Delta e_{t,t+n}^e = i_t - i_t^* \quad (7)$$

and substituting it into an expression for relative purchasing power parity (PPP):

$$e_t = p_t - p_t^* \text{ or } \Delta e_{t,t+n}^e = \pi_{t,t+n}^e - \pi_{t,t+n}^{e*} \quad (8)$$

Combining the two with the Fisher equation,  $r_t = i_t - \pi_{t,t+n}^e$  yields the expression for the RIP:

$$r_t = r_t^* \quad (9)$$

Clearly for the RIP to hold, the UIP, PPP and the Fisher hypothesis also need to simultaneously hold. This is no easy task given the lack of empirical success of both the UIP and PPP over the short to medium terms. Thus, the RIP is generally

considered a very long-run interest parity condition encompassing both real and financial linkages<sup>11</sup>.

There have not been many studies on estimated RIPs for the East Asian economies. de Brouwer (1999) provides differentials for the RIP and also sub-divided the estimated RIPs into its constituent parts, i.e. the UIP and PPP (Table 5). The results reveal Japan, Malaysia and Taiwan have non-divergent real rates against US dollar rates, whilst the other East Asian economies tested have a lower likelihood of the RIP holding. In general, the RIP does not hold due to lack of empirical success of the UIP and relative PPP.

#### **2.4 Summary of Arbitrage Measures**

The most popular methodology for determining the extent of financial integration is the UIP which was emphasized above. Indeed, as Flood and Rose (2002) have noted, “the UIP is a classic topic of international finance, a critical building block of most theoretical models..” (p.252). However, it is important to keep a number of caveats in mind when interpreting the findings. One, the test for the UIP is in fact a joint test for the CIP and the currency risk premium. Two, the tests for the UIP usually assume that all agents form expectations rationally. Thus, the failure of the UIP to hold (in the sense that there exists large and persistent UIDs) could be because (a) the Covered Interest Parity (CIP) does not hold (imperfect capital mobility); (b) there may be large and time varying currency risk premia (imperfect asset substitutability); or (c) rational expectations (RE) is an inappropriate assumption for the foreign exchange (forex) markets (or that the financial market consists of heterogeneous agents)<sup>12</sup>.

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<sup>11</sup> The RIP may be thought of as a proxy for the marginal cost of capital.

<sup>12</sup> McCallum (1994) also believes that deviations from the UIP may be due to monetary policy decisions of central banks and proposes that a monetary policy reaction function be included in an expression for the UID. Bird and Rajan (2001) and Rajan, Siregar and Sugema (2002)

While the CIP is a generally preferred measure of financial integration in view of the preceding limitations of operationalizing the UIP (Frankel, 1991), as noted, there needs to be a liquid forward foreign exchange market in the currency pair under investigation. Whilst this is not problematic for industrialized economies, it is definitely a niggling problem for developing economies. In any case, Willett, Keil and Ahn (2002) observe:

(S)ubstantial deviations from covered interest parity are a good indication that capital mobility is less than perfect..(However)..(f)inding that covered interest parity holds..is consistent with either high or low capital mobility, and there is no good reason to presume that the magnitudes of deviations from interest parity will provide a reasonable proxy for the degree of international capital mobility. In terms of modern theory, the appropriate measure of capital mobility is the extent to which uncovered rather than covered interest parity holds (pp.424-5).

With regard to the third price measure of financial integration, the RIP, the conditions for it to hold are quite prohibitive, as both the PPP and the UIP need to simultaneously hold. However, RIP provides a useful general condition encapsulating both trade and financial linkages, and thus should not be dismissed as being altogether irrelevant. The RIP is more likely to hold over longer time horizons and acts as a useful proxy for the marginal cost of capital<sup>13</sup>.

### **3. Non-debt Price Measures: Stock Market Co-movements**

Financing involving non-bank and non-debt channels has grown in importance in developing economies. Thus, another measure of integration of regional capital markets would invariably involve examining the nexus between regional equity market returns. There have been any number of studies examining the extent of equity market integration in East Asia. In the main, these papers look at the univariate properties of the data and how movements in the equity markets in one

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offer bank-based explanations for persistent interest rate differentials in East Asia. Also see Edwards and Khan (1985) and Willett, Keil and Ahn (2002).

<sup>13</sup> In fact, the UIP may also be more valid over longer time horizons -- over one year (see Madarassy and Chinn, 2002 and Meredith and Chinn, 1999).

country influence the series in another country. In general, the methodological applications range from simple correlations and co-variances to VAR based approaches such as Granger causality for the short-run analysis and co-integration tests for the long-run scenario<sup>14</sup>.

Cavoli, Rajan and Siregar (2003) is a recent paper on the issue. They measure equity returns as the difference of the log of stock exchange index returns  $[\ln(sxi_t) - \ln(sxi_{t-1})]$ . To ensure the consistency of the results, all the index returns are in US dollars. They divide the observation sets into three sub-periods: (a) the pre-1997 crisis period (January 1, 1995 to December 31, 1996); (b) the height of the crisis period (January 1, 1998 to December 31, 1998); and (c) the post-crisis period (January 1, 2000 to July 1, 2001). Before considering the Granger-Causality test results, the authors first consider some simple correlation test statistics reported in the paper (Tables 6 - 8)<sup>15</sup>.

During the pre-crisis there was a limited degree of integration among the returns of the stock exchange markets in ASEAN, reflected by correlation statistics ranging from around 30 percent for Thailand to 48 percent for Singapore (Table 7). The correlation test statistics confirm a limited extent of integration of the ASEAN markets with the Hong Kong market, but a surprising lack of integration with the US Dow Jones<sup>16</sup>. As for the Korean Stock Exchange Composite Index (KOSPI) during the pre-crisis, the correlation statistics suggest that the returns of the Korean market were largely segmented from the performances of the ASEAN capital markets, the Hong Kong Hang Seng Index and the US Dow Jones index. Similar results are

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<sup>14</sup> Also see Park and Bae (2002) who use a series of common statistical tests to examine East Asian financial integration. The use of asset pricing models has also become an increasingly popular technique to examine the degree of stock market integration (for instance, see Bekaert and Harvey, 1995 and Phylaktis and Ravazzolo, 2002).

<sup>15</sup> Dungey and Zhumabekova (2001) and Forbes and Rigobon (1998) offer important reminders about the shortcomings of correlation analysis, particularly for crisis periods.

<sup>16</sup> The East Asian equity markets may be more closely correlated with the technology-heavy NASDAQ index. However, Amato and Tsatsaronis (2001) cast doubt on this thesis.

discernable for the post-crisis period (Table 8). The correlation statistics of the ASEAN markets were in fact moderately lower than the pre-crisis period. The returns on the KOSPI during the post-crisis period were substantially more correlated with the rest of the markets included in the test than during the pre-crisis period. However, the returns of the US Dow Jones continued to experience very low correlations with the East Asian markets.

All the crisis-affected economies as well as Singapore and Hong Kong, appear to have become significantly more correlated with each other during the height of the crisis (Table 7)<sup>17</sup>.

The positive correlation statistics for the Philippines, Thailand and Singapore are well above 50 percent. Interestingly, the Indonesian correlation statistics hovered at about the same rate as during the pre-crisis period. Among the ASEAN economies, Singapore and Thailand show the highest degree of correlation. The returns of the KOSPI experience the most significant increases in correlation statistics with the ASEAN markets.

Tables 9 to 11 report the Granger-causality tests. For the sake of brevity we only report the significant test results. Apart from the regional economies, the role of the US Dow Jones index in influencing the performance of the East Asian markets was also examined.

Results indicate that a relatively high degree of integration among the ASEAN equity markets had already been established pre 1997 (Table 9). The returns in each of the ASEAN markets influenced the returns of at least two other neighbouring capital markets. The returns in the Indonesian stock exchange are significantly influenced by the performances of the rest of the ASEAN markets, except Malaysia. Furthermore, the fluctuations in the composite Dow Jones index strongly influenced the ASEAN markets during the pre-1997 crisis period. These findings are broadly consistent with that of Calvo, Leiderman and Reinhart (1996) who stress the roles of

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<sup>17</sup> This directly contradicts the conclusion based on UIDs.

global leaders in the world capital markets. In contrast, there was no evidence of Granger-causality between the ASEAN markets and Korean capital markets pre-crisis.

With regard to the second period (1998), the results indicate a closer link among the stock market returns of the crisis-affected economies (Table 10). In particular, the KOSPI was influenced by the returns in the ASEAN capital markets (except the Philippines), while reciprocally, the returns on the KOSPI significantly Granger-caused the returns of two markets in ASEAN (Philippines and Thailand) and Hong Kong.

Not surprisingly, the test results reveal the two worst crisis-affected stock exchanges, Indonesia and Thailand, had the most widespread negative spillover effects at the peak of the 1997 crisis. In contrast, the performance of the Jakarta Stock Exchange was influenced only by the performance of the US Dow Jones, while the returns on the Thai stock exchange were significantly influenced by the performances of the Jakarta Stock Exchange, the KOSPI and the US Dow Jones. The Singapore stock exchange had limited impact on the region, only significantly Granger-causing two markets - Korea and the Philippines. The returns of the ASEAN markets (Indonesia, Philippines and Thailand) significantly determined the performance of the Singapore stock exchange. Due to the adoption of the comprehensive foreign exchange and capital controls in Malaysia during late 1998 (Rajan, et al., 2003), the Kuala Lumpur Stock Exchange (KLSE) is excluded from the testing for the crisis and the post-crisis periods. As for the Dow Jones, the Granger-causality test statistics indicate that the performance of this key global market remains the most important market for the rest of East Asia<sup>18</sup>. The Hong Kong Hang Seng Index only Granger-caused the Korean and the Philippines markets.

Consistent with the correlation test statistics, the results for the post-crisis period (2000-2001) reveal a pointed fall in the degree of regional equity market

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<sup>18</sup> This contradicts the results of the correlation tests.

integration (Table 11). The returns on the Jakarta and the Philippines Exchanges had no significant influence on any other regional market. As for Korea, Singapore and Thailand, the performances of these markets are only found to have significant effects on the stock markets in Indonesia and the Philippines. With regard to the previous sub-periods, the Dow Jones continues to be an important player. This is consistent with the findings of Park and Bae (2002) who further conclude that developing East Asian stock markets appear to be more integrated with the US market than with Japan (p.19).

#### **4. Other Measures of Financial Integration**

Whichever arbitrage measure of financial integration is considered, there are two important points to note. One, arbitrage conditions are probably a more appropriate way of measuring integration for certain sectors (e.g. the banking sector) rather than the whole economy (Chinn and Dooley, 1995). Two, a perennial problem with using such price measures, especially in developing economies, is what interest rate should be used, and to what extent are the available interest rates comparable across countries. Given these concerns, there is a growing body of literature that has explored quantity based measures of financial integration such as savings-investment correlations and consumption correlations. There is limited empirical evidence on East Asia using such quantity measures. In any event, as with RIP, the quantity based measures are probably more relevant over the much longer run and are more all-encompassing measures of integration (i.e. financial-cum-real sector integration). Consequently, referring to Figure 3, in the remainder of this section we concentrate on other regulatory measures of financial integration as well as the extent of equity market integration<sup>19</sup>.

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<sup>19</sup> As noted in the Introduction, institutional measures are not taken up here.

#### 4.1 Regulatory Measures: Capital Controls

Capital controls are often placed under the category of financial *liberalization* - rather than *integration* - but their connection to financial integration is straightforward. Financial liberalization is basically the process that policymakers engage in attempting to achieve greater financial integration. We can measure the degree of financial integration by observing the extent to which a country has capital controls and we can assess whether a country is becoming more or less integrated by observing whether controls are being imposed or removed over time.

The types of controls that might be in place are numerous (for instance, see Bird and Rajan, 2000 and Rajan, et al., 2003). Park and Bae (2002) specify three general categories that might be imposed: (a) those that relate to financial market regulations such as legislative control over deposit rates; (b) restrictions on capital account transactions such as restrictions on term or currency; and (c) regulations relating to the entry and exit of foreign financial services (also see Bird and Rajan, 2001).

How are these restrictions used to measure the extent of financial integration?

A well cited paper is that of Grilli and Milesi-Ferretti (1995) who use the restrictions captured by the *IMF Annual Report on Exchange Arrangements and Exchange Restrictions* as dummy variables to measure their effect on variables such as capital flows. Johnston et al. (1999) does a similar thing using further disaggregated data (forty four categories of capital account transactions) Table 12 reports the results for the Asian sample using the Johnston et al. index. It reveals a marked reduction in capital controls in Korea and an increase in the extent of controls in Malaysia. These observations are consistent with the general observation of policy choices of the two economies in the latter half of the 1990s (see Rajan, et al., 2003 for Malaysia and Park and Choi, 2002 for Korea). The index also indicates a

generally stable though gradual declining trend in capital account barriers in the cases of Indonesia and Thailand.

Elson (2002) computes the extent of capital controls on 11 categories of capital account restrictions between 1995 and 2001 based on IMF data. As Table 13 reveals, Hong Kong, Singapore and Japan are the least restricted while China and India are the most restricted. There is little alteration in the extent of capital account restrictiveness in Indonesia and Korea, but Malaysia and Thailand appear to have become more restricted. The IMF summary descriptions on capital account restrictions are highly aggregative and insufficiently informative. For instance, Korea has taken a number of steps post-crisis to relax prohibitions on foreign investments in domestic share markets. This is apparent from Table 14 which reveals the proportion of the market which is accessible to investors based on data from the Standard & Poor's/International Finance Corporation (S&P/IFC)<sup>20</sup>. Indonesia too appears to have lifted a number of restrictions on foreign investments since 1996, as has Thailand, though the latter remains highly restrictive. The level of restrictions on foreign participation in the Philippines has remained constant and is comparable to Thailand. China and India remain the most restricted, though there is a discernible trend towards a more liberal environment, especially in the former which had been extremely tightly controlled until the mid 1990s.

A fundamental assumption with all such indices of capital controls is that the removal of capital controls may, in some way, result in a more financially integrated economy. This may not be the case. There could well exist a situation where a

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<sup>20</sup> Edison and Warnock (2001) use this data to construct a univariate quantitative measure of the degree of capital controls in developing economies. For their sample of Asian economies (the data used is of monthly frequency from 1988 to 2000), Edison and Warnock find that the initial restrictions were generally "quite high" but decreased markedly during the 1990s. The exceptions were the Philippines whose level of controls remained fairly constant over the time period under consideration, and Malaysia which appeared to have very few restrictions to begin with, but increased them significantly in the aftermath of the crisis as noted previously. The authors also compare their measure with some of the other techniques for measuring capital controls and find broad concurrence in the results. For a more complete comparison of various capital control measures, see Nitithanprapas, Rongala and Willett (2002).

country has very few capital controls and is yet not regarded as being integrated with other economies. This could be due to legal/political factors, cultural variables, business practices or simply that an economy has not been noticed by others as a potential place to export capital flow, i.e. it “escaped the radar” of the international financial community.

#### **5. Sequencing of Economic Integration: Financial Integration versus Monetary Integration**

The preceding section suggests there is no obvious indication of intensified financial market integration in the region on the whole. The three East Asian financial centers, and high-income economies of Hong Kong, Japan and Singapore are quite highly integrated with global capital markets. The recent pace of liberalization in Korea post-crisis is also intensifying the country’s extent of international financial integration. The lower middle-income ASEAN economies, Thailand and Indonesia as well as the Philippines are relatively less financially integrated, though evidence suggests a gradual movement towards enhanced integration. The evidence on Malaysia is somewhat mixed. While not tested here due to data limitations, it is expected that the other smaller ASEAN economies in ASEAN (Brunei, Cambodia, Lao, PDR, Myanmar and Vietnam) are relatively segmented from regional and international capital markets, particularly in view of the heterogeneity of their financial structures vis-à-vis their more developed counterparts.

As these countries and their neighbours continue with their ongoing liberalization efforts, one would expect their effective degree of financial integration to intensify. Nonetheless, it is unclear whether this necessarily implies that there will be relatively greater degree of intraregional integration. It is quite likely that the East Asian economies will get more closely integrated to international financial centers (US, UK) rather than with regional ones (Elson, 2002 and Park and Bae, 2002). In view of this, some observers have pointed out that there is not necessarily a direct

link between financial liberalization which may lead to more internationally integrated economies, on the one hand, and regional monetary integration, on the other. For instance, Park and Bae (2002) conclude:

(T)he growing dominance of western financial institutions and advances in financial globalization would diversify and deepen the region's ties with global financial markets...(F)inancial liberalization leaves uncertain as to whether it will generate incentives to market pressure for the East Asian countries to join and remain in a regional common currency area (p.34).

In contrast to this conclusion, McCauley et al. (2002) argue that when one considers the international bond and international syndicated loan market:

East Asia's finances are more integrated than is often appreciated. While firms headquartered outside the region figured prominently in the roles of book runners and loan arrangers, regional funds and banks are very well represented among the underlying investors, in the case of bonds, and among syndicate members, in the case of loans (p.83).

But even assuming that financial liberalization does lead to greater regional financial integration, what does this imply for prospects for or viability of a regional common currency?

The economic case for or against monetary integration inevitably tends to be based on the optimum currency area (OCA) criteria which are conceived in terms of weighing the microeconomic benefits of a common currency (i.e. lower transactions costs, ability to economize on reserve holdings, reduction in regional price discrimination and elimination of other costs of interregional exchange rate uncertainty), against the costs of forsaking exchange rate adjustments as a policy instrument and loss of monetary policy autonomy (Mundell, 1961).

So if a region does succeed in becoming more closely financially integrated, does it suggest that they are any closer to satisfying the conditions for being an OCA, therefore making a common currency more economically feasible? The answer to this question is not clear-cut. Indeed, the conventional OCA literature is rather unclear on the issue of financial integration (for instance, see Willett, 2001).

One, at a basic level, financial integration implies an enhanced degree of capital mobility and a consequent loss of monetary policy autonomy. This being the case, the next step to creating a common regional currency may not be very costly and could offer participants a number of microeconomic benefits. Indeed, forsaking monetary policy autonomy may be least costly -- and offer greatest net benefits -- to small and open emerging economies in view of the ongoing concerns about the general effectiveness of exchange rate adjustments as a demand management policy instrument in such economies which tend to be characterized by high pass through (McKinnon, 1963) and unhedged foreign currency debt (Frankel et al., 2000a, Hausmann et al., 2000 and McKinnon and Schnabl, 2003)<sup>21</sup>.

Two, as pointed out early on by Mundell (1973), agents in countries with open capital accounts are able to adjust their portfolio wealth holdings in response to country-specific shocks (by borrowing or lending/investing abroad) or can cushion themselves from idiosyncratic shocks by drawing on income on foreign asset holdings (rentals, dividends etc). To the extent that this portfolio adjustment or income insurance mechanism reduces the need for exchange rate adjustments in the event of asymmetric shocks (i.e. a shock that affects members of a union disproportionately), financial integration could help the region go some way toward satisfying the OCA criteria (also see Ingram, 1962 and Kalemli-Ozcan, Sorensen and Yosha, 2003)<sup>22</sup>.

Three, a greater degree of financial integration implies that the regional economies are more likely to be similarly impacted by common external/symmetric shocks. For instance, it is generally accepted that currency crises often tend to have

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<sup>21</sup> As Pomfret (2002) notes, OCA literature implicitly assumes a “background of optimum monetary policy” (p.17). Buiter (2000) refers to the “fine tuning fallacy” behind OCA theory (p.49).

<sup>22</sup> For a recent attempt at formalizing this insight, see Ching and Devereux (2000). Absent the risk sharing mechanism and insufficient intraregional mobility of other factors, a union requires compensatory intraregional fiscal transfers to buffer against asymmetric shocks.

a regional dimension (for instance, see De Gregario and Valdes, 2001 and Krueger, Osakwe and Page, 2000) which in turn are largely - though not solely - attributable to financial linkages (either *ex-ante* or *ex-post*) (see Rajan, 2003c and references cited within).

Four, intensified financial integration may facilitate real sector integration. For instance, it is generally recognized that cross-border trade financing is a crucial determinant of trade flows. Similarly, FDI flows require complementary project financing. -- As a rule of thumb, in the case of emerging economies in Asia, equity financing tends to constitute about a quarter of total project cost, the remainder being financed by lending (usually bank lending but increasingly via the bond markets). -- The more financially integrated a region the more likely that some sort of trade and investment financing is available, thus ensuring real sector integration can take place unhindered<sup>23</sup>. But does closer trade integration imply that a region is closer or farther away from being an OCA?

On the one hand, greater trade integration leads to a convergence in aggregate demand patterns in the trade partners, making them more likely to share common business cycles, making unilateral exchange rate adjustments relatively ineffective as an expenditure switching tool (Frankel and Rose, 1998). On the other hand, if intraregional trade is dominated by industrial specialization and inter-industry trade, or intra-industry trade involving vertical specialization (Rajan, 2003b), the countries' production structures may actually become more dissimilar and thus more vulnerable to asymmetric supply shocks<sup>24</sup>. This in turn could weaken the case for

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<sup>23</sup> Conversely, bilateral trade flows appear to be an important determinant of cross-country financial linkages (Forbes and Chinn, 2003). In addition, trade agreements nowadays encourage financial trade liberalization, thus facilitating integration of capital markets (Rajan and Sen, 2002). On the other hand, while higher integration lowers transactions costs, thus promoting greater intraregional investment, insofar as it leads to synchronized business cycles and rates of return, there may be a case for increased diversification across sectors or regions.

<sup>24</sup> Jimbs (2003) confirms the direct impact of patterns of specialization on business cycle correlations.

monetary integration since independent monetary tools or a flexible exchange rate may be needed to compensate for asymmetrical shocks (Krugman, 1993 and Eichengreen, 1992). It is therefore an empirical issue as to which of these effects will dominate.

There is a growing body of literature which suggests that the tendency towards specialization in production could be fortified as financial integration permits the diversification or sharing of risks internationally (i.e. insurance via financial markets), hence allowing firms to locate production in one country and benefit from scale economies (or market size effects and linkages), thick labour markets and pure external economies (Kalemi-Ozkan, Sorensen and Yosha, 2001, 2003)<sup>25</sup>. This consequent lower degree of industrial diversification in turn makes countries more susceptible to idiosyncratic -- i.e. sector-specific -- shocks and therefore less likely to satisfy OCA criteria (Kenen, 1969)<sup>26</sup>. This suggests that even while financial integration may exacerbate supply side asymmetries between members, synchronization of business cycles may not be a pre-requisite for sharing a common currency if agents could insure themselves in international financial markets. Indeed, from the perspective of international risk sharing it would be preferable if member economies' financial market returns were not synchronized. Thus, there is a case for ensuring the common currency area includes as wide an area as possible (Mundell, 1973).

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<sup>25</sup> While there is a growing body of business cycle literature examining this nexus, it is curious that trade patterns and production structures are considered in high-frequency business cycle theories and empirics despite the fact that they presumably change only gradually over time. There is a burgeoning body of literature examining the extent of correlation of business cycles or similarity of shocks (*a la* Blanchard and Quah, 1989) in Asia. We do not examine this literature here, only noting that there has not yet been a systematic attempt to examine whether these business cycle correlations have been due to closer financial or trade integration in Asia.

<sup>26</sup> This phenomenon of "firm-congestion" or bunching together spatially may in turn exacerbate intraregional income inequities at least in the short run. The rationale for firms not specializing geographically in the first instance may have been because of trade barriers or inability to obtain necessary trade financing absent physical presence abroad.

Overall, it is far from clear whether financial integration makes a common regional currency more feasible. Indeed, by reducing transactions and information costs, a single currency may facilitate trade and financial flows amongst partners in a regional financial arrangement. There is a large and growing body of evidence based on gravity models using both cross-sectional and time series data that suggests a common currency stimulates trade<sup>27</sup>. Similarly, and less controversially, it is generally recognized that elimination of costs that invariably exist with segmented domestic financial markets, as well as convergence in macro policies and micro-prudential statutes and regulations, will deepen and broaden regional financial markets and lessen the degree of intraregional financial segmentation<sup>28</sup>. Proponents of European integration used such an argument extensively to justify the region's Economic and Monetary Union (Emerson et al., 1992) and seem to have proved correct at least in the case of the financial markets (Danthine, Giavazzi and von Thadden, 2000). In other words, OCA criteria may be endogenous, i.e. the structure of the economy is endogenous to economic policy<sup>29</sup>.

## 6. Summary and Concluding Remarks

While the regional economies are taking noteworthy steps to strengthen, upgrade and integrate their financial systems, the contagious nature of the 1997-98 crisis has led many observers and policy makers to the view that there are positive externalities from cooperating to develop regional financial markets. While there have been a number of recent proposals and initiatives to enhance regional financial

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<sup>27</sup> Rose and Engel (2002) argue that a common currency area significantly increases international business cycle correlations. Frankel and Rose (2001), Glick and Rose (2002) and Rose (2000) estimate gravity models using both cross-sectional and time series data and conclude that a common currency is especially trade stimulating. Corsetti and Pesenti (2002) formalize the theory behind this catalyzing role of monetary unions and the possibility of OCA criteria being satisfied *ex-post* even if they fail *ex-ante*.

<sup>28</sup> Imbs (2003) finds that countries that are more financially integrated also tend to be more synchronized, *ceteris paribus*.

<sup>29</sup> This is a logical application of the "Lucas Critique".

cooperation, many pertain to the development of regional bond markets. The latest manifestation of this has been the announcement on June 2, 2003 of the establishment of the Asian Bond Fund (ABF) by eleven East Asian and Pacific economies which essentially involves the regional governments voluntarily contributing about 1 per cent each of their reserves to a fund dedicated to purchasing regional sovereign and semi-sovereign bonds denominated in US dollars (Rajan, 2003a)<sup>30</sup>. Another proposal that is running in parallel with the ABF initiative involves the creation of an Asian Bond Corporation (ABC) which would purchase regional sovereign bonds denominated in domestic currencies, while simultaneously creating and issuing "Asian currency bonds" which are denominated in a basket of regional currencies (Ito, 2003).

The impetus behind the development of these initiatives is that if regional economies hold one another's bonds, this ought to facilitate diversification of financing from bank lending to bond financing<sup>31</sup>. This is particularly so if such actions help lower risk premia of regional bonds, hence encouraging others to enter the market. But why is there a need to diversify away from bank lending? What is wrong with Asia's continued heavy dependence on bank lending as a source of private market financing<sup>32</sup>? Bond financing is considered a relatively more stable source of debt financing, as bank loans are primarily illiquid, fixed-price assets in the sense that the interest rate - which is the price of the loan - does not vary much on the basis of changing market circumstances. Thus, almost all the adjustment has to take place

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<sup>30</sup> Countries involved thus far are Indonesia, Malaysia, the Philippines, Thailand, Singapore, China, Hong Kong, Japan, Korea, Australia and New Zealand. The initial size of the ABF is estimated at US\$ 1 billion.

<sup>31</sup> There have been a number of papers recently describing the state of regional bond markets in Southeast Asia and institutional and regulatory constraints hindering their developments (for instance, see Fabella and Madhur, 2003, Lamberte, 2002 and Sharma, 2001). Elson (2002) discusses general issues pertaining to development of bond markets in Asia.

<sup>32</sup> To illustrate the dominance of bank financing: in 2000, domestic bank credit as a percent of GDP in Indonesia, Malaysia, Philippines, Singapore and Thailand was 66, 111, 63, 80 and 112, respectively. In contrast, domestic bond financing in the five ASEAN countries was 35, 62, 31, 45 and 12, respectively (Elson, 2002).

via rises and falls in the quantity of bank lending, which in turn leads to sharp booms and busts in bank flows. These sudden reversals in bank flows had calamitous and long-lasting effects on the domestic financial systems in the East Asian economies in 1997-98 (Baily, Farrell and Lund, 2000 and Rajan, 2002b). In addition, if the regional bonds are issued in domestic or regional currencies as opposed to third country ones (mainly the US dollar), this in turn ought to reduce the vulnerability of the regional economies to currency mismatches). – This is where the ABF, which only involves US dollar denominated bonds, is found wanting compared to the ABC proposal<sup>33</sup>.

While the successful implementation of these financial market initiatives ought to bolster the extent of regional financial integration, it is critical that they do not detract from domestic structural reforms to broaden and deepen individual capital markets. After all, a regional alliance is only as strong as its weakest link<sup>34</sup>. In addition, any regional initiative must keep in mind the transactions costs of setting up such a scheme.

Even if the ASEAN/East Asian economies do strengthen financial and, for that matter, trade links, does that necessarily imply that the region is any closer to monetary integration, i.e. a common currency? As noted, there appears to be a complex and bi-directional nexus between monetary integration, on the one hand, and financial integration on the other. So theory is not unambiguous. It may well be that monetary integration gives rise to self-validating processes which facilitate financial and overall economic integration.

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<sup>33</sup> This said, the political viability of an ABC initiative is questionable. In addition, one must be concerned about the transactions costs of the ABC initiative.

<sup>34</sup> In parallel with such initiatives to boost regional liquidity and financial market depth, individual countries have been actively developing local bond markets and have been liberalizing their financial sectors and generally lifting restrictions on foreign ownership and involvement (see Elson, 2002 for a discussion). At the same time, many in ASEAN (Malaysia, Indonesia and Thailand) have followed the Singapore example of tightening controls on the offshore trading of their currencies. While there may be good rationale for these measures as a means of crisis prevention or safeguards (Ishii, Otker-Obe and Cui, 2001 and Rajan, 2003c), to the extent that these actions reduce the size and liquidity of currency markets, they are working against the other goal of reducing the degree of fragmentation of ASEAN capital markets.

However, given the divergence in economic and institutional structures in the region, any attempt to create a common currency absent macroeconomic policy coordination and mechanism for automatic intraregional fiscal transfers is far too risky and premature and will in all likelihood be a failure, setting back prospects for other forms of economic integration.

Of course, one might always argue that there is a degree of endogeneity in all OCA criteria. Willett (2001) notes “if a country is close to meeting the criteria *ex-ante*, it may be wise to go ahead on the basis of the prediction that the criteria will indeed be met *ex-post*.” However, he goes on to add “(i)t would be dangerous to assume substantial rapid change...” (p.18). Others like Goodhart (1995) dispute the relevance of economic criteria altogether, claiming that political consideration dominate formation of currency areas. Eichengreen (2002b) also notes “(i)f monetary union was attractive to Europe because it was integral to the larger project of economic integration, then it was feasible because it was part of the larger process of political integration” (p.6)<sup>35</sup>.

This type of political consensus, while gradually emerging in ASEAN and the larger East Asian regions, is still far off from being universal. To be sure, “vision statements” by regional leaders for a currency union have become more common since the crisis, they have hitherto not been backed up by any serious discussion on the type of institutional structures or formal mechanisms and decision-making bodies needed for such regional economic integration of monetary and exchange rate policies to be a success (such as an independent region-wide central bank, a system of inter-regional risk sharing arrangements to facilitate fiscal transfers for redistributing income intraregionally, measures to ensure European-type macroeconomic convergence, and the like). In addition, substantial asymmetries in

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<sup>35</sup> There may certainly be positive feedback from monetary integration to political integration. In other words, there may be a degree of endogeneity with regard to political integration. However, it is important for there to exist a high degree of will towards political integration in the first instance to make a currency area viable.

the sizes, levels and stages of economic development of the economies in East Asia, on the one hand, and the *de facto* policy of strict non-intervention in one another's affairs (economic and particularly political), on the other, makes it extremely difficult to envisage the successful introduction of "tie-in" clauses to create punishment mechanisms to ensure conformity of economic policies as done in Europe. In the final analysis, Kenen's (2000) general conclusion that solving the problems of governance and accountability needed to form a currency union may be far too herculean a task for most other groups of countries outside Europe, appears especially pertinent to ASEAN and the larger East Asian region in the foreseeable future (also see Rajan, 2002a).

Thus, the balance of judgments suggests that from a practical policy perspective the aim should be to continue with steps to enhance financial and economic cooperation by reducing distortions and barriers to cross-border economic activity. As the regional economies get more interdependent, are more synchronized in terms of business cycles, experience greater convergence in economic structures, macroeconomic policies and economic capacities, and develop greater labour market flexibility, then and only then should there be a serious attempt at more formal monetary integration (Bayoumi, Eichengreen and Mauro, 2000). Even Europe, which appears to have experienced greater degree of *de facto* economic integration post monetary integration expended a great deal of effort into ensuring satisfaction of preconditions prior to monetary integration (Eichengreen, 2002c). Any attempt by ASEAN or the larger East Asia at formal monetary integration in the near future is putting the cart before the horse and is doomed to failure; deeper integration is unlikely to occur dynamically following monetary integration. In this regard, Eichengreen (2002c) notes:

The effort to construct a regional exchange rate stabilization agreement would only come to grief and discredit the wider project of economic integration. And, given the resistance to Asia to building strong regional institutions and countries' lack of enthusiasm for

political integration, a more ambitious step like a single Asian currency remains social science fiction” (p.13)<sup>36</sup>.

Given that monetary integration should only be a much, much longer-term goal, does this imply that efforts to promote closer regional monetary ties ought to be eschewed entirely for the time being? The answer surely is no.

Eichengreen (2002a) reaches a similar conclusion, arguing that while monetary cooperation per se “is the wrong project for Asia...there is a case for cooperation to deepen and strengthen regional financial markets” (p.17). As noted, the East Asian economies are taking steps in this direction. In addition, the regional economies ought to continue taking steps to promote regional monetary cooperation by fortifying regional liquidity arrangements like the Chiang-Mai initiative (CMI) and exert greater efforts at promoting serious macroeconomic policy dialogue and transparency of data and policy actions<sup>37</sup>. In this regard, a natural starting point would be to continue to strengthen the ASEAN Surveillance Process (ASP) (Bird and Rajan, 2002, Rajan, 2000 and Rajan and Siregar, 2003). A major limitation of the ASP as it is currently structured is that there are no fact-finding missions as with the IMF. Participating governments (finance ministry and central bank officials) offer information to the ASP directly. Thus, the effectiveness of regional surveillance is still highly limited. Whether member economies are willing and able to move beyond the current peer review process to more formally engage each other, and confront/be ready to be confronted in the event of profligate policies, is unclear<sup>38</sup>.

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<sup>36</sup> He makes a similar point in Eichengreen (2001a).

<sup>37</sup> In May 2000, the APT Finance Ministers agreed, at a meeting in Chiang Mai (Thailand) to create a regional financing arrangement in East Asia. The so-called “Chiang Mai Initiative” (CMI) comprises an expanded ASEAN Swap Arrangement (ASA) and a network of bilateral swap arrangements (BSAs) among ASEAN economies, China, Japan and Korea. Since then the ASA has been increased to US\$1 billion in size (effective November 2000) and a number of BSAs have been agreed upon with an aggregate size of US\$31.5 billion (Annex 1).

<sup>38</sup> According to the ADB (2003):

At the present time, the informal surveillance system that is in existence among the ASEAN+3 economies and their central banks is deemed adequate to oversee the operations of the CMI. The only efforts being made at an

However, as long as ASEAN members hesitate to be anything but fully open to “straight talk”, they should eschew any pretensions of wanting to create a common currency, or that matter, any initiative that involves deep integration. A broad-based economic approach to integration that has been suggested as a means of fostering a “community spirit” in ASEAN is more realistic. In this regard, greater effort must be expended by ASEAN members to addressing and bridging the large and growing income gap between regional members. While a simple answer to this would be to pursue a two-tier or two-speed integration process – a preferred solution thus far – the concern with this strategy is that the degree of cohesiveness and therefore overall effectiveness of ASEAN may be eroded to the detriment of all members.

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institutional level are to establish early warning systems and to monitor short-term capital flows.

**Annex 1**  
**ASEAN Plus Three (APT) Bilateral Swap Arrangements under the Chiang-Mai Initiative**

<b>Bilateral Swap Arrangements (BSAs)<sup>a</sup></b>	<b>Currencies</b>	<b>Status</b>	<b>Size</b>
Japan-Korea	US\$/Won	Concluded / 4 July 2001	US\$ 2.0 billion
Japan-Thailand	US\$/Baht	Concluded / 30 July 2001	US\$ 3.0 billion
Japan-Philippines	US\$/Peso	Concluded / 27 August 2001	US\$ 3.0 billion
Japan-Malaysia	US\$/Ringgit	Concluded / 5 October 2001	US\$ 1.0 billion
China - Thailand	US\$/Baht	Concluded / 6 December 2001	US\$ 2.0 billion
Japan - China <sup>b</sup>	Yen/Renminbi	Concluded / 28 March 2002	US\$ 3.0 billion
China - Korea <sup>c</sup>	Renminbi/Won	Concluded / 24 June 2002	US\$ 2.0 billion
Korea - Thailand <sup>d</sup>	US\$/Won/Baht	Concluded / 25 June 2002	US\$ 1.0 billion
Korea - Malaysia <sup>d</sup>	US\$/Won/Ringgit	Concluded / 26 July 2002	US\$ 1.0 billion
Korea - Philippines <sup>d</sup>	US\$/Peso	Concluded / 9 August 2002	US\$ 1.0 billion
China - Malaysia	US\$/Ringgit	Concluded / 9 October 2002	US\$ 1.5 billion
Japan - Indonesia	US\$/Rupiah	Concluded / 17 February 2003	US\$ 3.0 billion
China - Philippines	Under Negotiation		
Japan - Singapore	Negotiations recently concluded		

Notes: a) These are in addition to the bilateral swaps US\$ 7.5 billion that Japan is providing to Korea and Malaysia under the New Miyazawa Initiative.

b) The Japan - China BSA is a two-way yen/renminbi swap arrangement where each party can request the other party to provide liquidity support in the specified currency up to the agreed amount. The overall availability for this BSA is therefore counted as US\$ 6 billion (equivalent) though the face value of the BSA is US\$ 3 billion (equivalent).

c) The China - Korea BSA is a two-way renminbi/won swap agreement where China and the Bank of Korea shall make available to each other convertible currencies equivalent to US\$ 2 billion (counted as US\$ 4 billion in total) when necessary to overcome balance of payments difficulties.

d) A two-way swap transaction of US dollar against the local currency in which either party could request the other party to enter into the swap transaction with the maximum drawing amount of US\$ 1 billion, therefore it is counted as US\$ 2 billion.

Source: ADB (2003)

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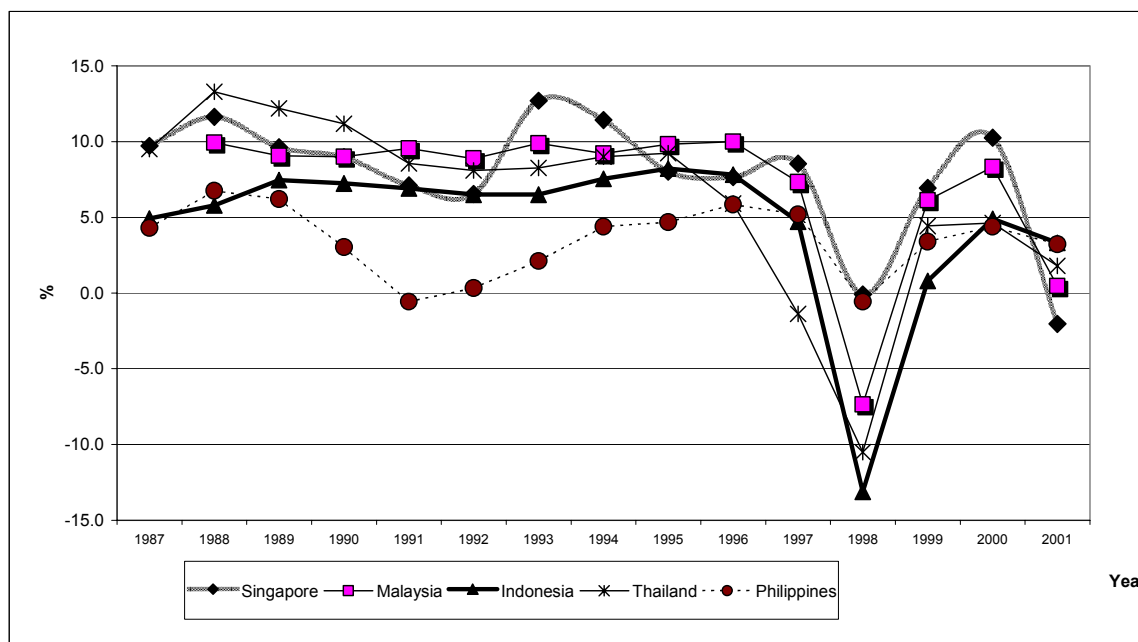
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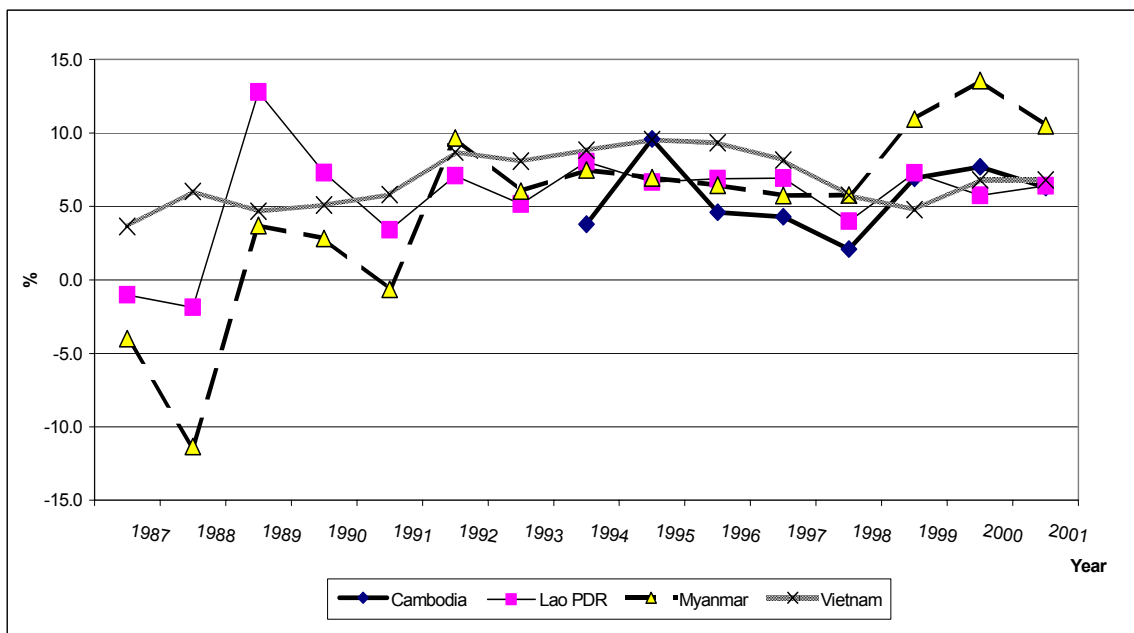
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**Figure 1**  
**Annual GDP Growth Rates of Original ASEAN Members,**  
**1987-2001 (percent)**



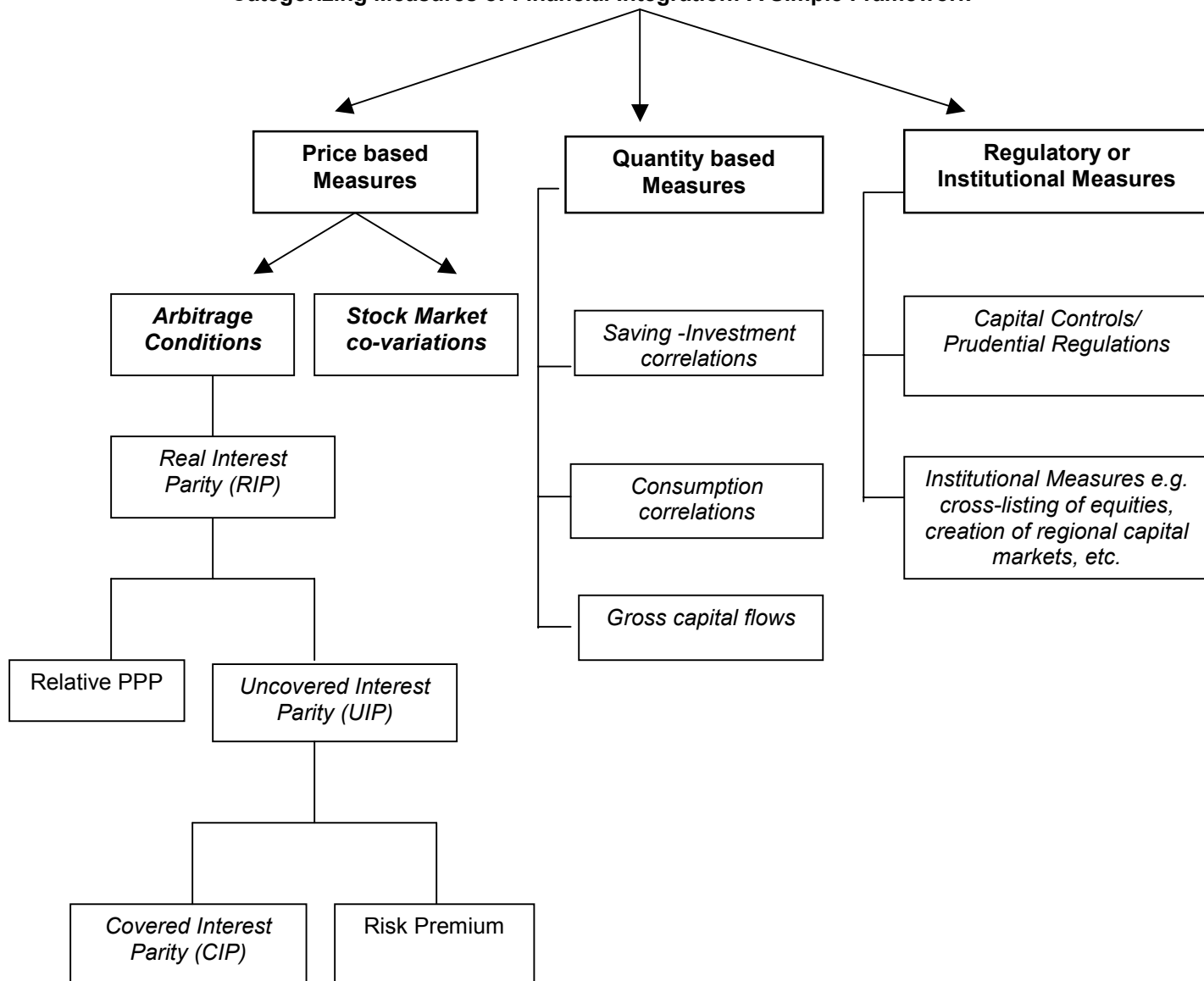
Note: Data for Brunei are unavailable.  
 Source: CEIC Database

**Figure 2**  
**Annual GDP Growth Rates of New ASEAN Members (CLMV Countries),**  
**1987-2001 (percent)**



Note: Growth rate for Myanmar in 2001 refers to fiscal year beginning in April.  
 Source: CEIC Database

**Figure 3**  
**Categorizing Measures of Financial Integration: A Simple Framework**



Source: Author

**Table 1**  
**Covered Interest Parity (CIP), 1985-94**

	$\alpha = 0$ , (Std. Dev.)	$\beta = 1$ , (Std. Dev.)
Hong Kong	-0.04 (0.01)	0.97 (0.05)
Japan	-0.01 (0.002)	1.01 (0.05)
Malaysia	0.14 (0.03)	0.87 (0.03)
Taiwan	0.00 (0.04)	0.59 (0.20)
Thailand	-0.30 (0.16)	0.99 (0.05)
Singapore	0.20 (0.03)	0.96 (0.03)

Source: de Brouwer (1999)

**Table 2**  
**Uncovered Interest Parity (UIP) and Uncovered Interest Differentials (UIDs), 1985-94**

	$\alpha = 0$ , (Std. Dev.)	$\beta = 1$ , (Std. Dev.)	UID, (Std. Dev.)
Hong Kong	-0.04 (0.03)	-0.29 (0.07)	0.06 (0.05)
Indonesia	0.90 (0.12)	0.02 (0.07)	-0.69 (0.13)
Japan	-2.80 (0.65)	-2.41 (0.75)	-0.71 (0.64)
Korea	-0.10 (0.23)	0.58 (0.15)	-0.59 (0.22)
Malaysia	-0.51 (0.19)	-1.04 (0.20)	0.49 (0.29)
Philippines	0.34 (1.15)	0.23 (0.37)	-1.83 (0.55)
Singapore	2.03 (0.40)	-2.29 (0.47)	0.02 (0.25)
Taiwan	0.14 (0.20)	1.25 (0.22)	-0.58 (0.24)
Thailand	-0.34 (0.20)	0.14 (0.20)	0.71 (0.16)

Note: \* = Statistical significance at the 5 percent level.  
Source: de Brouwer (1999)

**Table 3**  
**Uncovered Interest Parity (UIP), 1990s**

	$\beta = 1$ (Std. Dev.)
Hong Kong	-0.35 (0.18)
Indonesia	0.22 (2.05)
Japan	-0.82 (1.36)
Korea	3.41 (4.12)
Thailand	0.52 (1.86)

Source: Flood and Rose (2001)

**Table 4**  
**Uncovered Interest Differentials (UIDs) (in percent)**  
**(Period 1: January 1995 - December 1996; Period 2: January 1998 - December 1999;**  
**Period 3: January 2000 - June 2002)**

**A. Domestic Economy: Indonesia**

<b>Foreign Economies</b>	<b>Period 1</b>	<b>Period 2</b>	<b>Period 3</b>
Malaysia	2.98	21.4	0.04
Philippines	2.53	20.6	2.80
Singapore	4.83	24.7	3.30
Thailand	1.98	17.8	3.60
Korea	5.26	13.1	2.04
China	1.02	23.4	0.60
Hong Kong	3.84	22.8	-0.03
Average	3.21	20.54	1.76

**B. Domestic Economy: Thailand**

<b>Foreign Economies</b>	<b>Period 1</b>	<b>Period 2</b>	<b>Period 3</b>
Malaysia	1.01	2.74	-3.38
Philippines	0.54	1.73	-0.78
Singapore	2.85	5.99	-0.56
Indonesia	-1.98	-17.8	-3.60
Korea	3.27	-4.81	-1.76
China	-0.96	5.09	-2.82
Hong Kong	1.73	4.40	-3.44
Average	0.92	-0.38	-2.33

**C. Domestic Economy: Malaysia**

<b>Foreign Economies</b>	<b>Period 1</b>	<b>Period 2</b>	<b>Period 3</b>
Indonesia	-2.98	-21.40	-0.04
Philippines	-0.45	-0.65	2.80
Singapore	1.85	3.53	2.44
Thailand	-1.01	-2.74	3.38
Korea	2.41	-7.11	1.37
China	-1.96	2.68	0.56
Hong Kong	0.66	1.99	-0.07
Average	-0.21	-3.39	1.49

**D. Domestic Economy: Philippines**

<b>Foreign Economies</b>	<b>Period 1</b>	<b>Period 2</b>	<b>Period 3</b>
Indonesia	-2.53	-20.6	-2.80
Malaysia	0.45	0.65	-2.80
Singapore	2.28	4.00	0.02
Thailand	-0.54	-1.73	0.78
Korea	2.87	-6.21	-1.13
China	-1.51	3.08	-2.24
Hong Kong	1.44	2.39	-2.86
Average	0.35	-2.63	-1.58

**E. Domestic Economy: Singapore**

<b>Foreign Economies</b>	<b>Period 1</b>	<b>Period 2</b>	<b>Period 3</b>
Indonesia	-4.83	-24.70	-3.30
Philippines	-2.28	-4.00	-0.02
Malaysia	-1.85	-3.53	-2.44
Thailand	-2.85	-5.99	0.56
Korea	0.54	-10.44	-0.45
China	-3.79	-0.86	-1.94
Hong Kong	-1.23	-1.55	-2.57
Average	-2.33	-7.30	-1.45

**F: Domestic Economy: Korea**

<b>Foreign Economies</b>	<b>Period 1</b>	<b>Period 2</b>	<b>Period 3</b>
Indonesia	-5.26	-13.10	-2.04
Philippines	-2.87	6.21	1.13
Malaysia	-2.41	7.11	-1.37
Thailand	-3.27	4.81	1.76
Singapore	-0.54	10.44	0.45
China	-4.37	9.65	-1.31
Hong Kong	-1.92	8.95	-1.94
Average	-2.95	4.87	-0.47

**G: Domestic Economy: China**

<b>Foreign Economies</b>	<b>Period 1</b>	<b>Period 2</b>	<b>Period 3</b>
Indonesia	-1.02	-23.40	-0.60
Philippines	1.51	-3.08	2.24
Malaysia	1.96	-2.68	-0.56
Thailand	0.96	-5.09	2.82
Singapore	3.79	0.86	1.94
Korea	4.37	-9.65	1.31
Hong Kong	2.68	-0.69	-0.63
Average	2.04	-6.25	0.93

**H: Domestic Economy: Hong Kong**

<b>Foreign Economies</b>	<b>Period 1</b>	<b>Period 2</b>	<b>Period 3</b>
Indonesia	-3.84	-22.80	0.03
Philippines	-1.44	-2.39	2.86
Malaysia	-0.66	-1.99	0.07
Thailand	-1.73	-4.40	3.44
Singapore	1.23	1.55	2.57
Korea	1.92	-8.95	1.94
China	-2.68	0.69	0.63
Average	-1.03	-5.47	1.65

Source: Cavoli, Rajan and Siregar (2003)

**Table 5**  
**Decomposition of Real Interest Parity Differentials (RIDs), 1980-94**

Country	RID	UID	PPP
Hong Kong	1.03* (0.13)	0.05 (0.07)	-0.98* (0.15)
Indonesia	-0.70* (0.29)	-0.81* (0.20)	-0.11 (0.26)
Japan	0.11 (0.11)	-0.94 (0.87)	-1.05 (0.85)
Korea	-0.62* (0.18)	-0.65* (0.27)	-0.03 (0.29)
Malaysia	0.05 (0.14)	0.48 (0.34)	0.43 (0.32)
Philippines	-1.73* (0.35)	-1.97* (0.62)	-0.24 (0.57)
Singapore	0.26* (0.10)	-0.04 (0.31)	-0.30 (0.33)
Taiwan	-0.24 (0.18)	-0.49 (0.36)	-0.25 (0.43)
Thailand	-0.47* (0.20)	-0.93* (0.23)	-0.46 * (0.18)

Note: \* = Statistical significance at the 5 percent level.

Source: de Brouwer (1999)

**Table 6**  
**Correlations of the Stock Exchange Returns**  
 (Period: January 1, 1996 - December 31, 1996)

	Indonesia	Malaysia	Philippines	Thailand	Singapore	Korea	Hong Kong	US
Indonesia	1.000	0.444	0.407	0.269	0.478	-0.081	0.407	0.123
Malaysia	0.444	1.000	0.352	0.309	0.636	0.075	0.492	0.066
Philippines	0.407	0.352	1.000	0.244	0.379	0.031	0.341	0.095
Thailand	0.269	0.309	0.244	1.000	0.419	-0.029	0.269	0.056
Singapore	0.478	0.636	0.379	0.419	1.000	0.031	0.586	0.013
Korea	-0.081	0.075	0.031	-0.029	0.031	1.000	0.101	0.089
Hong Kong	0.407	0.492	0.314	0.269	0.586	0.101	1.000	0.081
US	0.123	0.066	0.095	0.056	0.013	0.089	0.081	1.000
Average for ASEAN	0.399	0.435	0.346	0.310	0.478	0.005	0.419	0.071
Total Average	0.292	0.339	0.260	0.219	0.363	0.031	0.325	0.075

Source: Cavoli, Rajan and Siregar (2003)

**Table 7**  
**Correlations of the Stock Exchange Returns**  
 (Period: January 1, 1998 - December 31, 1998)

	<b>Indonesia</b>	<b>Philippines</b>	<b>Thailand</b>	<b>Singapore</b>	<b>Korea</b>	<b>Hong Kong</b>	<b>US</b>
Indonesia	1.000	0.324	0.408	0.421	0.254	0.313	0.053
Philippines	0.324	1.000	0.622	0.606	0.259	0.482	0.223
Thailand	0.408	0.622	1.000	0.677	0.304	0.577	0.199
Singapore	0.421	0.606	0.677	1.000	0.251	0.687	0.209
Korea	0.254	0.259	0.304	0.251	1.000	0.246	0.055
Hong Kong	0.313	0.482	0.577	0.687	0.246	1.000	0.289
US	0.053	0.223	0.199	0.209	0.055	0.289	1.000
Average for ASEAN	0.384	0.517	0.569	0.568	0.267	0.515	0.171
Total Average	0.296	0.419	0.465	0.475	0.311	0.432	0.171

Source: Cavoli, Rajan and Siregar (2003)

**Table 8**  
**Correlations of the Stock Exchange Returns**  
 (Period: January 1, 2000 - June 30, 2001)

	<b>Indonesia</b>	<b>Philippines</b>	<b>Thailand</b>	<b>Singapore</b>	<b>Korea</b>	<b>Hong Kong</b>	<b>US</b>
Indonesia	1.000	0.133	0.074	0.150	0.162	0.151	0.015
Philippines	0.133	1.000	0.233	0.193	0.168	0.229	-0.005
Thailand	0.074	0.232	1.000	0.386	0.341	0.369	-0.043
Singapore	0.150	0.193	0.386	1.000	0.476	0.585	0.041
Korea	0.162	0.168	0.341	0.476	1.000	0.538	0.049
Hong Kong	0.151	0.229	0.369	0.585	0.538	1.000	-0.036
US	0.015	-0.005	-0.043	0.041	0.049	-0.036	1.000
Average for ASEAN	0.357	0.186	0.231	0.243	0.287	0.334	0.002
Total Average	0.114	0.158	0.227	0.305	0.289	0.306	0.004

Source: Cavoli, Rajan and Siregar (2003)

**Table 9**  
**Granger-Causality on the Stock Exchange Returns**  
 (Period: January 1, 1996 - December 31, 1996)

<b>Null Hypothesis</b>	<b># of Obs (lags)</b>	<b>F-stats (Prob)</b>
Hong Kong does not Granger Cause Indonesia	242 (2)	9.9080 (0.0001)
Hong Kong does not Granger Cause Malaysia	242 (2)	2.5121 (0.0832)
Hong Kong does not Granger Cause Thailand	242 (2)	2.2404 (0.1000)
Indonesia does not Granger Cause Malaysia	242 (2)	2.3579 (0.0968)
Indonesia does not Granger Cause Hong Kong	242 (2)	5.0705 (0.0069)
Malaysia does not Granger Cause Hong Kong	242 (2)	3.4824 (0.0323)
Malaysia does not Granger Cause Singapore	242 (4)	2.1104 (0.0803)
Philippines does not Granger Cause Indonesia	242 (2)	2.3529 (0.0973)
Philippines does not Granger Cause Thailand	242 (2)	6.9427 (0.0018)
Thailand does not Granger Cause Indonesia	242 (2)	4.9711 (0.0077)
Thailand does not Granger Cause Philippines	242 (2)	3.7774 (0.0243)
Singapore does not Granger Cause Indonesia	242 (2)	5.6611 (0.0039)
Singapore does not Granger Cause Malaysia	242 (2)	3.4478 (0.0334)
USA does not Granger Cause Hong Kong	242 (2)	54.515 (0.0000)
USA does not Granger Cause Indonesia	242 (2)	11.081 (0.0000)
USA does not Granger Cause Malaysia	242 (2)	14.956 (0.0000)
USA does not Granger Cause Philippines	242 (2)	7.2885 (0.0000)
USA does not Granger Cause Singapore	242 (2)	20.033 (0.0000)

Source: Cavoli, Rajan and Siregar (2003)

**Table 10**  
**Granger Causality on the Stock Exchange Returns**  
 (Period: January 1, 1998 – December 31, 1998)

Null Hypothesis	# of Obs (lags)	F-stats (Prob)
Hong Kong does not Granger Cause Korea	249 (2)	2.9842 (0.0525)
Hong Kong does not Granger Cause Philippines	249 (2)	3.3062 (0.0383)
Indonesia does not Granger Cause Hong Kong	249 (2)	11.388 (0.0000)
Indonesia does not Granger Cause Korea	249 (2)	3.6757 (0.0268)
Indonesia does not Granger Cause Singapore	249 (2)	4.7085 (0.0099)
Indonesia does not Granger Cause Philippines	249 (2)	5.8752 (0.0032)
Indonesia does not Granger Cause Thailand	249 (2)	4.1054 (0.0176)
Indonesia does not Granger Cause USA	249 (2)	5.0108 (0.0074)
Korea does not Granger Cause Philippines	249 (2)	7.7611 (0.0005)
Korea does not Granger Cause Thailand	249 (2)	4.6059 (0.0109)
Korea does not Granger Cause Hong Kong	249 (2)	3.7780 (0.0242)
Philippines does not Granger Cause Hong Kong	249 (2)	10.557 (0.0000)
Philippines does not Granger Cause USA	249 (2)	4.1743 (0.0165)
Philippines does not Granger Cause Singapore	249 (2)	6.1567 (0.0025)
Thailand does not Granger Cause Hong Kong	249 (2)	8.4097 (0.0003)
Thailand does not Granger Cause Korea	249 (2)	2.6809 (0.0705)
Thailand does not Granger Cause Philippines	249 (2)	3.4172 (0.0344)
Thailand does not Granger Cause Singapore	249 (2)	2.8589 (0.0593)
Thailand does not Granger Cause USA	249 (2)	3.1102 (0.0464)
Singapore does not Granger Cause Korea	249 (2)	4.1467 (0.0169)
Singapore does not Granger Cause Philippines	249 (2)	2.3565 (0.0969)
USA does not Granger Cause Hong Kong	249 (2)	9.6092 (0.0000)
USA does not Granger Cause Indonesia	249 (2)	3.1401 (0.0451)
USA does not Granger Cause Korea	249 (2)	3.6214 (0.0282)
USA does not Granger Cause Philippines	249 (2)	10.070 (0.0000)
USA does not Granger Cause Thailand	249 (2)	10.026 (0.0000)
USA does not Granger Cause Singapore	249 (2)	3.2541 (0.0403)

Note: The Malaysian case is excluded due to capital control policy and fixed exchange rate policy adopted in September 1998.

Source: Cavoli, Rajan and Siregar (2003)

**Table 11**  
**Granger-Causality Test on the Stock Exchange Returns**  
 (Period: January 1, 2000 – July 1, 2001)

<b>Null Hypothesis</b>	<b># of Obs (lags)</b>	<b>F-statistics (Prob)</b>
Hong Kong does not Granger Cause Singapore	388 (2)	3.4139 (0.0339)
Korea does Granger Cause Philippines	388 (2)	7.0784 (0.0009)
Korea does Granger Cause Thailand	388 (2)	4.3598 (0.0135)
Singapore does Granger Cause Philippines	388 (2)	3.2728 (0.0390)
Singapore does Granger Cause Indonesia	388 (2)	2.6593 (0.0714)
Thailand does Granger Cause Philippines	388 (2)	4.3080 (0.0132)
Thailand does Granger Cause Indonesia	388 (2)	2.7565 (0.0648)
USA does Granger Cause Hong Kong	388 (2)	53.262 (0.0000)
USA does Granger Cause Korea	388 (2)	24.342 (0.0000)
USA does Granger Cause Philippines	388 (2)	6.0886 (0.0025)
USA does Granger Cause Singapore	388 (2)	31.812 (0.0000)
USA does Granger Cause Thailand	388 (2)	7.9173 (0.0004)

Note: The Malaysian case is excluded due to capital control policy and fixed exchange rate policy adopted in September 1998.

Source: Cavoli, Rajan and Siregar (2003)

**Table 12**  
**Degree of Capital Controls (Johnston et al. Index)**

	Indonesia	Korea	Malaysia	Thailand
1995	0.53	0.68	0.71	0.72
1996	0.53	0.67	0.71	0.72
1997	0.51	0.58	0.71	0.70
1998	0.48	0.48	0.76	0.70
1999	0.49	0.42	0.76	0.70

Note: Decline implies fewer restrictions.  
Source: Park and Bae (2002)

**Table 13**  
**Coverage of Capital Controls in Selected Asian Economies**

	China	HK	India	Indo	Jap	Kor	Mal	Phi	Sin	Tha
<b>Type of Restriction</b>	<b>1995</b>									
Capital market securities	Y	N	Y	Y	Y	Y	Y	Y	N	Y
Money market instruments	Y	N	Y	--	Y	Y	Y	Y	N	Y
Collective investment securities	Y	N	Y	Y	N	Y	Y	Y	N	Y
Derivatives & other instruments	Y	N	Y	Y	N	Y	Y	Y	N	Y
Commercial credits	Y	N	Y	Y	N	Y	Y	Y	Y	N
Financial credits	Y	N	Y	Y	Y	Y	Y	Y	Y	Y
Guarantees, sureties, financial facilities	Y	N	Y	Y	N	Y	Y	Y	N	N
Direct investment	Y	N	Y	Y	N	Y	Y	Y	N	Y
Liquidation of direct investment	N	N	Y	N	N	N	N	N	N	N
Real estate transactions	Y	N	Y	Y	N	Y	Y	Y	Y	Y
Personal capital movements	Y	N	--	N	N	--	N	Y	N	N
<b>Ratio of Y to Total</b>	<b>10/11</b>	<b>0/11</b>	<b>10/10</b>	<b>8/10</b>	<b>3/11</b>	<b>9/10</b>	<b>9/11</b>	<b>10/11</b>	<b>3/11</b>	<b>7/11</b>
<b>Type of Restriction</b>	<b>2001</b>									
Capital market securities	Y	N	Y	Y	N	Y	Y	Y	Y	Y
Money market instruments	Y	N	Y	Y	N	Y	Y	Y	N	Y
Collective investment securities	Y	N	Y	Y	N	Y	Y	Y	N	Y
Derivatives & other instruments	Y	N	Y	Y	N	Y	Y	Y	Y	Y
Commercial credits	Y	N	Y	Y	N	Y	Y	Y	N	N
Financial credits	Y	N	Y	Y	Y	Y	Y	Y	Y	Y
Guarantees, sureties, financial facilities	Y	N	Y	Y	N	Y	Y	Y	N	Y
Direct investment	Y	N	Y	Y	N	Y	Y	Y	N	Y
Liquidation of direct investment	Y	N	Y	N	N	N	N	N	N	N
Real estate transactions	Y	N	Y	Y	N	Y	Y	Y	Y	Y
Personal capital movements	Y	N	Y	N	N	Y	Y	Y	N	Y
<b>Ratio of Y to Total</b>	<b>11/11</b>	<b>0/11</b>	<b>11/11</b>	<b>9/11</b>	<b>1/11</b>	<b>10/11</b>	<b>10/11</b>	<b>10/11</b>	<b>4/11</b>	<b>9/11</b>

Source: Elson (2002) based on data from Annual Report on Exchange Arrangements and Exchange Restrictions, (IMF)

**Table 14**  
**Foreign Investment Ceiling for Listed Stocks in Selected Asian Markets, 1993-2001<sup>a</sup>**  
 (percent)

	1993	1994	1995	1996	1997	1998	1999	2000	2001 <sup>b</sup>
China	--	9.9	7.7	12.3	10.2	24.6	37.4	34.9	34.6
India	20.2	21.6	23.4	25.7	28.9	26.5	28.3	29.1	32.2
Indonesia	47.8	50.4	52.1	62.0	97.7	97.7	96.1	80.4	81.9
Korea	9.6	11.1	13.8	22.1	54.5	91.2	93.8	87.0	94.9
Malaysia	68.2	82.7	83.5	91.9	93.6	94.2	95.9	95.2	96.1
Philippines	50.1	54.0	53.0	45.9	48.3	47.7	47.4	46.2	47.2
Thailand	28.2	27.8	29.7	34.1	47.0	53.8	52.6	53.4	50.9

Notes: a) Ratio of market capitalization of the Investable index (IFCI) and the global index (IFCG).

b) Based on end-November data.

Source: Elson (2002)