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The Role of Financial Integration in East Asia in Promoting Regional Growth and Stability

Chaipat Poonpatpibul
Surach Tanboon
Pornnapa Leelapornchai

Monetary Policy Group
Bank of Thailand

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Abstract

This paper examines the role of financial integration in promoting growth and stability in East Asia. It first examines the degree of financial integration and finds that East Asia is more integrated with the developed markets than with regional markets. It then proceeds to investigate the benefits of regional financial integration on economic growth. Intraregional foreign direct investment is found to have a crucial role in enlarging trade within the region. Financial integration can also lead to better allocation of funds within the region, lower risk premium and cost of capital, and financial market deepening. However, financial integration may pose higher risks on economic stability via greater volatility of capital flows which can be magnified by increasing cross-border linkages. As East Asian countries will likely be exposed to a variety of new types of risks with greater international financial integration, regional financial cooperation will have to play an important role. Strengthening regional surveillance system, establishing regional crisis prevention and resolution framework, and building domestic and regional financial infrastructure particularly for long-term regional financing are necessary for enhancing long-term macroeconomic and financial stability as well as competitiveness of the region.

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Executive Summary

Although trade integration in East Asia has made a significant progress in the past decade, regional financial integration is still lacking behind. Based on various measures of financial integration, this paper finds that East Asia is more integrated with the developed markets than with itself as reflected by the following aspects. First, according to restrictions on cross-border flows, East Asian financial openness has generally improved but still lagged behind developed markets. Second, regional bank lending and cross-country portfolio investment have been far below those of the European Union. Third, dispersion of the overnight interbank interest rates in the region has decreased but it is still higher than the European Union counterpart. However, convergence of regional interbank interest rates and increasing stock price and exchange rate comovements across regional countries over time have indicated a higher degree of financial linkage.

This paper does not cover an establishment of a single monetary institution in the region given the almost consensus that an Asian monetary union is far from viable at this point. Instead the paper focuses on the ongoing financial integration, which here refers to the freer flows of financial capital across national borders and the greater linkages of financial markets in the region. The focus of the paper is on the role of financial integration in promoting regional growth and stability.

As for economic growth, financial integration through FDI is found to be beneficial to regional growth via increasing intraregional exports. Other channels through which integrated East Asia provide an impetus to growth are also investigated. First, closely connected financial markets give rise to a better allocation of funds between net savers and net borrowers within the region. Second, a broadening scope of international risk sharing would bring about a lower risk premium and cost of capital. Third, financial market deepening in domestic markets potentially leads to higher economic growth.

Regarding macroeconomic stability, integrated financial markets could help increase investment opportunities within the region and provide a larger scope for consumption smoothing. So far, East Asia countries have not attained much of this benefit due to low levels of intraregional capital flows and cross-holding of assets within the region. Potential costs of integration should also be taken into consideration before proceeding to further integration. The most direct risk of financial integration on economic stability is greater volatility of capital flows which can be magnified by increasing cross-border linkages.

As East Asian countries will likely confront with increasing exposure to external risks under greater international financial integration, strengthening domestic economic and financial resiliency at both the domestic and regional levels is essential. Since the Asian crisis, at the country level, there have been several positive developments and efforts that have helped reduce external vulnerabilities. These include the moves toward a more credible monetary and exchange rate framework, improvements in the composition of capital inflows, increasing importance of capital markets, and an introduction of risk-based supervision framework. Nevertheless, several other areas such as transparency and governance need to be more emphasized

and improved. At the regional level, there is a large scope for cooperation among regional countries in the areas of regional crisis prevention and resolution framework, and building domestic and regional financial infrastructure particularly for long-term regional financing.

The important components of the crisis prevention and resolution framework are regional surveillance and liquidity support. The effectiveness of the regional surveillance system is crucial for assessing cross-border risks and deploying regional liquidity support and can be enhanced by including financial stability type of surveillance, adding independent assessment by expert group reviews or think-tank research, and conducting cross-regional surveillance with other regional groupings. Furthermore, better interface between regional surveillance and the IMF surveillance should also be emphasized. A regional agency may be needed to coordinate and strengthen the process of information gathering and sharing, economic assessment, as well as peer review and peer pressure. As for regional liquidity support, the Chiang Mai Initiative's mechanism should be further strengthened by enlarging the pool of funding arrangements and enhancing its surveillance system to reduce the moral hazard problem as well as dependence upon the IMF conditionality.

To enlarge and strengthen long-term financing via domestic and regional capital market development, efforts will have to focus on increasing market depth and liquidity. These include broadening market participants to include more institutional investors (such as pension funds, insurance companies, and asset management firms), introducing and enhancing asset securitization, increasing transparency in terms of trading information disclosure in the secondary market, developing the derivatives markets, promoting corporate governance, and establishing a regional credit rating agency.

In sum, although financial integration within East Asia lags behind integration with developed economies, it has been on an increasing trend. Given that financial integration potentially benefits economic growth and at the same time entails risks to stability, with appropriate prudential safeguards at different levels in place, closer financial integration should enable East Asia to take advantage of regional markets more fully.

Contents

Page

Figures

Tables

Boxes

1. Introduction

For the past decade, intraregional trade in East Asia has grown significantly following continued eliminations of trade barriers and capital account restrictions.[1] Intraregional exports as a share of total exports rose from an average of 44 percent during 1985-91 to 52 percent during 1999-2004, while intraregional imports also increased from 46 percent to 49 percent over the same period. The intensification of trade in East Asia has been driven by vertical specialization through the establishment of regional production chains by transnational corporations. The region has also benefited from the increasing role of China as a major station of the regional assembly line.

Although trade integration in East Asia has made a significant progress, regional financial integration is still lacking behind. There exists an enormous potential for further integration in the region with respect to cross-border capital flows and financial markets. It is important that we understand clearly the benefits and risks associated with integration, especially impacts on economic growth and stability, before proceeding further. This paper aims to shed lights on these issues, and also discusses how financial cooperation going forward should help ensure benefits with minimal risks. This paper also attempts to answer one important and often-asked question for East Asian countries: "Why regional, rather than global, financial integration and cooperation?" A brief answer is that integrated market with various and diversified assets is more attractive to international investors than small and medium-size markets that are disconnected. In addition, the regional grouping provides a strong voice in projecting the coalescing of views and interests in the international arena. In particular, as cross border rules and bank supervision standards are set by other regional groupings, it is important that East Asia as a group increasingly becomes a part of the rule and standard setting processes. Closer regional cooperation by itself can also enhance political motivation as well as discipline for domestic economic and financial reforms. Nevertheless, the goal of regional integration should not override the general goal of financial liberalization and openness, and countries should not be inward looking and proceed with regional integration at the cost of opportunities and interests outside the region.

In this paper we do not cover an establishment of a single monetary institution in the region—an ultimate goal of economic integration—given the almost consensus that an Asian monetary union is far from viable at this point. Instead we choose to focus on the ongoing financial integration, which here refers to the freer flows of financial capital across national borders and the greater linkages of financial markets in the region.

[1] In this paper East Asia refers to China (CHN), Hong Kong (HKG), Indonesia (IDN), Japan (JPN), South Korea (KOR), Malaysia (MYS), the Philippines (PHL), Singapore (SGP), and Thailand (THA).

The paper consists of five sections. After the introduction, Section 2 explores the degree of financial integration in East Asia through three measures: regulatory, quantity-based, and price-based measures. Section 3 investigates the benefits of financial integration on economic growth via increasing intraregional trade, better allocation of funds between net savers and net borrowers within the region, lower risk premium and cost of capital, and financial market deepening. Section 4 attempts to investigate the effects of regional financial integration on economic stability based on theory, existing empirical studies as well as the economic and financial structures of East Asian countries. This section also discusses various financial cooperation schemes, including regional crisis prevention and resolution mechanism, regional liquidity support, and long-term financing initiatives, aimed at fostering economic and financial stability. The last section concludes.

2. Financial Integration Measures

This section discusses measures of international financial integration which can be broadly grouped into three classes: regulatory measures, quantity-based measures, and price-based measures. The extent of regulations on various types of capital flows indicates potentiality or limitation of integration stipulated by the rules and regulations of each country. The less restrictive these regulations are, the more feasible capital may flow across borders. Quantity-based measures are concerned with the volume of capital flows that actually take place, and the amount of capital that flows across borders is one indication of the degree of financial integration in the region. Furthermore, the more capital flows between markets, the more liquid these markets become. With liquid capital markets, it is increasingly likely that arbitrage should work. As a result, prices should move together more uniformly or in some instances converge by the law of one price. Thus, a number of price variables are useful in assessing the degree of financial integration. In the three subsections that follow, various measures will be examined. The main finding is that East Asia is more integrated with the global financial system rather than with itself.

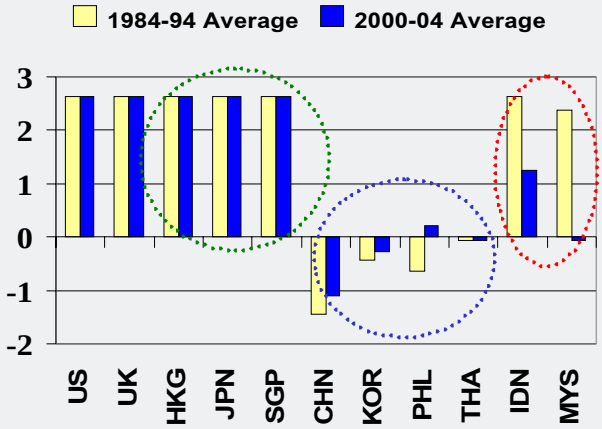
2.1. Regulatory Measures

One way to assess the degree of financial integration is to examine existing barriers to capital movement. Financial openness—an indication of a country's integration into the global financial market—has generally improved in East Asia since the early 1990s but still lagged behind that in developed economies. In Figure 2.1a, East Asian countries can be classified into three groups according to Chinn and Ito's (2004) financial openness index.[2] Hong Kong, Japan, and Singapore have a

[2] The Chinn-Ito openness index is based on cross-border restrictions on financial transactions reported in the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions* (AREAER). First, based on the information given in the AREAER, four dummy variables related to restrictions on current account transactions, restrictions on capital account transactions, foreign exchange surrender requirements for export proceeds, and the presence of multiple exchange rates are constructed. Second, Chinn and Ito compute the standardized first principal component of these dummy variables which becomes the financial openness index (see Box 2b for details on principal component analysis). The index takes on higher values the more open a country is to cross-border capital transactions.

relatively high degree of openness during 1984-2004 comparable with that of the United States and the United Kingdom. The second group consists of China, Korea, the Philippines, and Thailand, with a low but rising level of openness. In the last group, capital account openness of Indonesia and Malaysia sharply declines, especially that of Malaysia in line with attempts to slow the outflow of foreign investment in the wake of the 1997-98 financial crisis.

Figure 2.1a: East Asian financial openness has generally improved but still lagged behind developed economies



Higher values of the Chinn-Ito (2005) financial openness index indicate more openness to cross-border transactions

Whereas the above Chinn-Ito measure gives an overview of financial openness, Table 2.1a provides specific features of controls on capital transactions. Classifications of controls are as follows.

- **Controls on capital and money market instruments**. Capital market securities include shares, bonds, and other securities with an original maturity of more than one year. Money market instruments include treasury bills, short-term government papers, commercial papers, interbank deposits, repurchase agreements, and other securities with an original maturity of one year or less. Collective investment securities include mutual funds, unit trusts, and investment trusts.
- **Controls on derivatives and other instruments**, such as rights, warrants, options, futures, forwards, and swaps.
- **Controls on credit operations**. Commercial credits are defined as those covering international transactions in trade and services, while financial credits are credits other than commercial credits.

- **Controls on direct investment**, that is, investment that is essentially for the purpose of producing goods and services and, in particular, investment that allows investor participation in the management of the enterprise.

- **Controls on direct personal capital transactions**. These include transfers to the beneficiary, for example, loans, gifts and endowments, and inheritances.

Table 2.1a shows that only Japan and Singapore have low restrictions on capital transactions comparable to the United Kingdom and the United States. Other East Asian countries such as Korea, Thailand, Indonesia, the Philippines, and Malaysia are more restrictive. China has more controls than any other East Asian countries.

Table 2.1a: Summary features of controls on capital transactions

Controls on:	UK	JPN	US	SGP	KOR	THA	IDN	PHL	MYS	CHN
Capital and money market instruments										
Capital market securities			x	x	x	x	x	x	x	x
Money market instruments			x		x	x	x	x	x	x
Collective investment securities			x		x	x	x	x	x	x
Derivatives					x	x	x	x	x	x
Credit operations										
Commercial credits					x		x	x	x	x
Financial Credits				x	x	x	x	x	x	x
Direct investment	x	x	x		x	x	x	x	x	x
Liquidation of direct investment										x
Real estate transactions				x	x	x	x	x	x	x
Personal capital movements					x	x		x	x	x

x indicates that the specified practice is a feature of the exchange system

Source: ***Annual Report on Exchange Arrangements and Exchange Restrictions*****, 2005**

For controls on investment in particular, Figure 2.1b shows varying degrees of regulations set by the East Asian authorities. For inward investment, most countries either impose no restrictions (Singapore, Hong Kong, and Thailand) or have some in place for specific industries such as banking, public utilities, and manufacture of arms (Japan, Korea, and Indonesia). For outward investment, it is generally more restricted than inward investment as most countries are subject to various quantitative limits and/or regulatory approval. Only Singapore and Hong Kong have stipulated no controls on both inbound and outbound direct investment.

Figure 2.1b: Regulations on cross-border direct investments

Inward Investment	No restriction	Singapore, Hong Kong, Thailand
	Limits for certain industries	Australia, New Zealand, Japan, Korea, Indonesia, Philippines, China
	Approval required	Malaysia

Outward Investment	No restriction	Hong Kong, Singapore, Australia
	Certain limits and/or approval required	New Zealand, Japan, Indonesia, Thailand, Korea, Malaysia, Philippines, Vietnam, China

Source: IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions*, 2005

With respect to cross-border portfolio investments, East Asian countries also set regulations on both inward and outward flows. For portfolio inflows, Figure 2.1c shows that China, Indonesia, the Philippines, Thailand, and Korea are relatively restrictive compared with Singapore, Hong Kong, and Japan. In Figure 2.1d, regulations on portfolio outflows are imposed on both residents and nonresidents in the form of required approval or documentation in China, Indonesia, Philippines, and Thailand. In Japan and Hong Kong there are no restrictions on repatriation of capital and profits.

Figure 2.1c: Regulations on portfolio investment inflows

Money Market Bond Market	Not subject to controls	Australia, Hong Kong, Japan, Malaysia, New Zealand, Singapore
	Certain limitations	Thailand, Korea, Philippines, Indonesia
	Not allowed for non-residents	China

Equity Market	Certain limitations in banking sector	Japan, Singapore, Australia, Hong Kong, Malaysia
	Certain limit of share ownership	New Zealand, Korea, Indonesia
	Various limits	Thailand, Philippines, China

Sources: IMF, Asian Bonds Online

Figure 2.1d: Regulations on portfolio investment outflows

Residents

No restrictions	Australia, New Zealand, Singapore
Generally free	Hong Kong, Japan, Malaysia
Some restrictions; Approval required	Korea, Philippines, Indonesia, Thailand
Not allowed to invest abroad	China

Nonresidents

No restrictions	Australia, Hong Kong, Japan, New Zealand
Some restrictions	Korea, Singapore, Indonesia, Malaysia
Documentation required	Thailand, Philippines
Approval required	China

Sources: IMF, Asian Bonds Online

Although various restrictions on capital flows discussed in this section are not a direct measure of financial integration, they suggest that most countries in the region still lack behind developed markets in terms of financial openness and integration to the global financial market. While capital account liberalization has gradually taken place in many East Asian countries, some countries still have certain institutional and structural characteristics that constrain movements of cross-border flows. Further steps could be taken to relax restrictions on cross-border investments, while at the same time appropriate prudential safeguards should be in place. Such a strategy could increase cross-border flows without generating either excessive volatility or disruption in regional financial markets, and in the long term should enhance competition and enable local investors and firms to take advantage of regional markets.

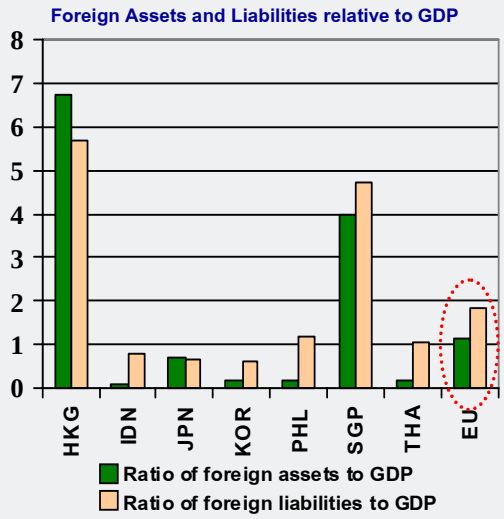
2.2. Quantity-based Measures

The second family of measures of financial integration is in quantitative terms. While the regulatory measures described in the previous section are *de jure* in the sense that they are official policy towards capital flows, quantity-based measures (and price-based measures) reflect *de facto* financial integration that has taken or is now taking place. Examples of quantity-based variables include stocks and flows of external assets and liabilities as well as international bank lending. The main finding of this section is that, although the degree of intraregional financial integration lags behind that of integration with the global financial system, East Asian economies are increasingly integrated financially, with cross-border capital flows becoming better intermediated within the region.

Foreign assets and liabilities

Information about external assets and liabilities of East Asian economies can indicate the degree of the region's openness. Most emerging countries in East Asia have a negative *net* asset position partly as a consequence of restrictions on outbound investment (as discussed in Section 2.1 above). Foreign assets of Indonesia, Malaysia, the Philippines, and Thailand have been far below foreign liabilities. On the other hand, Japan, Hong Kong, and Singapore, which have a relatively low degree of capital restriction, have a positive net external position. If one takes into account the size of the economy, foreign *asset* holdings of all emerging East Asia relative to GDP are generally low compared with the European Union, as shown in Figure 2.2a. Hong Kong and Singapore are exceptions, with a ratio of foreign assets to GDP above that of the European Union, possibly because these two countries are the main financial centers in East Asia.

Figure 2.2a: East Asia's foreign asset holding relative to GDP is generally low compared with EU

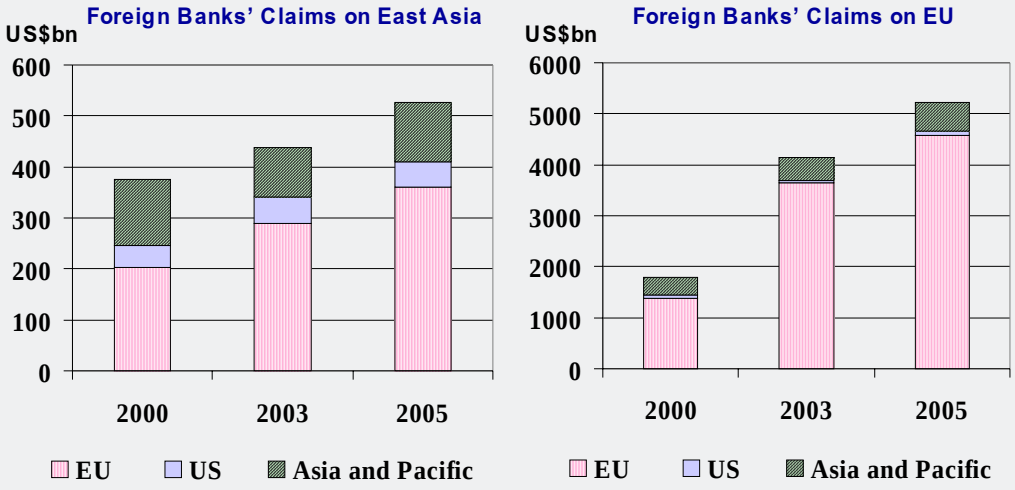


Source: IFS

Bank lending

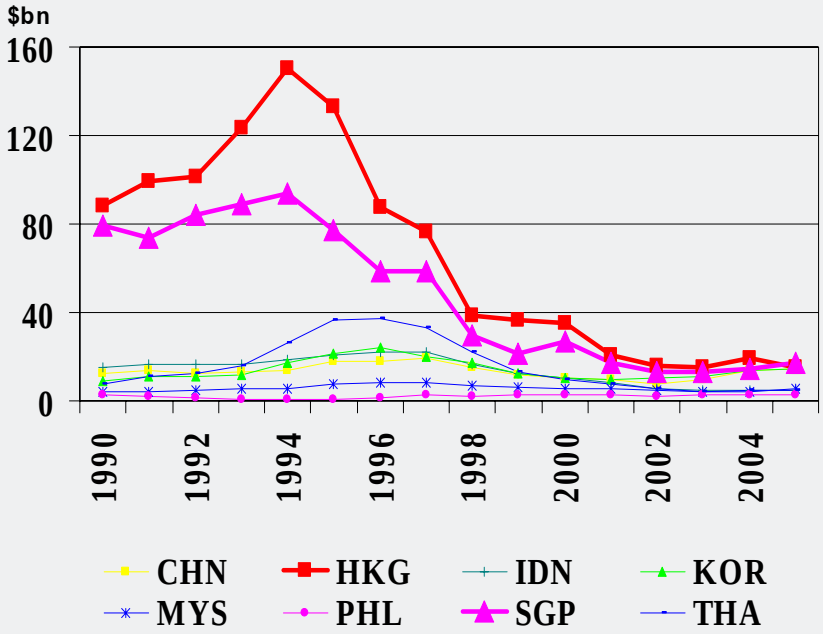
Figure 2.2b suggests that, in terms of cross-border bank loans, East Asian countries more integrated with developed markets than with each other within the region. The left panel shows that most of foreign banks' claims come from outside the region—in particular, the European Union. Only a small portion is from Asia. Furthermore, while foreign bank lending from the European Union has steadily increased since 2000, that from East Asia is relatively unchanged. Part of the reason is due to a substantial decline in international bank loans from Japan—the major creditor to other East Asian countries—during 1994-98 as seen in Figure 2.3c. On the other hand, the right panel of Figure 2.2b points to a much higher degree of European Union integration in that a significant share of international bank claims is from European Union countries.

Figure 2.2b: East Asia is more integrated with developed markets, especially with Europe, in terms of bank lending



Source: BIS

Figure 2.2c: Japan's consolidated claims on East Asian countries



Source: BIS

Portfolio investment

Figure 2.2d suggests that, for financial integration in terms of cross-border portfolio investment, East Asia still lags behind the European Union. For interregional and intraregional portfolio investment in 2003, East Asian intraregional investment records 110 billion U.S. dollars, which is approximately 9 and 5 percent of the total portfolio inflows into and outflows out of East Asia respectively. These figures are well below the European counterparts: intraregional portfolio flows register 6058 billion dollars which is approximately 61 and 64 percent of the total portfolio inflows into and outflows out of the European Union respectively. Furthermore, for cross-border flows of portfolio investment to East Asia, 476 and 415 billion dollars are from North America and the Europe respectively—about four times more than 110 billion dollars originated within the region.

Figure 2.2d: Intra-regional portfolio investment in East Asia is far below that in EU

Intraregional and Interregional Portfolio Investment in 2003

Source	NAFTA	EU15	East Asia	ROW	Total
Destination					
NAFTA	545	1776	747	1620	4688
EU15	1614	6058	804	1455	9931
East Asia	476	415	110	165	1166
ROW	823	1292	566	492	3173
Total	3458	9541	2227	3732	18958

USD billion

Source: Asian Bond Monitor

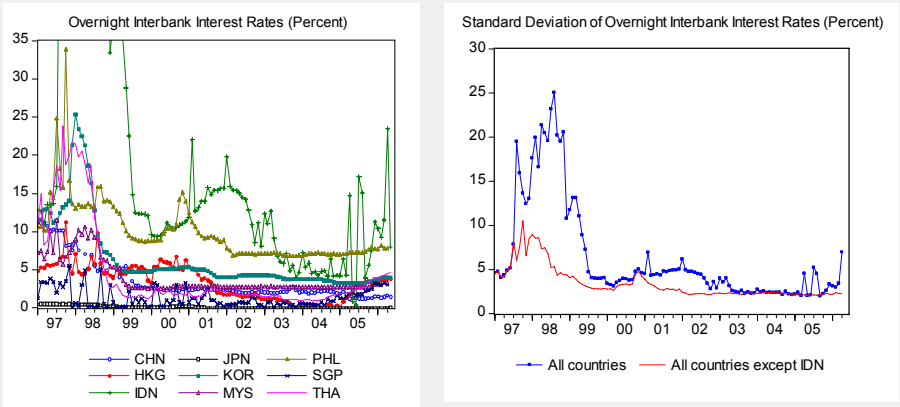
In sum, this section finds that, based on quantity measures, the degree of financial openness of East Asian countries is relatively low compared with that of the European Union. Furthermore, global and regional financial integration of East Asian countries have developed at different paces, with intraregional integration falling behind that of integration with the global financial system. The next section still deals with the same question of how much East Asian countries are financially integrated, but the analysis will be based on price measures.

2.3. Price-based Measures

The third group of financial integration measures is concerned with prices and their behavior. It eventually comes to a check of the law of one price, which states that assets with identical risks and returns characteristics should be priced identically regardless of where in the financially integrated area they are transacted. How it works is that financial integration acts to bring greater opportunities for arbitrage, which in turn reduces discrepancies in prices of assets with similar characteristics toward zero. This definition of financial integration is adopted by the European Central Bank (Beale et al., 2006; Trichet, 2006). In practice, however, there are few assets that are exactly identical, and consequently the strict application of the law of one price as a test for financial integration may be of limited use. For those assets which have broadly similar characteristics, instead of looking at whether they are identically priced, one should take into account differences in systematic risk factors and other important characteristics and then assess whether price dispersion is warranted. In other words, variation in prices of assets with similar profiles should decrease as financial integration advances. In what follows, various price measures that may help determine the extent of East Asian financial integration are introduced, namely, overnight interbank interest rates, stock prices, and foreign exchange rates.

A market that is more subject to arbitrage—and consequently where price movements can better indicate the degree of financial integration—is the money market. The left panel of Figure 2.3a depicts overnight interbank interest rates of East Asian countries since 1997. The right panel shows the development of cross-sectional standard deviation of the interbank rates, where the difference between the line

Figure 2.3a: Cross-country standard deviation of money market rates has decreased



marked with squares and the solid line is that the latter excludes the Indonesian rate whose volatility is extreme. What is significant here is that, even with Indonesia excluded, dispersion in the overnight interbank rates declines after peaking during 1997-98 and stabilizes subsequently around three percent. Nonetheless, when compared with the European Union experience, where the standard deviation converges toward zero basis point following the introduction of the euro in 1999 (Beale et al., 2004), there seems to be room for further integration in the overnight interbank market in East Asia.

Another type of markets in which price movements could indicate the degree of financial integration is stock markets. Figure 2.3b shows cross-country correlations between stock markets since 2001—presumably with the effects of the 1997 financial crisis had died down—in two subperiods, namely 2001:05-2003:12 and 2004:01-2006:05. The two matrices display correlation coefficients between stock price indices, with shaded cells indicating a rise in correlation over time. The main finding is that cross-country linkages between East Asian stock markets have become tighter. In particular, markets in Korea, the Philippines, Singapore, and Thailand move closer together, while China still exhibits negative comovement with the other markets. Furthermore, correlation between each Asian market (except that of China) and the U.S. market is quite high recently, and even though the degree of comovement declines in some instances, it still remains above 0.70. In sum, with the exception of China, East Asian stock markets have moved closer with each other and also with the U.S. market.

Figure 2.3b: Degree of stock price comovement increases over time

Pairwise Correlation Matrices for Stock Prices

2001:05 - 2003:12

	CHN	HKG	IDN	JPN	KOR	MYS	PHL	SGP	THA	US
CHN	1.00									
HKG	0.47	1.00								
IDN	-0.36	0.46	1.00							
JPN	0.66	0.89	0.21	1.00						
KOR	-0.38	0.32	0.62	0.24	1.00					
MYS	-0.51	0.30	0.82	0.11	0.81	1.00				
PHL	0.26	0.81	0.58	0.75	0.52	0.49	1.00			
SGP	0.18	0.83	0.56	0.76	0.66	0.61	0.92	1.00		
THA	-0.53	0.31	0.91	-0.03	0.52	0.72	0.39	0.37	1.00	
US	0.46	0.90	0.36	0.86	0.38	0.29	0.85	0.87	0.16	1.00

2004:01 - 2006:05

	CHN	HKG	IDN	JPN	KOR	MYS	PHL	SGP	THA	US
CHN	1.00									
HKG	-0.33	1.00								
IDN	-0.45	0.92	1.00							
JPN	-0.12	0.80	0.77	1.00						
KOR	-0.30	0.91	0.88	0.94	1.00					
MYS	-0.31	0.85	0.81	0.60	0.75	1.00				
PHL	-0.52	0.86	0.96	0.73	0.85	0.77	1.00			
SGP	-0.48	0.95	0.97	0.83	0.93	0.81	0.93	1.00		
THA	-0.09	0.82	0.73	0.72	0.78	0.67	0.67	0.73	1.00	
US	-0.01	0.84	0.80	0.81	0.82	0.70	0.73	0.78	0.82	1.00

correlation coefficient greater than previous period

Sources: CEIC and authors' calculation

In the foreign exchange market, bilateral exchange rate interdependence among East Asian currencies can be assessed by examining the degree to which exchange rates move together. The left panel of Figure 2.3c, constructed using monthly data on exchange rates between 1986 and 1995, displays a matrix of pairwise correlation coefficients for any two currencies. Data for the USD/CNY exchange rate from CEIC were not available during this period. The right panel is similarly constructed for a later sample period. To exclude the effects of volatility during 1997-98 and to include only the period up to the 2005 renminbi revaluation, a sample between 2001 and mid 2005 is selected. The darker shaded cells indicate correlation coefficients that are greater than 0.50; the lighter shaded cells indicate those between 0.25 and 0.50. These two matrices show Asian currencies moved together to a greater extent during 2001-05 relative to 1986-95.

What happened after the revaluation of the Chinese yuan? Figure 2.3d shows the time series of the nine East Asian exchange rates vis-à-vis the U.S. dollar between July 2005 and June 2006. A glance at the figure reveals that there appears to be three groups of exchange rate patterns. The currencies of Indonesia, Korea, Malaysia, the Philippines, Singapore, and Thailand exhibit a broadly similar pattern. Those of China and Hong Kong can be put in another group. The Japanese yen, on the other hand, moves differently relative to the other currencies. Figure 2.3d implies that after the renminbi revaluation there appears to be groups of currencies where members of the same group exhibit a closer comovement than members of different groups; Figure 2.3d' display the pairwise correlation matrix for the post-renminbi revaluation episode.

Figure 2.3c: Degree of exchange rate comovement increases over time

Pairwise Correlation Matrices for Exchange Rates

1986:01-1995:12

	CHN	HKG	IDN	JPN	KOR	MYS	PHL	SGP	THA
CHN									
HKG		1.00							
IDN		-0.80	1.00						
JPN		0.74	-0.85	1.00					
KOR		-0.19	-0.25	0.11	1.00				
MYS		0.26	-0.06	0.25	-0.58	1.00			
PHL		-0.71	0.77	-0.61	-0.10	0.16	1.00		
SGP		0.86	-0.93	0.84	0.13	0.13	-0.83	1.00	
THA		0.56	-0.78	0.92	0.28	0.20	-0.56	0.77	1.00

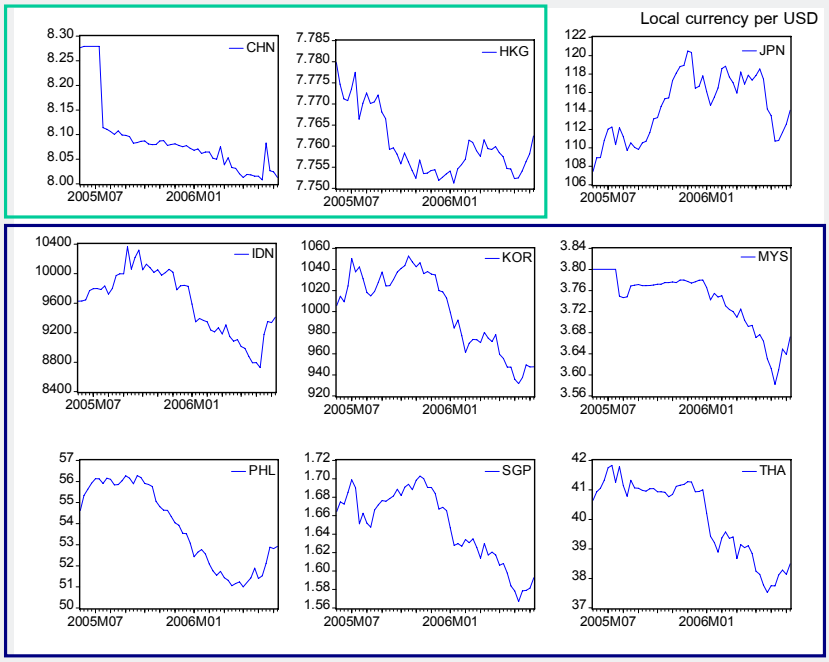
2001:01-2005:07

	CHN	HKG	IDN	JPN	KOR	MYS	PHL	SGP	THA
CHN	1.00								
HKG	0.21	1.00							
IDN	-0.09	0.29	1.00						
JPN	0.09	0.50	0.42	1.00					
KOR	0.27	0.38	0.37	0.82	1.00				
MYS	1.00	0.20	-0.09	0.07	0.24	1.00			
PHL	-0.17	-0.48	-0.45	-0.75	-0.70	-0.16	1.00		
SGP	0.16	0.37	0.41	0.92	0.91	0.13	-0.70	1.00	
THA	0.04	0.48	0.58	0.84	0.81	0.02	-0.71	0.86	1.00

correlation coefficient > 0.50
correlation coefficient ∈ [0.25, 0.50]

Sources: CEIC and authors' calculation

Figure 2.3d: Exchange rate movements after CNY revaluation



Source: CEIC

Figure 2.3d': Degree of exchange rate comovement after CNY revaluation

Pairwise Correlation Matrices for Exchange Rates

2005:06 – 2006:06 (weekly data)

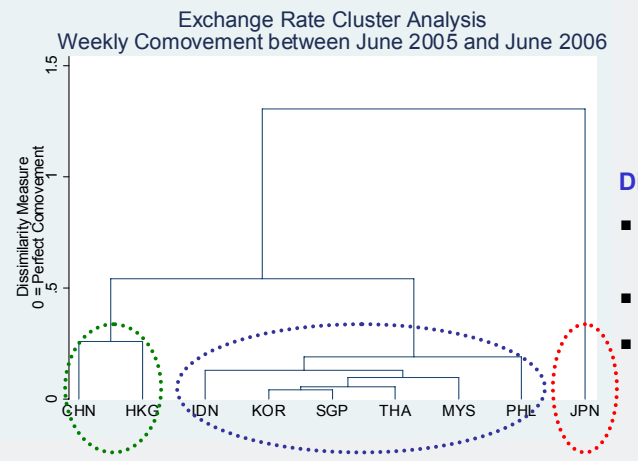
	CHN	HKG	IDN	JPN	KOR	MYS	PHL	SGP	THA
CHN	1.00								
HKG	0.74	1.00							
IDN	0.40	0.23	1.00						
JPN	-0.53	-0.66	-0.21	1.00					
KOR	0.51	0.29	0.91	-0.13	1.00				
MYS	0.64	0.39	0.80	-0.09	0.88	1.00			
PHL	0.62	0.53	0.87	-0.57	0.84	0.71	1.00		
SGP	0.56	0.27	0.89	-0.03	0.96	0.92	0.78	1.00	
THA	0.63	0.43	0.89	-0.21	0.95	0.91	0.86	0.94	1.00

correlation coefficient > 0.50
correlation coefficient ∈ [0.25, 0.50]

Sources: CEIC and authors' calculation

A statistical method can be used to further explore the grouping of currencies. Cluster analysis is a method that classifies objects into different groups (see Box 2a for details). The analysis may reveal associations and structure in data which are not previously evident by looking at simple graphs. Figure 2.3e shows a cluster tree that graphically presents which currencies can be grouped together. The results confirm what is seen in Figure 2.3d: the currencies of Korea, Singapore, Thailand, Malaysia, Indonesia, and the Philippines belong to the same group. In addition, Figure 2.3e reveals the Korean won and the Singaporean dollar have the greatest degree of association. If a group of three is to be formed, then the Thai baht is a third member to join the Korean won and the Singaporean dollar. This group further admits the Malaysian ringgit, the Indonesian rupiah, and the Philippine peso as the last member. Meanwhile, the Chinese yuan and the Hong Kong dollar form another group, as their movement patterns are close enough together but rather different from that in the first group. Finally, the movement of the Japanese yen is so unique that it forms a group of its own. In sum, both Figures 2.3d and 2.3e tell us that exchange rate comovements of East Asian countries are not uniform and that East Asian exchange rate integration is not homogenous.

Figure 2.3e: Certain countries are more integrated with each other than with the rest



Distinct groupings exist

- **KOR, SGP, THA, MYS, IDN, PHL**
- **CHN, HKG**
- **JPN**

Sources: CEIC and authors' calculation

Box 2a: Cluster Analysis

Cluster analysis is a statistical method that classifies observations into different groups by measuring the "distance" between objects and arranging them in groups according to their mutual closeness. The analysis may reveal associations and structure in data which are previously not evident by looking at simple graphs.

A first step in cluster analysis is to select a *distance measure*, and which is to be used depends on what kind of data we are looking at. For examples, if our objects are points scattered along the x-axis, then one simple distance measure between x_1 and x_2 is $|x_2 - x_1|$. In the two-dimensional space, a distance between (x_1,y_1) and (x_2,y_2) is the square root of $(x_2 - x_1)^2 + (y_2 - y_1)^2$. In other cases, the distance between two objects can be a subjective measure. For example, students can be asked to assess how different between various courses on a scale from 0 (identical) to 10 (very different). In Figure 2.3e, given that each of our objects is a time series of the exchange rate between an Asian currency and the U.S. dollar and given that the objective is to find which currencies tend to move together, our similarity measure between two objects can be correlation between the two time series, and a *dis*similarity measure can be defined as one minus the correlation coefficient. Hence the dissimilarity measure in Figure 2.3e ranges from 0 (perfect comovement) to 2 (complete opposites).

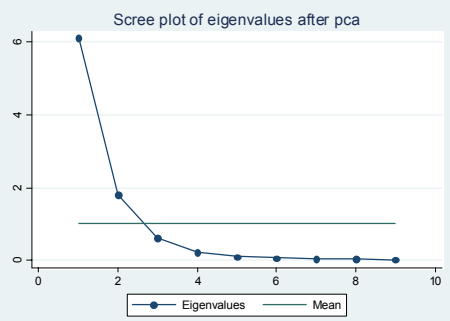
Having selected a dissimilarity measure, we must now determine which two points in a given pair of clusters a dissimilarity measure is to be applied. There are various procedures available, and the most common ones are given below. *Single-linkage clustering* computes the dissimilarity between two groups as the minimum dissimilarity between members of the two clusters. *Complete-linkage clustering* uses the farthest pair of members. In *average-linkage clustering* the dissimilarity between clusters is calculated using cluster average values. Given that the single-linkage method usually produces long/thin clusters and the complete-linkage method produces tight/compact clusters, Figure 2.3e is based on the average-linkage method.

A basic algorithm for cluster formation is as follows. At the outset every object is considered a cluster. Then the two objects with the smallest distance are combined into a cluster. Next, the object with the shortest distance to either of the first two members is considered. If that third object is closer to a fourth object than to either of the first two, the third and fourth objects become the second cluster; if not, the third object is added to the first cluster. The process is repeated until all objects are in the same cluster. This process creates a hierarchy of clusters and is called the agglomerative hierarchical clustering.

In Figure 2.3e a final output is shown in the form of a *dendrogram*. The bottom of the cluster tree displays each object, from which a vertical line extends up. These lines are connected to show that observations under the connected horizontal lines belong to the same group. The height of the vertical lines provides information about the strength of the clustering, whereby shorter lines indicate a low level of dissimilarity. Note that different dendrograms could result depending on which dissimilarility measure, linkage clustering, or clustering algorithm is used.

The analysis of exchange rate comovement above is based on bilateral relationship: Figure 2.3d' shows a matrix of pairwise correlation and Figure 2.3e is constructed based on those correlation coefficients. In addition to bilateral relationship between pairs of currencies—for example, between the baht and the won, or between the baht and the rupiah—the relationship between the baht and East Asian currencies as a whole is also of interest. Furthermore, correlation analyses should be carefully interpreted, as there may be some factors other than financial integration driving comovement. Consequently, another statistical analysis could also be useful to corroborate previous results. Principal component analysis is a method used to reduce the dimensionality of a data set (see Box 2b for details). A certain number of principal components account for most variations in the data. Consequently the correlations between the variables and the principal components indicate the degree of comovement of each object and all objects as a whole.

Figure 2.3f: Does East Asian exchange rates move together uniformly?



Correlations between individual currencies and PC1 and PC2 scores for East Asia

CHN	HKG	IDN	JPN	KOR	MYS	PHL	SGP	THA
0.73	0.54	0.89	-0.37	0.94	0.91	0.92	0.93	0.93

CHN	HKG	IDN	JPN	KOR	MYS	PHL	SGP	THA
-0.47	-0.73	0.28	0.82	0.29	0.21	-0.14	0.33	0.15

- **Lack of positive correlation between emerging East Asia's exchange rate comovement and JPN, and to a lesser extent CHN, HKG, and PHL**
- **Confirms differences in how East Asian countries manage their currencies**
- **Corroborates cluster analysis**

Box 2b: Principal Component Analysis

Principal component analysis is a statistical method used to reduce the dimensionality of a data set. The goal is to explain the variations of a set of variables by a smaller number of components. The first principal component is a linear combination of the variables that accounts for the largest amount of the variations. Thus, an analysis on the first component potentially approximates the original set of variables. Furthermore, we also obtain *factor loadings*—correlations between the original variables and the principal component—which indicate the degree of comovement of each original variable and all variables as a whole. Suppose we have a simple example of two countries, where East Asia consists of Korea and Thailand. Our goal is to construct a representation of East Asian currencies and find the correlation between each currency and that statistical representation.

Before we proceed to solve the problem, a brief mathematical introduction is useful. Suppose x is a vector of n dimension. A principal component is given by $\alpha'x$ where α is a vector of constants. Although the number of principal components we can get will be as large as the number of dimensions, we are only interested in the first few components, as the goal of principal component analysis is dimensionality reduction. Let the first component be denoted by $\alpha_1'x$. We want to maximize $var(\alpha_1'x) = \alpha_1'\Sigma\alpha_1$, where Σ is the covariance matrix of x, subject to the normalization $\alpha_1'\alpha_1 = 1$ (otherwise there are no unique α_1). Differentiating $\alpha_1'\Sigma\alpha_1 - \lambda_1(\alpha_1'\alpha_1 - 1)$, where λ_1 is the Lagrange multiplier, yields the first order condition $(\Sigma - \lambda_1 I)\alpha_1 = 0$ where I is the identity matrix. That is, λ_1 is an eigenvalue of Σ and α_1 is the eigenvector corresponding to λ_1. In sum, the first principal component is the eigenvector corresponding to the largest eigenvalue of the variance-covariance matrix of the original vector of observations. In the figure above, PC1 is the eigenvector that explain most of the variation in the data.

After computing the principal components, we also want to know how many components to keep. The relative magnitudes of the eigenvalues indicate the amount of variance they account for. This follows from $var(\alpha_j'x) = \alpha_j'\Sigma\alpha_j = \alpha_j' \lambda_j\alpha_j = \lambda_j\alpha_j'\alpha_j = \lambda_j$, where j denotes the j component and the second equality follows from the first order condition. Consequently, a plot the eigenvalues, known as a scree plot, can helps us determine the number of components to keep. The scree plot in Figure 2.3f, which shows all the eigenvalues in their decreasing order, suggests that we may want to keep the first two principal components, which explain most of the variation in the data.

Once we obtain the principal components and decide how many to keep, we can then calculate the correlations between each of the variables and the components, as shown in the two tables in Figure 2.3f.

Figure 2.3f displays correlations between individual currencies and the first two principal components for East Asia. It would be most straightforward for the analysis to have only one principal component representing East Asian currencies, but a test, called a scree plot, displayed in the left of Figure 2.3f suggests the first two components be included, since together they explain most of the variation in the data. The tables on the right show correlations between individual currencies and the first and second principal components for East Asia, respectively. Of all correlation coefficients between the first component and each individual currency, only the Japanese yen displays negative correlation. This finding supports Figure 2.3d where the pattern of the Japanese currency is rather different from the other currencies, and Figure 2.3e where the yen is shown to have much dissimilarity with the rest of the East Asian currencies. For correlation coefficients between the second component and each individual currency, the Chinese yuan, the Hong Kong dollar, and the Philippine peso exhibit negative correlation. Note that the yen is not negatively correlated with the second component. In principal component analysis the second component explains the variation in the data left unexplained by the first component, and each consecutive component is constructed to maximize the variability that is not captured by the preceding components. Since the inverse relationship between the yen and East Asia currencies as a whole is already captured by the first principal component, the second component does not exhibit negative correlation with the yen. Instead, the second component is negatively correlated with the currencies of China, Hong Kong, and the Philippines. This finding also corroborates Figure 2.3e in that these three currencies lie on the outermost, if we do not count the yen, of the cluster tree. Evidence from a simple graph, cluster analysis, and principal component analysis all points toward a nonuniform exchange rate comovements of East Asian countries. That is, no homogeneity is found in East Asian exchange rate movements.

In short, various measures of financial integration based on prices discussed in this section indicate that the degree of East Asian financial integration has increased. The logic behind the use of price variables to measure financial integration is due to the law of one price, which essentially states that assets with identical risks and returns characteristics should be priced identically in the financially integrated area. This implies that, with increasing financial integration, prices should move more uniformly. We indeed find cross-country standard deviation of interbank overnight interest rates decreases over time and that stock prices and exchange rates increasingly move together. The degree of integration is still low relative to that in Europe, however. Dispersion in the interbank rates, though falling, is still relatively high, while exchange rate comovements of East Asian countries are not uniform. Nevertheless, that various prices have increasingly moved together over time is an encouraging sign of the potentiality of further regional integration in financial markets.

3. Financial integration and economic growth

Why should we care for financial integration in the first place? This important question provides the basis for the rest of the paper. The first part of the answer, which is concerned with the role of financial integration in promoting economic growth, is presented in this section.

Before we proceed, it is important to be aware that empirical evidence yields diverse conclusions about the growth effects of international financial integration. Quinn (1997), using his own measure of capital account openness, reports a positive association between capital account liberalization and long-run growth. Klein and Olivei (1999) report a positive relationship but one largely driven by the experience of the developed countries in their sample. On the other hand, Grilli and Milesi-Ferretti (1995), Rodrik (1998), and Kraay (1998) find no link between economic growth and financial integration. Prasad et al. (2004) find that there is no strong support for the theoretical argument that globalization delivers a higher rate of economic growth.

If we confine our attention to the East Asian economies, robust growth over the past decade has been a result of fast-growing intraregional trade following the evolution of international division of labor—that is, the fragmentation of vertical supply chains according to each country's comparative advantage within production networks. In this instance, cross-border capital flows in the form of direct investment by multinational corporations play a crucial role in furthering intraregional trade, and this linkage will be examined in details. Other channels through which integrated East Asian financial markets provides an impetus to growth include an efficient transfer of funds between net savers and net borrowers within the region; a broadening scope of international risk sharing that will bring down risk premium and cost of capital; and financial deepening in domestic markets that will lead to higher economic growth. These channels are examined in turn below.

3.1. Financial integration through FDI and trade

The link between FDI and trade is not straightforward as it appears. FDI may be a trade reducing or trade creating depending on the type of FDI and the underlying motives for trade. Lamberte (2005) explains that a capital-rich country may invest in a relatively capital-scarce, labor-abundant economy in pursuit of low wages. In this case, FDI is largely a substitute for trade in the sense that multinational corporations use FDI to create local production and serve the local economy. However, FDI may create trade if its purpose is to use labor-abundant economies as an export platform. For East Asia in particular, Kawai (2005) argues that FDI has stimulated rather than reduced trade, especially intraindustry trade in manufactured products. FDI from Japan and the newly industrialized economies to China and Southeast Asia has played an important role in the development of regional production networks that have been associated with a high and rising degree of intraregional trade in East Asia.

Recent developments in FDI and trade are as follows. According to the 2005 *World Investment Report* published by UNCTAD, FDI in the region of Asia broke records in 2004. The region received $148 billion in FDI—$46 billion more than in

2003—making it the top recipient among developing regions. Among the various subregions of Asia, East Asia remained the preferred target, with a 46 percent gain in FDI inflows. Southeast Asia witnessed a rise in inflows from $17 billion in 2003 to $26 billion in 2004—the steepest increase since the 1997-98 financial crisis. As for trade, the IMF (2006a) finds that intraregional exports (as a share of total exports) rose from an average of 44 percent during 1985-91 to 52 percent during 1999-2004, while intraregional imports also increased from 46 percent to 49 percent over the same period. However, rising intraregional trade shares are partly a direct consequence of fast-growing economies: other things equal, trade among countries with rapid economic growth will tend to rise more quickly than trade among countries where growth is slower. Thus, how can we formally assess whether financial integration through FDI indeed promotes trade?

The gravity model has been a workhorse in international trade that is used to examine determinants of bilateral trade flows. In its basic form, trade between two countries depends positively on the economic sizes of the trading partners, and negatively on the geographical distance between them. In addition to these two variables, others that might contribute to trade may enter the gravity equation—including FDI. However, as Kawai (2005) suggests, there is a potential feedback from trade to FDI: the region's engagement in foreign trade can in turn stimulate FDI activities of multinational corporations. Consequently, simply including the FDI variable in the right hand side of the gravity equation will produce biased estimation. The present paper attempts to remedy this error by using instrumental variables estimation in conjunction with panel data regression (see Box 3 for details on the gravity model and estimation methods).

Figure 3.1a shows estimation results. The top equation has export from country i to country j at year t as the dependent variable. Other variables include countries i's and j's GDP. Distance proxies trade costs, in particular shipping costs and time elapsed. X denote a vector of other variables, including economic variables such as exchange rate volatility and noneconomic variable such as past colonial relation, common language, and shared border. FDI, measuring foreign direct investment to country i from country j, is the variable of interest here. Given that our objective is to assess the role of financial integration in promoting growth, we essentially want to know the size and significance of the FDI coefficient. Nevertheless, as noted above, FDI is possibly endogenous in this equation. We thus have another equation to isolate the part of the FDI variable that is exogenous so that it can be used in the export equation. In the econometric literature the FDI and export equations are known respectively as the first-stage and second-stage equations. In the first-stage equation FDI is regressed on a number of "instruments"—variables that does not affect export directly but is correlated with FDI. In the second-stage equation export is regressed on the fitted value of FDI from the first stage, which is exogenous by virtue of the instruments. Once this is done, we can then test our hypothesis about the FDI coefficient.

Some caveats are in order before estimation results are presented. First, as noted above, FDI can be classified in two types: market-oriented and exported-oriented. Market-oriented FDI aims to set up enterprises to supply goods and services to the local market, whereas exported-oriented FDI is trade creating. Thus, the latter

FDI should be more appropriate for the above analysis, but lack of detailed classification makes such an analysis not feasible. Second, it is possible that, in addition to FDI from country j to country i that is beneficial to export from i to j, FDI from any country k to i also plays a part in driving export from i to j. These reservations notwithstanding, we may get a general idea of how FDI affects trade from the exercise below.

Figure 3.1a: Increased financial integration through FDI is beneficial to intraregional export

(1) $FDI_{ijt} = a_0 + a_1 Instrument1_{ijt} + a_2 Instrument2_{ijt} + \ldots$

(2) $Export_{ij} = b_0 + b_1 GDP_{it} + b_2 GDP_{jt} + b_3 Distance_{ij} + b_4 X_{it} + b_5 FDI_{ijt} + \ldots$ $\quad b_5 > 0?$

First-stage Regression
Dependent variable: FDI

Regressor	Coef.	t-stat	P-value
Last Period's Growth	0.0784	3.69	0.00
Last Period's Inflation	-0.0523	-2.41	0.02

Second-stage Regression
Dependent variable: Export

Regressor	Coef.	t-stat	P-value
FDI	0.1361	2.27	0.02
Exporting Country's GDP	0.7998	3.22	0.00
Trading Partner's GDP	0.6950	4.90	0.00

Data are obtained from CEIC and the *World Development Report* and cover the period 1980-2004. With some entries missing, the total number of observation is 320. Of several specifications that are variously estimated, the simplest model that has all the variables entering the equation significantly with correct signs is presented in Figure 3.1a, where important coefficients are shown. In the first-stage equation, FDI (in log, and deflated with the GDP deflator) is instrumented with the previous period's growth rate and the inflation rate of the receiving country. The intuition behind this choice of instruments is that both variables are correlated with FDI inflows but not directly correlated with the host country's export. The top table of Figure 3.1a confirms that the higher growth or the lower inflation induces inflows of FDI. In the second-stage equation, each trading partner's GDP (in log, and deflated with the GDP deflator) enters the equation positively and significantly as expected. The main message of the table is that FDI indeed plays a positive role for exports. The effect of FDI is not as substantial as that of GDP of trading partners. This is not surprising given that the exporting and importing countries' GDPs represent the contemporaneous supply of and demand for export, both of which are the fundamental determinants. FDI, on the other hand, contributes to export growth by providing infrastructure for export production.

Box 3: Gravity Model of Trade and Panel Instrumental Variables Estimation

The gravity model has been used extensively in international economics to analyze trade between countries. The model is analogous to Newton's law, which states that the gravitational attraction between two bodies is directly proportional to their masses and inversely proportional to the distance between them. In its basic form the gravity equation for trade is given by

$$Trade_{ijt} = b_0 + b_1 GDP_{it} + b_2 GDP_{jt} + b_3 Distance_{ij} + Xb + e_{ijt}$$

where i and j index trading partners and t indexes time. The variable trade represents trade flows between countries i and j. GDP represents economic size. Distance proxies trade costs, for example, shipping costs and time elapsed. X is other economic variables that can affect trade, including shared history or language, as well as a measure of financial integration. The b's are regression coefficients, with b_1 and $b_2 > 0$ and $b_3 < 0$. To assess whether financial integration is beneficial to trade, we test the coefficient of the financial integration variable whether it is statistically greater than zero.

Panel regression is used for estimation of and inference about the coefficient of the financial integration variable. A panel is a cross section of objects that are surveyed periodically over time. Cross-sectional information is reflected in the differences between individual objects; time-series information is reflected in the changes over time for a given object. Panel data regression techniques allow us to take advantage of these two types of information. Note that pooling all the observations and using an OLS regression entail a loss of information because the panel structure of data is ignored, and the resulting OLS estimates will be biased.

There are essentially two types of panel data models. First, the fixed-effects model is given by

$$y_{it} = \alpha + \delta_i + x_{it}\beta + \varepsilon_{it}.$$

Here δ_i can be thought of as a dummy for each individual. The term "fixed-effects" is due to a fixed amount by which the regression line is raised or lowered for each individual. This model is appropriate where each i exerts a fixed effect shifting y_{it} up or down. The fixed-effects model is usually applied to a given set of cross-sectional units, for example, a cross-country study of selected countries. The second type of panel data models is the random-effects model, which is given by

$$y_{it} = \alpha + x_{it}\beta + v_i + \varepsilon_{it}.$$

(Continued next page)

Here the term representing the individual differences v_i is now specified as random disturbances drawn from some distribution (whereas in the fixed-effects model the term representing the individual differences δ_i is a fixed constant). Consequently, an implicit assumption used in a random-effects model is zero correlation between the regressor x_{it} and the individual-specific effect v_i. An example of the context where random-effects model is appropriate is a study of a sample of households drawn from a large population. Given that in the analysis of financial integration and trade the sample consists of a set of predetermined countries, fixed-effects estimation should be appropriate.

In fitting the above panel data models some of the explanatory variables could be endogenous, especially the financial integration variable. That is, apart from the fact that financial integration may increase intraregional trade, increased trade flows can result in a more financially integrated region. In this situation, ordinary least-squares regression produces biased and inconsistent estimates.

Instrumental variables estimation can be used to cope with the endogeneity problem to obtain unbiased estimates. An instrument is a variable that is correlated with the endogenous regressor but does not directly affect the dependent variable of interest. That is, if z, y, and Y respectively denote the instrument, the endogenous regressor, and the dependent variable, then a schematic representation of the relationship between the three variables is given by

$$z \div y \div Y.$$

An estimation procedure using an instrument is done as follows. In the first stage, we regress y on z to obtain $\hat{y}$. This fitted value of y is the part of y isolated by the instrument and thus is exogenous by virtue of instrument exogeneity. We now can use this $\hat{y}$ as a regressor in the second stage where Y is the dependent variable.

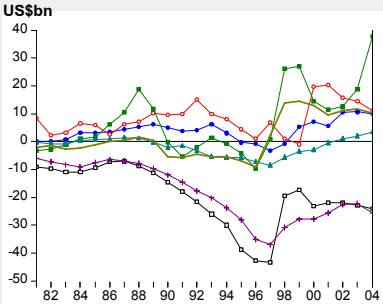
3.2. Other channels by which financial integration in East Asia can promote regional economic growth

In addition to the benefits of financial integration through FDI on trade outlined above, integrated financial markets in East Asia potentially bring about the following economic developments that can catalyze growth in the region. First, closely connected Asian financial markets give rise to an efficient transfer of funds between net savers and net borrowers within the region. Second, a broadening scope of international risk sharing brings down risk premium and cost of capital. Third, financial deepening in domestic markets potentially leads to higher economic growth. These three channels are briefly discussed in turn below.

The integration of capital markets can help to allocate saving and investment more efficiently. The left panel of Figure 3.2a shows that most countries in East Asia have positive saving-investment gaps, some of which have been widening since 1997. In the past few years, Asian investors, both private and public, held public debt securities issued by the U.S. Treasury in an increasing amount. The right panel shows East Asia's holdings of U.S. Treasuries rose substantially between 2000 and 2005, driven mostly by Japan of approximately 660 billion U.S. dollars—a 150 percent increase. In terms of the percentage change, China has accumulated U.S. Treasuries with the fastest growing rate of almost 500 percent over the past six years. Though not of equal size or speed as Japan or China, the other seven East Asian countries also increase their holdings by as much as 80 percent over the same period. These East Asian savings in the form of the U.S. national debt can instead be used to finance local investments. Such savings could have been spent on infrastructure projects and other productive investments in the region as alternatives to U.S. Treasuries that possibly lose their value in the long term given the ongoing global financial imbalances (Disyatat and Tanboon, 2005). This possibility of a switch from U.S. debt to local investment is predicated on developed and well-connected regional financial markets that will facilitate allocation of resources more efficiently.

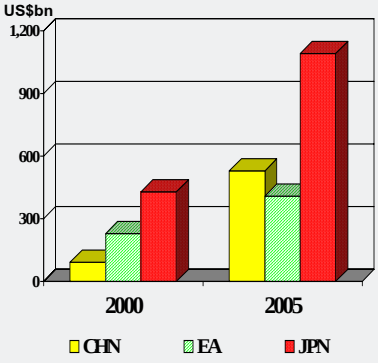
Figure 3.2a: Integrated financial markets should help further channel funds to profitable investment activities in the region

Saving-Investment Gap in East Asia



Source: CEIC

East Asian holdings of US Treasuries



Source: US Bureau of Economic Analysis

Financial integration also provides opportunities for international risk sharing and the consequent benefits of lower risk premium and cost of capital. There is considerable evidence that the cost of equity capital decreases as markets become increasingly integrated. Such a fall in the cost of capital is due to additional possibilities for investors to diversify their portfolios across countries and thus eliminate country-specific risks. This has an important implication because a fall in the cost of capital could transform the net present value of some investment projects from negative to positive, thereby inducing investment and generating higher economic growth. A number of recent studies have analyzed the degree of European equity market integration. Hardouvelis et al. (2006) investigate whether European stock returns are driven by country-specific or by Europe-wide risk factors. One implication is that if the extent to which a country's returns are driven by idiosyncratic risks decrease, then risk premium demanded from that country should fall, leading to a decline in cost of capital. The authors find that the relative importance of Europe-wide factors increased with the probability of joining the European Monetary Union. This suggests a shift from a country specific to a common European pricing, in line with increased equity market integration in Europe. The authors estimate a decrease in the cost of capital related to the increase in equity market integration of between 0.5 and 3 percent, depending on the sector.

In addition, financial integration potentially fosters growth through financial deepening. A number of studies find that the level of a country's financial development has a causal impact on its long-run economic performance; by enhancing the development of the domestic financial system, financial integration has a positive bearing on economic growth. An intuitive illustration of how this works again refers to Figure 3.2a. Suppose that East Asian savings in the form of the U.S. Treasuries can be used to finance local investments instead. Before such savings could have been spent on infrastructure projects and other productive investments in the region, they will be intermediated through regional financial institutions. On the other hand, savings that are siphoned off to the U.S. debt markets would deprive the opportunities for local financial markets to develop, thereby reducing the impact on economic growth. Empirically, De Gregorio (1998) regresses financial development on financial integration and controls for a number of variables. Financial integration is proxied by the ratio of gross capital flows to GDP, a dummy variable that is based on the ratio of gross capital flows to GDP, the Feldstein-Horioka savings-investment correlation coefficient, Euler equation estimates, and deviations from the uncovered interest parity. Financial development is proxied by total loans made by the banking system to the private sector, the value of listed shares as a fraction of GDP, the total value of shares traded in a year over GDP, and a measure of stock market volatility.

In summary, Section 3 discusses various channels through which financial integration is beneficial to economic growth. One way is through cross-border capital flows in the form of direct investment that promote further intraregional trade. Other channels through which financial integration could induce growth include an efficient transfer of funds between savers and borrowers, increasing international risk sharing that reduce risk premium and cost of capital, and financial deepening in domestic markets that will lead to higher economic growth.

4. Financial Integration and Macroeconomic and Financial Stability

Although in theory financial integration should help reduce macroeconomic and financial volatility as it offers better opportunities for risk diversification, so far evidence shows that the full benefit is far from being achieved. In fact, capital account opening has led to increased vulnerabilities and reoccurrence of crisis episodes in several emerging market economies. To assess the effects of further regional financial integration on macroeconomic and financial stability, this section discusses the benefit of financial integration on consumption smoothing and the risk on greater volatility of capital flows and increasing vulnerability to crises, based on theory, existing empirical studies, and implications from the economic and financial structures of East Asian countries. To understand and anticipate potential risks that closer financial integration brings about, factors affecting vulnerability and crisis possibility as well as their recent developments will be also discussed. In addition, regional efforts to increase financial cooperation are highlighted in this section, as they play a key role in helping mitigate potential risks along the process of greater regional integration.

4.1 Benefits on economic stability

Benefits of financial integration on macroeconomic stability can be different for two types of welfare measures: output and consumption. This is because greater capital inflows from financial integration affect production through increasing capital and productivity but affect consumption through increased output and sales of assets. On the other hand, greater choices for domestic consumers and firms to hold foreign assets have a direct effect on risk diversification and hence consumption. Therefore, this subsection will discuss the effects of financial integration on both output and consumption volatility.

Output volatility

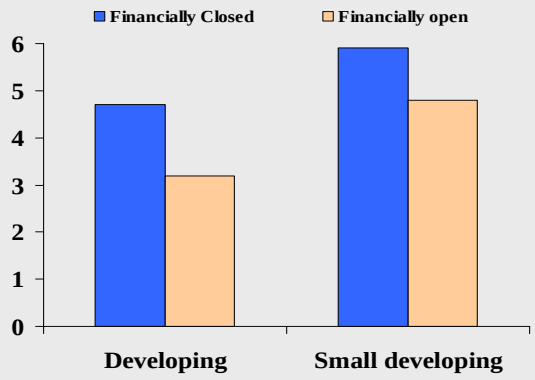
In theory, the effect of financial integration on output volatility is not well-established. On the one hand, greater access to capital should allow capital-scarce countries to diversify their productions. On the other hand, it can also lead to increasing specialization of particular industries based on comparative advantage, and hence exposing countries to some industry-specific shocks. In any case, the positive effect of financial integration on output volatility should be more pronounced in developing economies whose outputs are concentrated in certain industries and subject to sectoral shocks than well-diversified economies.

Up till now, empirical studies have not been able to establish a clear association between financial openness and output volatility, or an association exists depending on the level of financial sector development. Buch, Dopke, and Pierdzioch (2002) find no consistent empirical relationship between financial openness and output volatility in OECD countries. Easterly, Islam, and Stiglitz (2001) explore output volatility of 74 countries over the period 1960–97 and find that lower volatility of output is found in countries with higher levels of financial sector development. However, the results do not indicate that financial openness and volatility of capital

flows have significant impacts on output volatility. O'Donnell (2001) explores the effects of financial integration on the volatility of output growth over the period 1971–94 using data for 93 countries. He finds that a higher degree of financial integration is associated with lower output volatility in OECD countries (with more developed financial sectors) but higher output volatility in non-OECD countries. On the other hand, some studies find openness has a clear-cut benefit or cost.

For developing countries, Gavin and Hausmann (1996) examine their output volatility during 1970–92 and find a positive correlation between the volatility of capital flows and output volatility. However, the September 2002 World Economic Outlook argues that over the period 1975-99, for developing countries, financially open economies are associated with lower output volatility than closed economies (see Figure 4.1a), as the magnitude of inflation and exchange rate shocks is smaller and consequently the impact of shocks on output is more dampened.

Figure 4.1a: Output Volatility in Developing Countries



Note: Standard Deviations of the growth rate of real GDP per capita are calculated for five-year periods and then averaged.

Source: WEO, September 2002

Consumption volatility

Despite the ambiguous effects on output, financial integration has a theoretically unambiguous welfare benefits in terms of consumption volatility reduction. This is because financial integration enhances risk sharing through greater opportunities for investment diversification. The increasing opportunities to hold assets in other countries with different economic cycles provide a channel to lessen a slowdown in consumption during an economic downturn in the domestic economy. That is, financial integration helps delink domestic consumption from the cycles of domestic output.

Various studies in the literature attempting to measure welfare gains from risk sharing adopt dynamic general equilibrium models. Most of the studies try to compare between welfare under financial autarky, where domestic consumption is derived from only domestic output, and welfare with perfect international risk sharing, under which countries are insulated from fluctuations of domestic production. The findings about size of potential welfare gains for the cases of advanced countries are mixed; however, those for the cases of developing countries all point to potentially large benefits. See Prasad, Rogoff, Wei, and Kose (2003) for a summary of studies on welfare gains from international risk sharing.

However, empirical evidence suggests that in several cases, especially for developing countries, the benefits are not clear. This is to a large extent because financial liberalization exposes countries to fluctuations in the international capital markets and also reveals their own fragilities to the outside world (more details in 4.2 and 4.3 below). Kose, Prasad, and Terrones (2003) present stylized facts about macroeconomic volatility in three groups of countries: industrial economies, more financially integrated developing economies (MFIEs), and less financially integrated economies (LFIEs).[3] They find that, while the volatility of output growth has declined in the 1990s relative to the earlier decades, the volatility of consumption growth relative to that of income growth rises in the 1990s for the MFIEs group as shown in Table 4.1a. Here, consumption volatility increases with financial openness, which is measured by the ratio of gross capital inflows to GDP. Further analysis using a panel regression of the ratio of consumption volatility to income volatility, with financial openness as one of the regressors, suggests that the benefits in terms of consumption smoothing occurs only when the level of openness is beyond a particular threshold - around 49 percent to GDP- which is not typically experienced by developing countries.

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[3] MFIs include Argentina, Brazil, Chile, China, Colombia, Egypt, Hong Kong, India, Indonesia, Israel, Korea, Malaysia, Mexico, Morocco, Pakistan, Peru, Philippines, Singapore, South Africa, Thailand Turkey and Venezuela.
LFIs include Algeria, Bangladesh, Benin, Bolivia, Botswana, Burkina Faso, Burundi, Cameron, Costa Rica, Cote d'Ivoire, Dominican Republic, Ecuador, El Salvador, Gabon, Ghana, Guatemala, Haiti, Honduras, Jamaica, Kenya, Mauritius, Nicaragua, Nigeria, Nigeria, Panama, Papua New Guinea, Paraguay, Senegal, Sri Lanka, Syrian Arab Republic, Togo, Tunisia, and Uruguay.

Table 4.1a Volatility of Annual Growth Rates of Selected Variables (Percentage standard deviations, medians of each group of countries)

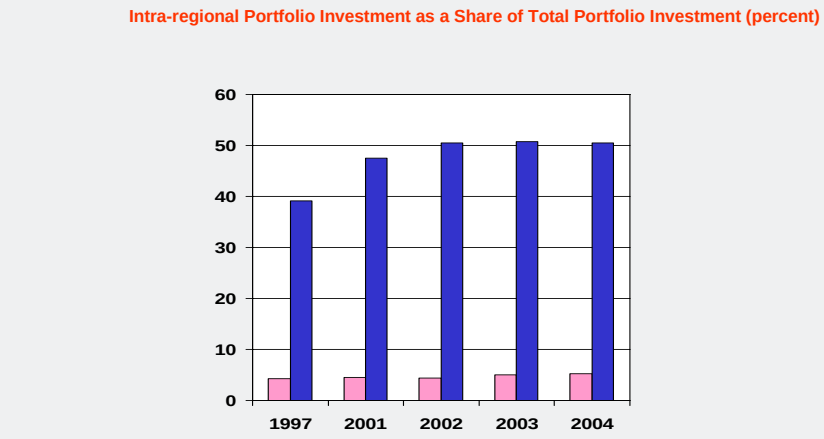
	1960s	1970s	1980s	1990s
Income (Q)				
Industrial countries	2.18	2.99	2.54	1.91
MFI economies	3.60	5.43	5.45	4.78
LFI economies	4.42	9.64	7.56	4.59
Consumption (C)				
Industrial countries	1.47	2.16	1.98	1.72
MFI economies	4.57	4.52	4.09	4.66
LFI economies	5.36	7.07	7.25	5.72
Total Consumption (C+G)				
Industrial countries	1.38	1.84	1.58	1.38
MFI economies	3.95	4.19	3.43	4.10
LFI economies	4.85	6.50	6.34	4.79
Consumption (C+G) to Income (Q)				
Industrial countries	0.75	0.56	0.61	0.58
MFI economies	0.92	0.74	0.76	0.92
LFI economies	0.95	0.68	0.82	0.84

Note: The reported numbers are the within-group medians of those ratios.

Source: Kose, Prasad, and Terrones (2003)

As for East Asia in particular, Kim, Lee, and Shin (2005) find that, compared with European countries, East Asian countries have a lower degree of risk sharing within the region but a higher degree of global risk sharing. However, the low degree of risk sharing is not unexpected, given that East Asian countries except Singapore and Hong Kong hold much lower levels of foreign assets in proportion to GDP compared with the European Union. Furthermore, as shown in Figure 4.1b, East Asian intraregional investment is also at a very low level.

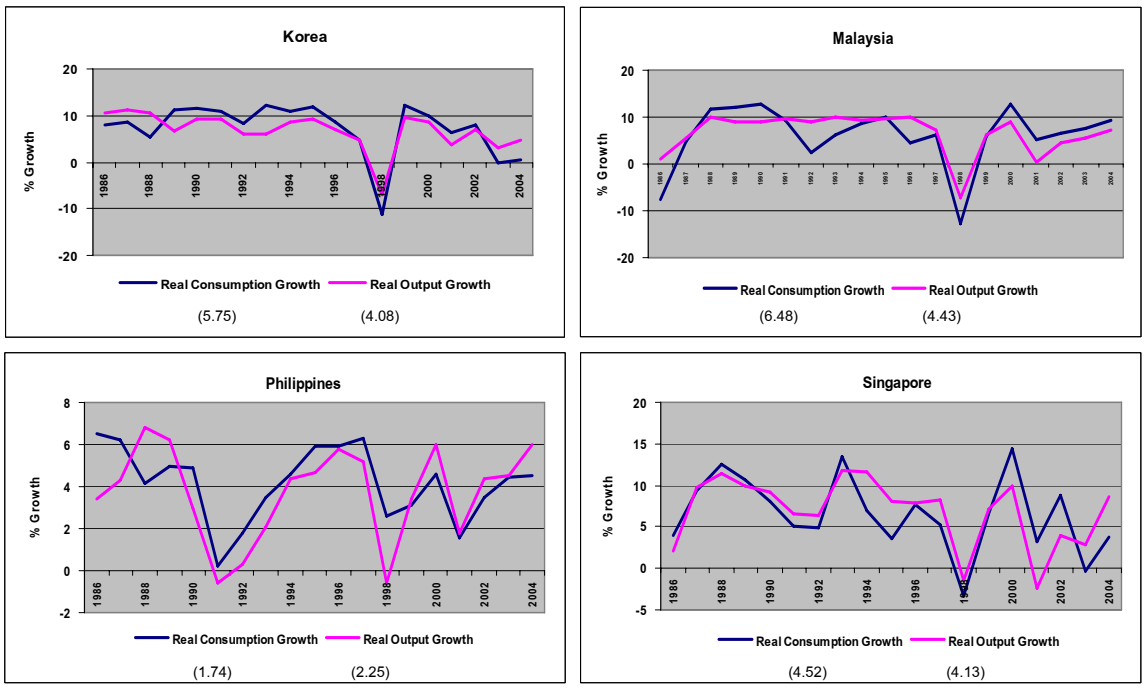
Figure 4.1b: East Asian Portfolio Investment

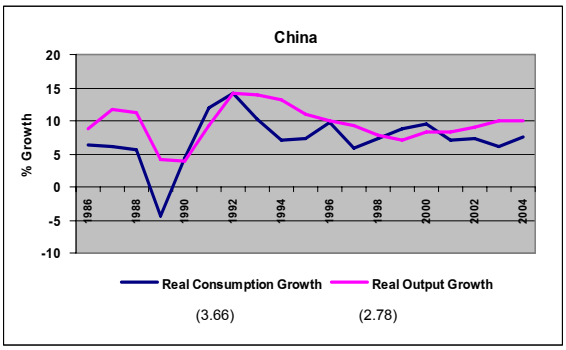


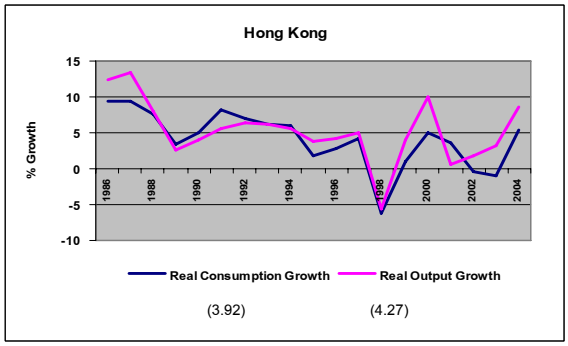
Source: IMF's Coordinated Portfolio Investment Survey

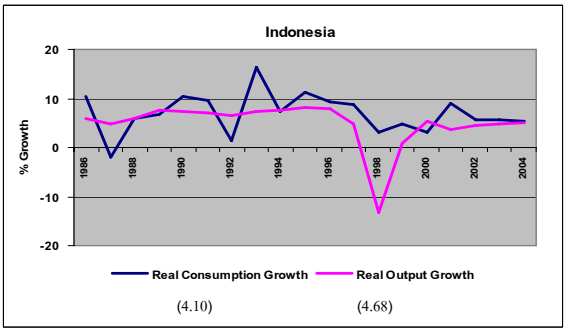
As financial integration helps smooth domestic consumption through delinking it from domestic output, welfare gains from greater regional financial integration should be high in countries where consumption growth is volatile, highly correlated with domestic output growth, and not so correlated with regional output growth. To investigate the potential benefits of financial integration in East Asia in these aspects, this study compares the volatility of real consumption growth with that of real output growth for each country and computes the correlation between them. Cross-country correlation between real consumption growth and real output growth are also calculated. Figure 4.1c shows that, in China, Korea, Malaysia, Singapore, real consumption growth is more volatile than real output growth. In addition, as shown in Table 4.1b, the high correlations between consumption growth and output growth in each of the East Asian countries (except China, Indonesia, and Japan) indicate that domestic consumption growth and domestic output growth are closely linked. Moreover, domestic consumption growth in several countries in the group is not highly correlated with output growth of other regional countries. Therefore, overall, it should be likely that there exists a significant scope for gains from greater risk sharing in East Asia once intraregional capital flows increase more considerably.

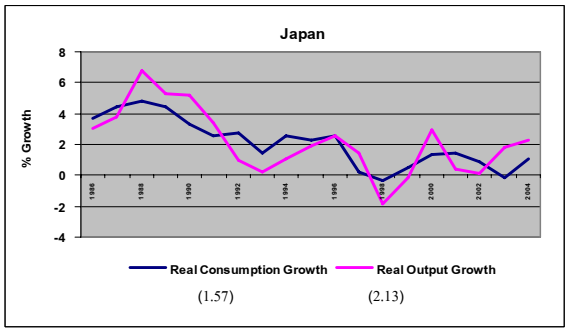
Figure 4.1c: Real consumption and real output growth in East Asia

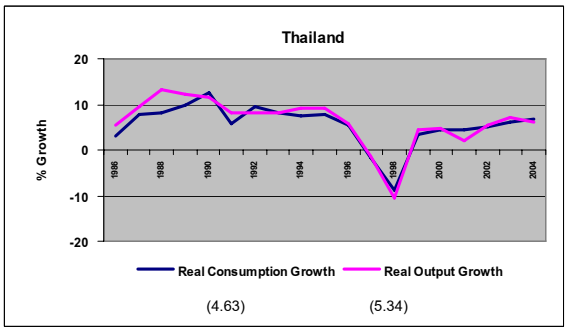


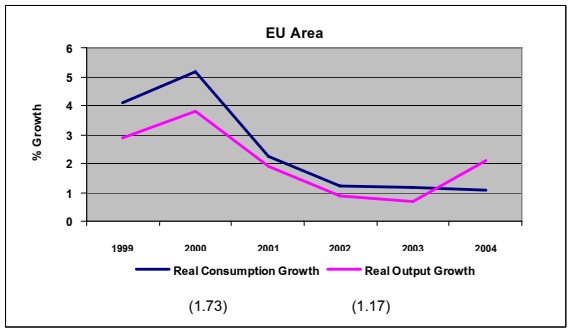


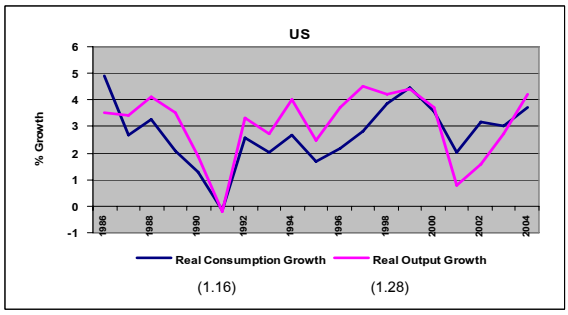












Source: IFS

(.) refers to standard the growth rate between 1986 and 2004

Table 4.1b: Pairwise correlation of domestic consumption and output growth in East Asia during 1999-2005

Real output growth

Real consumption growth	China	Hong Kong	Indonesia	Japan	Korea	Malaysia	Philippines	Singapore	Thailand
China	-0.64	0.61	-0.20	0.17	0.87	0.56	0.30	0.67	-0.29
Hong Kong	-0.01	0.67	0.33	0.55	0.05	0.25	0.31	0.36	-0.30
Indonesia	0.05	-0.75	-0.08	-0.48	-0.65	-0.96	-0.79	-0.92	-0.55
Japan	-0.25	0.23	0.23	0.11	0.17	-0.16	-0.05	0.00	-0.68
Korea	-0.92	-0.03	-0.57	-0.44	0.88	0.06	-0.26	0.18	-0.58
Malaysia	0.25	0.92	0.62	0.90	0.23	0.82	0.85	0.75	0.38
Philippines	0.53	0.76	0.49	0.75	0.10	0.89	0.95	0.78	0.87
Singapore	-0.43	0.50	0.11	0.19	0.79	0.50	0.39	0.57	-0.20
Thailand	0.99	0.25	0.72	0.56	-0.69	0.18	0.54	0.08	0.71

Source: IFS

4.2 Cost on macroeconomic and financial stability

The most direct risks of regional financial integration on economic stability are greater volatility of capital flows and greater crisis possibilities. In particular, these risks can be magnified by increasing regional cross-border flows which can cause abrupt changes in capital flows and crisis contagion. Also, financial product innovation and increasing liberalization may expose investors to new kinds of risks in the financial market.

Greater volatility of capital flows induced by financial integration may lead to changes in interest rates and exchange rates—and hence difficulties in maintaining macroeconomic and financial stability. More importantly, recent history has shown that recurring crisis episodes especially in emerging market economies follow steps toward greater financial integration with the world financial markets. Calvo and Reinhart (2000, 2002) demonstrate that significant negative effects on output are often witnessed in currency crises that typically led to sudden stops or reversals of capital inflows. An example is the reversal of net private capital flows in Thailand which was as high as 26 percent of GDP in 1997-98 (see Table 4.2a). Economic recessions due to crises are also found to be severe in emerging markets, as shown in Table 4.2b by the number months that it takes for GDP to return to the normal level in the tranquil period.

Table 4.2a: Selected Large Reversals in Net Private Capital Flows in 1990s (as a percent of GDP)

Country/Episode	Period	Reversal
Argentina	1982-83	20
	1994-95	4
Chile	1981-83	7
	1990-91	8
Ecuador	1995-96	19
Hungary	1995-96	7
Indonesia	1996-97	5
Malaysia	1993-94	15
Mexico	1981-83	12
Mexico	1993-95	6
Philippines	1996-97	7
Venezuela	1992-94	9
South Korea	1996-97	11
Thailand	1996-97	26
Turkey	1993-94	10

Source: Calvo and Reinhart (1999)

Table 4.2b: Severity of Crises (Average numbers of months that it takes for GDP to reach its norm during tranquil period)

Period	Currency Crises			Banking Crises		
	Latin America	East Asia	Others	Latin America	East Asia	Others
1970-1994	48.1	14.0	9.0	21.6	2.8	7.3
1995-1997	25.4	40.0*	N.A.	8.3	15.0*	N.A.

* Difference from historic mean is statistically significant at standard confidence levels.

Source: Calvo and Reinhart (1999)

4.3 Factors affecting vulnerability and crisis possibility and recent developments

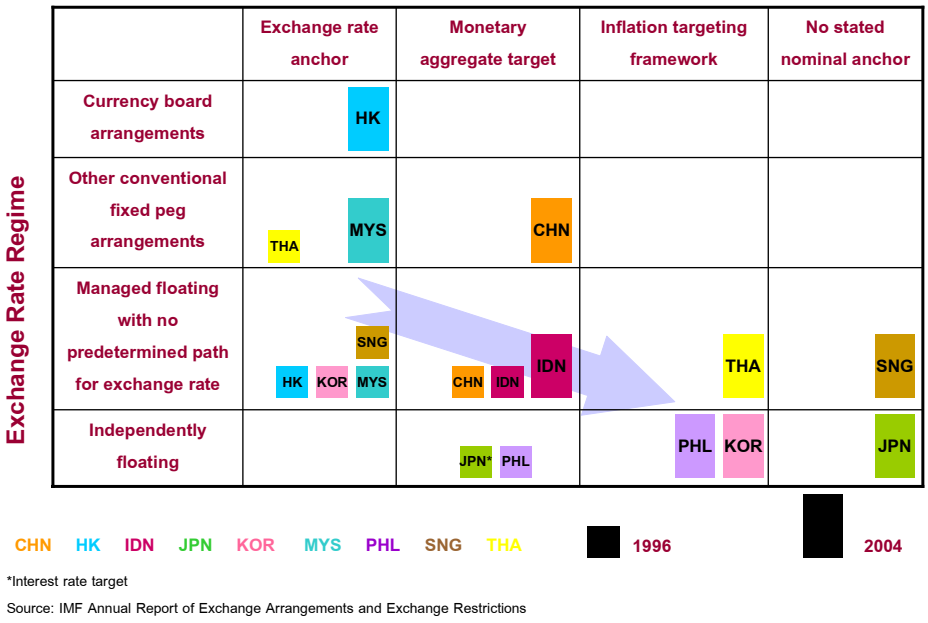
Empirical evidence has shown that the vulnerability to and the likelihood of a capital account crisis is influenced by a broad set of factors including monetary and exchange rate frameworks, composition of capital flows, financial sector development, financial regulation and supervision, and transparency. This section discusses the importance of these factors and their developments since the Asian crisis period.

Monetary and exchange rate frameworks

It is well acknowledged on both theoretical and empirical grounds that developing countries that attempt to maintain a relatively inflexible exchange rate system while progressively liberalizing the capital account often encounter the risk of speculative attacks on their currencies. This is because, with freer capital movements, using the exchange rate to maintain competitiveness and achieve growth targets leaves monetary policy with little autonomy to help maintain macroeconomic stability or to deal with the adverse effects of short-term capital flows. Therefore, if a more open capital account is desired, macroeconomic and exchange rate policy arrangements need to be credible and congruent.

Since the financial crisis in 1997-98, most of emerging East Asian economies have increasingly employed managed float or free float exchange rate regimes—including China and Malaysia which have made an encouragingly very gradual move towards managed float regime since July 2005—and some have adopted inflation targeting (see Figure 4.3a). These changes should make those economies more resilient to greater external risks from further financial integration. As the exchange rate can adjust more in line with underlying economic fundamentals, persistent exchange rate misalignment that leads to excessive current account deficit and the buildup of external debt that makes the economy more vulnerable to shocks can be avoided to a much greater degree. Moreover, a flexible exchange rate helps mitigate the amplification of real shocks, especially productivity shocks, which tend to be persistent, and thus helps dampen the business and asset price cycles. The forward-looking nature of inflation targeting also provides a flexible framework to deal with anticipated risks.

Figure 4.3a Monetary policy and exchange framework in East Asia before and after crisis



*Interest rate target

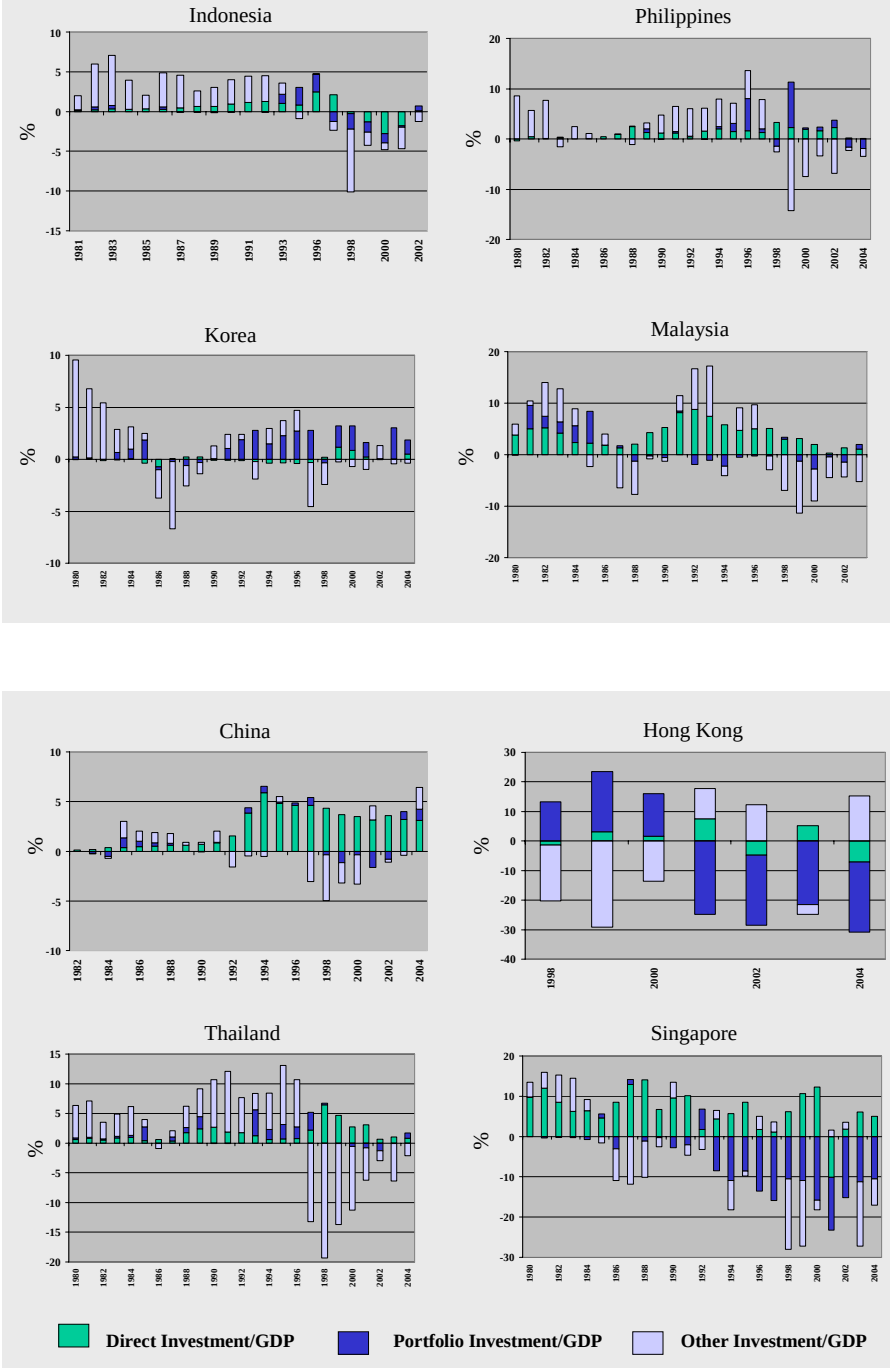
Source: IMF Annual Report of Exchange Arrangements and Exchange Restrictions

Composition of capital flows

From the Asian crisis experience, several empirical investigations point out that the composition of capital inflows and the maturity and foreign currency structure of external debt are related to vulnerability to the risks of currency crises. Frankel and Rose (1996) point out that the structure of capital inflows indicates the crisis likelihood. Reliance more on foreign borrowing and less on foreign direct investment renders the country more vulnerable to the "sudden stops" of capital flows and increases a chance of currency crises. Detragiache and Spilimbergo (2002) find strong evidence that countries with a higher proportion of short-term external debt have a greater chance of having debt crises. This problem is usually associated with weaker macroeconomic fundamentals and country risks that lead to inaccessibility to longer-maturity loans. Moreover, the inability to issue local currency denominated bonds and borrow in local currency in the international capital market also incurs foreign currency risks for the local borrowers.

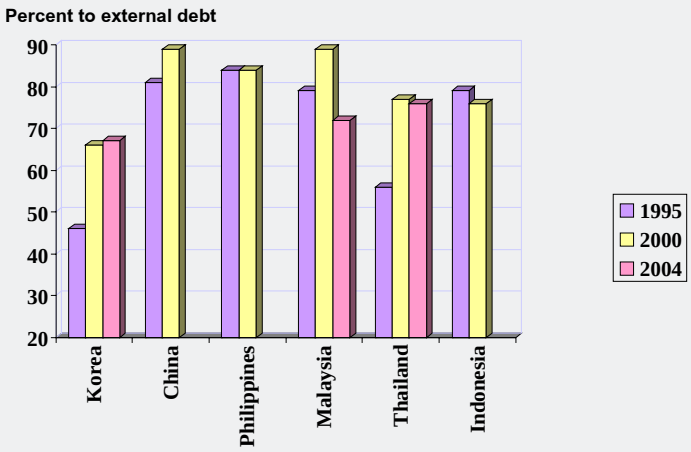
Overall, the outlook for the composition of capital flows has recently been favorable. Since the Asian crisis, Figure 4.3b shows that the composition of net capital inflows into emerging East Asian economies has improved. A significant amount of external debt has been repaid in the years following the crisis. Except for the cases of China and Hong Kong, capital inflows in recent years have been in direct investment and portfolio investment. The proportion of long-term debt in total external debt has recently been well above 60 percent in all emerging markets in the region, as shown in Figure 4.3c. In addition, available data on the foreign currency share of total debt of some selected regional countries have also revealed that the problem of currency mismatches has lessened as shown in figure 4.3d.

Figure 4.3b: Composition of Net Capital Inflows



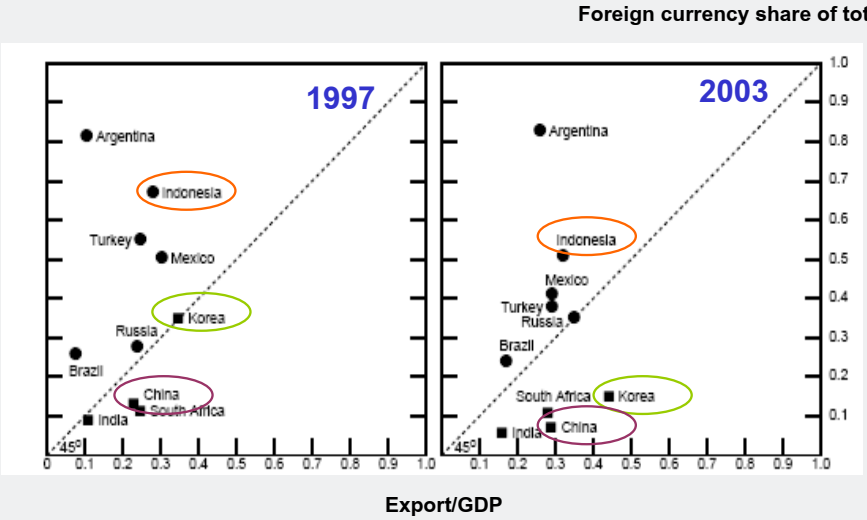
Source: IFS

Figure 4.3c: Ratio of long-term external debt to total external debt



Source: IMF

Figure 4.3d: Currency mismatches in selected emerging countries



Source: BIS, Institute for International Economics

Note: For Thailand, no data on Baht-denominated external debt for 1997 and 2003 were available so total external debt was in foreign currency.

Financial sector development

Liquid and well-regulated capital markets are essential for not only the effective allocation of the savings but also the economy and the region's resilience to domestic and external shocks. Prasad, Rogoff, Wei, and Kose (2003) point out less severity and a fewer number of crises in advanced countries enable them to better protect themselves through a more resilient financial sector. With relatively thin and not well-diversified stock markets, the increase in cross-country financial market correlations poses an increasing risk of financial market bubbles especially in emerging market countries.

Although the banking sector lending remains the most important financial segment, there has been a clear encouraging development in terms of the size of both equity and bond markets in the region. East Asian equity markets have grown drastically since 1997. In terms of market capitalization to GDP, the size of equity market has increased sharply in Korea, Malaysia, Thailand, Hong Kong and Singapore and become more equal with that of the banking sector. The regional bond markets have also witnessed considerable growth over the same period and have begun to play an increasing role in the financial system in all regional economies. However, compared to countries in other regions with similar income per capita, Bond markets in East Asia are still lagging behind in terms of its importance relative to the banking sector and stock markets.(see table 4.3a and figure 4.3e) [4]

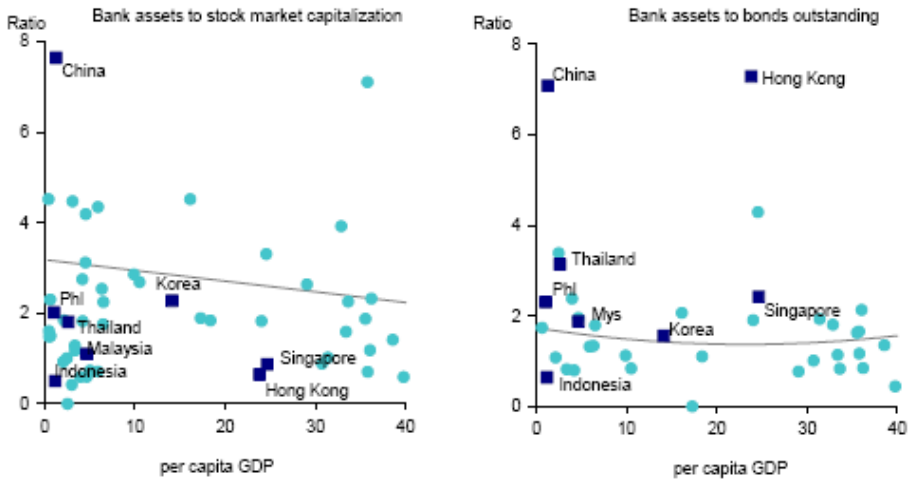
Table 4.3a: Structure of financial system in East Asia

Economy	Bank Asset (% of GDP)		Equity Market Capitalization (% of GDP)		Bonds Outstanding (% of GDP)	
	1997	2005	1997	2005	1997	2005
China	124.4	191.6	11.2	20.9	12.9	28.6
Indonesia	34.3	68.4	36.4	39.8	2.1	27
Korea	67.7	91.9	14.5	89.6	45	74.9
Malaysia	100.6	162.5	93	140.6	56.9	89.7
Philippines	76.5	61.3	51.4	39.3	30.5	35.6
Thailand	79.7	102.1	15.1	69.7	7.1	40.2
Hong Kong	208.2	443.3	238	591.9	26.4	46.5
Singapore	122.7	185.3	111.5	220.3	24.8	68.2

Source: Ghosh (2006)

[4] The biggest constraint which is limited liquidity in the bond market is discussed in section 4.4.2 below.

Figure 4.3e: Importance of bank asset to stock market capitalization and bond outstanding (2004)



Source: Ghosh (2006), benchmarking East Asia economies within the region and with peers within the same income group in other regions.

Financial regulation and supervision

Kaminsky and Reinhart (1999), Arteta, Eichengreen, and Wyplosz (2001) point out that banking and currency crises are highly associated with weak financial regulation and supervision. Without adequate financial institution supervision in place, a premature opening of the capital account could increase the risk of crisis as domestic financial institutions may build up excessive risk. On the liabilities side, firms and financial institutions might borrow excessively from international capital markets. On the assets side, they might extend loans to overly risky investment projects, particularly where government guarantees exist in either explicit or implicit form.

A good prudential regulation and supervision framework is essential in assessing and managing risks that arise from financial integration. The important elements of this framework include an adoption of risk-based supervision, as well as prudential regulation and supervision addressing cross-sectoral and cross-border financial transactions. Effective risk-based supervision is necessary to help manage the risks from recently developed and sophisticated financial products as well as new investors. As large domestic and regional financial conglomerates are prone to contagion within groups, consolidated supervision is also needed. Improved cross-

border supervision and cooperation among regional supervisors would be progressively more important as cross-border linkages develop.

In this regard, East Asian financial institution supervisors have made progress in introducing risk-based supervision. They have chosen to adopt the Basel II framework which provides a risk-sensitive prudential and supervisory framework. However, the implementation varies in terms of approaches, targeted institutions, and timing. Also, before the implementation, there are issues that need to be addressed, such as capacity to supervise banks on a risk-based approach and the need to upgrade domestic banks. In addition, with different approaches among regional countries, regional cooperation in implementing Basel II is important as home and host supervisors need to make sure that different capital requirements do not lead to regulatory arbitrage or unexpected risk migration between countries**.**

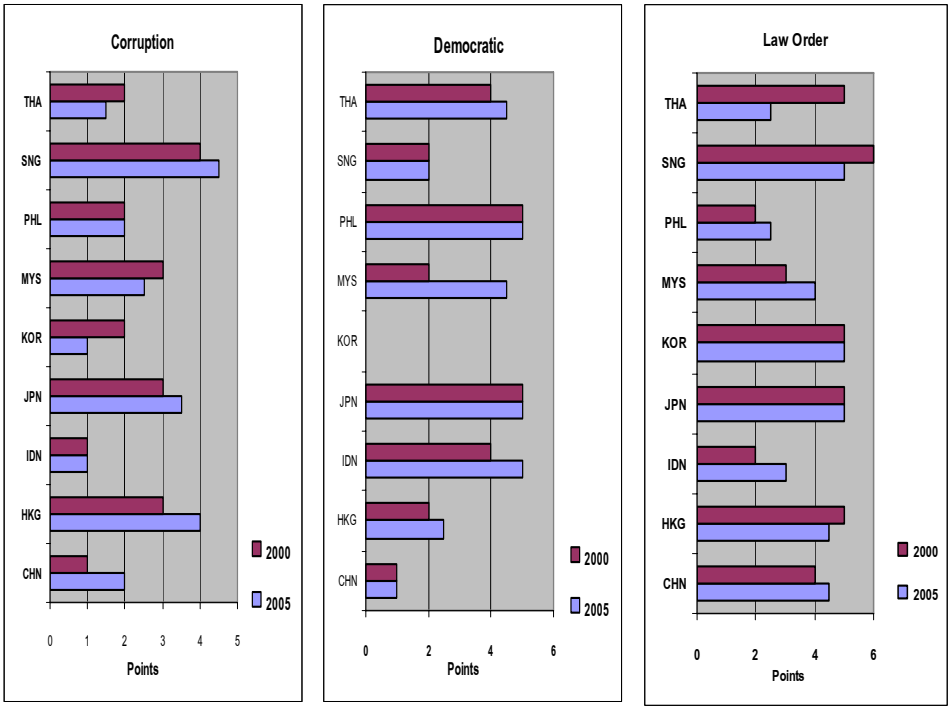
Transparency

Qualitative and quantitative evidence suggests that the degree of transparency of both the government and the private sector has a significant impact on the extent that a country can benefit from international capital flows. Gelos and Wei (2002) find that international equity investment such as portfolio investment from international mutual funds tends to avoid less transparent countries relative to the prediction of an international capital asset pricing model. The authors find that, if a country's measure of lack of transparency exceeds the sample median, its weight in the international funds could be reduced by as much as 39 percentage points relative to the weight in the world market portfolio. Evidence also indicates that the degree of transparency affects the extent a country faces with volatility of capital flows. For example, herding behavior by international investors tends to be more severe in countries with a lower degree of transparency, and capital flight during a financial crisis tends to be more severe in less transparent countries.

The degrees of transparency as being partly reflected by corruption, democratic accountability, and law and order, vary across East Asian countries according to the International Country Risk Guide (ICRG). Among those elements, developing countries in the region fair worse in terms of corruption. Since 2000, there have been overall improvements in China and Indonesia whereas Thailand has performed worse in terms of corruption and law and order. There are rooms for improvements for emerging market economies in the group.

In sum, this section highlights crucial factors that affects risks that might arise from greater regional financial integration. Overall, since the Asian crisis, there have been several positive developments that have helped improved external vulnerabilities. These include the moves toward more credible monetary and exchange rate framework, improvements of the composition of capital inflows, increasing importance of the capital markets, and the introduction of risk-based supervision framework. However, it is found that the sizes of the bond markets are still relatively small, and issues on cross border supervision have to be addressed, and transparency should be improved further.

Figure 4.3f: Transparency indicators in East Asia



Source: International country risk guide (ICRG): The score is on the scale of one to six where one is least favorable and six is most favorable. Corruption measure is concerned with actual or potential corruption in the form of excessive patronage, nepotism, job reservations, 'favor-for-favors', secret party funding, and suspiciously close ties between politics and business. Democratic accountability is awarded on the basis of the type of governance enjoyed by the country in question. Law and order is an assessment of the strength and impartiality of the legal system as well as popular observance of the law

4.4 Role of regional financial cooperation in enhancing macroeconomic and financial stability along the process of financial integration

In recent years, regional efforts to expand and strengthen regional financial cooperation and build up regional financial infrastructure in East Asia have been highly notable, with the aim of promoting economic growth and reducing economic and financial instability. The focus of East Asian financial cooperation to enhance macroeconomic and financial stability is on two areas: (1) establishing a framework for crisis prevention and resolution through regional surveillance and liquidity support; and (2) building domestic and regional financial infrastructure particularly for long-term financing.

Current regional arrangements include both cooperation among central banks and those led by finance ministries. The former comprises the Asian Consultative Council (ACC), the ASEAN Central Bank Forum (ACBF), the Executives' Meeting of East Asia-Pacific Central Banks (EMEAP), the South East Asian Central Banks (SEACEN), and the Conference of Governors of Central Banks of South East Asia, New Zealand and Australia (SEANZA). The purposes of these fora range from core central bank activities (e.g. EMEAP), a vehicle for communication between regional central banks and the board of multilateral institution (e.g. ACC), and training centers

(e.g. SEACEN and SEANZA).On the other hand, regional arrangements by finance ministries include the Asia-Pacific Economic Cooperation (APEC), the Association of Southeast Asian Nations (ASEAN) as well as the ASEAN Plus China, Japan and Korea (ASEAN+3), and the Asian-Europe Meeting (ASEM). These different fora have common areas of work in surveillance, financial market development, capacity

Box 4.4a: Summary of Regional Financial Cooperation in Asia

Central Bank Cooperation

- ASEAN Central Bank Forum (ACBF): ACBF was established in November 1997 to serve as a policy-dialogue forum for 10 ASEAN central banks with the objectives to promote cooperation and understanding among member central banks in the area of economic and finance and strengthen ASEAN efforts in addressing its challenges with a view to promoting price stability, sound financial system, and sustainable economic growth in the region.
- Executives' Meeting of East Asia-Pacific Central Banks (EMEAP): EMEAP was established in 1991 as a cooperative organization of 11 central banks and monetary authorities in the East Asian and Pacific region, with a primary objective to strengthen the cooperative relationship among its members.
- South East Asian Central Banks (SEACEN): SEACEN was established in 1966 to enhance capacity building of central banks in Asia Pacific via research and training activities. Currently, it comprises 15 member central banks.
- The South East Asia, New Zealand and Australia (SEANZA): SEANZA was established in 1956 to assist the development and training of central bank staff, promote understanding of the problems of developing countries and foster friendly relations and technical cooperation among its 20 members.

Finance Ministry-led Cooperation

- Asia-Pacific Economic Cooperation (APEC): APEC Finance Ministers' Process was established in 1994 as a forum to exchange views and information among 21 members on regional financial developments and to pursue cooperative programs to promote trade expansion and financial sector development and liberalization.
- Association of Southeast Asian Nations (ASEAN): ASEAN Finance Ministers' Process was established in 1997 for consultations on macroeconomic and financial matters to monitor changes in the global economy and, later on, to pursue financial integration mandated by the ASEAN Leaders.
- Association of Southeast Asian Nations Plus China, Japan and Korea (ASEAN+3): ASEAN+3 Finance Ministers Process was established in 1999 with an aim to broaden and deepen financial cooperation in East Asia, including an exchange of views and establishment of regional financing facility.
- Asia-Europe Meeting (ASEM): ASEM Finance Ministers' Process was established in 1997 as a venue for policy dialogue and consultations on macroeconomic issues focusing on the issues of mutual interest between finance ministers from Asia and Europe.

building, liquidity arrangement, banking supervision, and payment and settlements systems. The total number of member economies in all those arrangements is 27. Table 4.4b below shows that Indonesia, Malaysia, the Philippines, Singapore, and Thailand are members of all of the above arrangements. Korea is in all but ACBF and ASEAN. China and Japan are in all but ACBF, SEACEN, and ASEAN. Hong Kong is in only EMEAP, SEAZA, and APEC.

4.4.1. Crisis prevention and management framework

The Asian currency and financial crises have revealed not only structural economic and financial fragilities in crisis-hit countries but also the risk of relying too heavily on limited domestic resources and the existing multilateral facilities at the global level. In addition, in terms of incentives, regional arrangements may be better than multilateral arrangements due to a closer relationship in the region as well as the regional nature of crisis contagion. In what follows, the two main features of the crisis prevention and resolution framework are discussed, namely surveillance and liquidity support.

Regional surveillance

With greater interdependence in trade and finance and with the experience of crisis contagion in the region, there is obviously a strong case for strengthening regional surveillance mechanism. An effective regional surveillance system is essential not only because it helps countries safeguard themselves against potential cross-border risks, but also because it is necessary for appropriate deployment of a liquidity support mechanism in time of crisis. At present, all of the arrangements outlined above have the element of embedded surveillance function in the forms of economic review and policy dialogues. Economic review includes information sharing about domestic, regional, and global economic and financial conditions, and candid discussion about relevant issues. Regional policy dialogue refers to discussion between policymakers on policy and related issues. So far regional surveillance under those fora is undertaken during the forum meeting, most of them with the frequencies of twice a year, once a year, or on a need basis (see Table 4.4 a).

In addition to regional financial arrangements, international financial institutions which undertake regional surveillance as part of their routine works to support lending and technical assistance have recently begun to recognize the importance of regional cooperation in terms of surveillance mechanism. The International Monetary Fund (IMF) has showed its willingness to coordinate the works in these areas according to the IMF's "Managing Director's Report on Implementing the Fund's Medium-Term Strategy." The Asian Development Bank (ADB) is a newcomer in regional surveillance; it has set up an infrastructure for ASEAN and ASEAN+3 processes. However, the ADB emphasizes on regional financial architecture, including regional financing and exchange rate arrangements.

One important question here is why regional surveillance is needed in the presence of the routine surveillance of international financial institutions, most notably the IMF. At the country and regional levels, the IMF surveillance system alone has not been adequately effective due to the following reasons. First, an unclear

separation between lending and surveillance functions can produce incorrect incentives and reduce the effectiveness of the system over time. According to Ball (2003):

Working to reach agreement on a program and to restore confidence, there may be incentives and pressures on the Fund to be overoptimistic in its surveillance of the risks. Once it has agreed the program and disbursed the loan, the Fund as the subsequent monitor of performance may face pressures and incentives that prevent it from stepping back to provide a candid assessment of the sustainability of the program framework.

Second, the IMF surveillance process has been called into question regarding correct and early problem identification as well as firm actions to prevent crises, particularly following the Asian crises in 1997-98 and the Argentinean crisis in 2002. Understanding about cross-border linkages, spillovers, and systemic crises related to socioeconomic characteristics may require specific knowledge and inputs from regional experts and monitoring system.

In principle, there are three important steps for regional surveillance. In the first step, information is collected and then shared in a transparent manner between regional economies. The second step involves frank evaluation of macroeconomic and financial conditions among member economies. The third step is concerned with "peer review" and "peer pressure" to suggest policy actions and reforms to lower risks and vulnerabilities. However, the present regional surveillance systems are still not effective and each of the above steps needs further improvement. The present systems focus on exchanging views on macroeconomic development but are short of financial stability type surveillance. The existing systems in the region are rooted in the implicit noninterference policy; they need to establish a mechanism that would encourage each country to provide objective assessment for its peers. In addition, there are usually homogenous views about various aspects of economic and financial development among the regional authorities.

A more effective mechanism could be in place by including financial stability surveillance, and by adding independent assessment (such as expert group reviews or think-tank research) and cross-regional surveillance with other regional groupings to gain different views about the international economic and financial development. Better interface between regional surveillance and the IMF surveillance to benefit from each other's comparative advantage should also be emphasized. Moreover, some studies—for example, Institute for International Monetary Affairs (2005)—propose a regional secretariat as an independent agency in charge of regional surveillance activities to provide recommendations that are fair and independent.

Table 4.4.1a: Comparison of Financial Cooperation in Asia

	CENTRAL BANK COOPERATION				FINANCE MINISTRY-LED COOPERATION			
	ACBF	**EMEAP**	**SEACEN**	**SEANZA**	**APEC**	**ASEAN**	**ASEAN+3**	**ASEM**
1. Member								
Indonesia, Malaysia, Philippines, Singapore, Thailand	X	X	X	X	X	X	X	X
Korea		X	X	X	X		X	X
China, Japan		X		X	X		X	X
Australia, Hong Kong, New Zealand		X		X	X			
Brunei	X		X		X	X	X	X
Cambodia, Myanmar	X		X			X	X	X
Lao PDR, Vietnam	X			X		X	X	X
Mongolia, Nepal, Sri Lanka			X	X				
Papua New Guinea			X		X			
Taiwan, China			X		X			
Bangladesh, Iran, Macau, Pakistan, India				X				
Fiji			X					
Canada, Chile, Mexico, Russia, US					X			
EU-25								X
2. Structure								
Governors' Meeting		once a year	once a year	biennial				
Deputies' Meeting	once a year	twice a year	once a year		once a year	once a year	three times a year	once a year

	CENTRAL BANK COOPERATION				FINANCE MINISTRY-LED COOPERATION			
	ACBF	**EMEAP**	**SEACEN**	**SEANZA**	**APEC**	**ASEAN**	**ASEAN+3**	**ASEM**
Working Level	on a need basis	*WGFM: four times a year;* WGBS, WGPS: twice a year			on a need basis	on a need basis	on a need basis	
3. Area of Works								
Financial Market Development		X (ABF)			X	X	X (ABMI)	X
Payment and Settlement system		X						
Banking Supervision		X						
Surveillance	X	X	X	X	X	X	X	X
- Economic Review	X	X			X	X	X	
- Policy Dialogue	X	X	X	X	X		X	X
Capacity Building		X	X	X	X	X	X	X
- Training		X	X	X	X	X	X	
- Research			X				X	X
Liquidity arrangement	X (ASA)	X (EMEAP Repo)						
4. Communications								
Internal Newsletter		semi annual basis	quarterly basis					
Confidential Network		X			X			X
Website		X	X		X	X	X	X
Press Release		X	X		X	X	X	X

Source: Multilateral Cooperation Division, Bank of Thailand

Regional liquidity support

Countries can generally resort to three choices of financing prior to or during crisis to prevent adverse consequences and restore confidence: international reserves accumulation, international financing mechanisms, and regional liquidity arrangements.

International reserves accumulation

International reserves accumulation is the first natural cushion against shocks as it builds up liquidity and confidence as well as better credit ratings. However, as discussed in Disyatat and Tanboon (2005), it also has several sizable drawbacks. They include costs of sterilization, loss of interest income as reserves are kept in the forms of safe but low rate of return bills, opportunity cost from not using them for more productive uses, and negative effects on central bank balance sheets especially when the domestic currency appreciates.

International financing mechanisms

An important international financing mechanism is provided by the IMF which has acted as the international lender of last resort. Under the IMF lending program, member countries facing balance of payments problems can apply for loan facilities. These include Stand-By Arrangements (SBA) for short-term problems, the Extended Fund Facility (EFF) for more protracted problems which requires fundamental reforms to the structure of the economy, and the Supplemental Reserve Facility (SRF) for very short-term financing on a large scale, motivated by the sudden loss of market confidence experienced by emerging market economies in the 1990s.

However, the experiences from the crises have demonstrated that the programs have some shortcomings. First, strict conditionalities that usually include fiscal austerity, interest rate hiking, as well as other conditions such as privatization could be too harsh for macroeconomic and financial adjustments. Second, the amount of financing, which is tied to the quotas of members, may not sufficiently reflect their financial needs. This is crucial for a number of emerging market economies whose quotas are still underrepresented. At the same time, lending decision is also influenced by the interest of countries with large amount of quotas. Third, entering a program does not automatically shore up market confidence, particularly if the market does not view that IMF policies and programs are credible.

In response to the problems, the IMF sets up another insurance facility, the Contingent Credit Lines (CCL) for countries which have a good track record of economic performance and policies but desire to “insure” themselves against crisis contagion. However, for four years after the establishment, the CCL has never been used by any member country, even with reduction in surcharge rates and fees. The well-known reasons include its costliness (with a time based surcharge of 150 basis points after the first year), and the demanding prerequisites for joining the facility, including the absence of balance of payments difficulties, positive assessments on progress in limiting external vulnerability, and a satisfactory economic program. Nonetheless, the most important reason for the facility not to be ever used is that

subscribing to the CCL might send negative signal about the economic conditions to the market.[5]

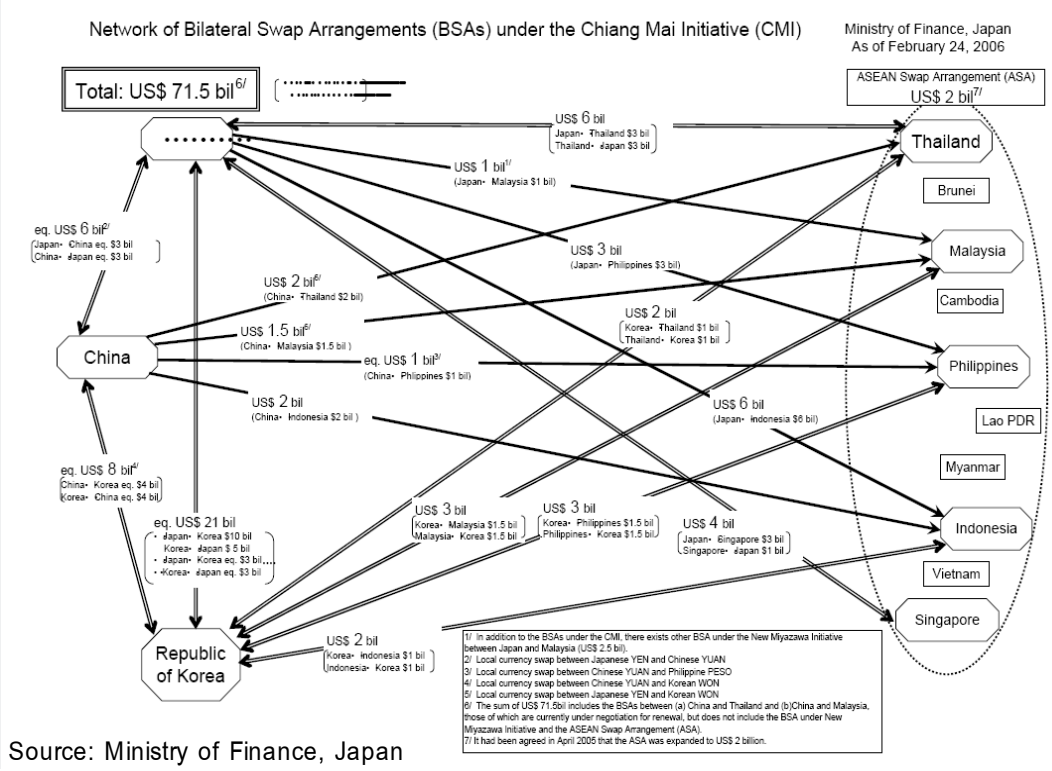
Regional liquidity arrangements

With drawbacks and limitations of international facilities, the ASEAN+3 has expressed the need to build up regional financing arrangements. The Chiang Mai Initiative (CMI) was set up with the objective to help maintain balance of payments and short-term liquidity for regional economies. The funds under the CMI consist of the ASEAN Swap Arrangement (ASA) among ASEAN countries and the Bilateral Swap Arrangements (BSAs) between pairs of countries in the group. Initially established three decades ago, the ASA currently stands at US$ 2 billion and each member country can draw up to twice its contribution without conditionalities. Loans have to be repaid within six months with the renewal possibility for another six months. On the other hand, BSAs, which currently stand at US$ 75 billion, are in the forms of both US dollar-local swaps and local-local swaps. Initially only 10 percent of the funding arrangements could be withdrawn without the IMF conditionality; however, the upward adjustment to 20 percent was approved in May 2005. The amount provided by the BSA is available for the maximum period of six months. The rest depends on the conditions of IMF assistance to keep the moral hazard problem at a low level. The network of the swap arrangements under the CMI is shown in Figure 4.4a. The amount of funding has increased significantly from US$ 37 billion in 2005 to US$ 75 billion in 2006. Although, the possible drawing amount for each country is not likely to be sufficient for providing enough cushioning against large and abrupt capital withdrawals, such regional cooperation shows an undoubted collective commitment to crisis prevention.[6]

[5] In terms of crisis resolution, the IMF has also been active in designing mechanisms to facilitate debt restructuring. One such successful mechanism is the proposed Collective Action Clauses (CAC) which helps ensure cleaner debt restructuring process that should benefit emerging countries. So far the clauses themselves do not affect bond pricing.

[6] For the case of Thailand, the maximum amount of withdrawal is US$ 6.6 billion, which is modest compared with the IMF rescue package for Thailand during the 1997-98 crisis of US$ 17.2 billion.

Figure 4.4.1a: Network of regional liquidity arrangements



Source: Ministry of Finance, Japan

The most recent development about the CMI was the adoption of collective decision-making procedure for the swap activation. This move enables swap providing countries to simultaneously and promptly provide liquidity support to any parties involved in BSAs. In the long term, to increase effectiveness of the CMI, three areas of cooperation will need to be further strengthened and developed. First, the pool of funding arrangements could be enlarged by increasing the amount of existing bilateral commitment, creating new BSAs (for example, among ASEAN countries), and transforming one-way BSAs to two-way BSAs. Second, to reduce the moral hazard problem as well as dependence upon the IMF conditionality, the ASEAN+3 economic surveillance mechanism could be further integrated into the CMI framework. Capabilities to detect irregularities and deploy swift remedial policy actions are crucial for improving the effectiveness of the arrangements. The establishment of the Group of Experts (GOE) and the Technical Working Group on Economic and Financial Monitoring (ETWG) is a welcomed move in this aspect. The GOE would serve as an independent economic assessment vehicle for this region, while the ETWG would play an important role in developing the early warning system to facilitate early detection of irregularities. Finally, multilateralization of the CMI could be the next step to further enhance the CMI's effectiveness.

4.4.2 Long-term financing

Over-dependence on short-term foreign funds and mismatch of currencies following financial liberalization in the early 1990s, the inability to issue local currency bonds in the international capital market, and heavy reliance on the banking sector as the main intermediation all have prompted East Asian countries to foster long-term financing sources especially domestic and regional bond markets. Motivated by the Asian crisis lessons as well as the widening saving-investment gap in East Asia in the years after the crisis, the EMEAP group of regional central banks has established the most prominent development in this area of cooperation, namely the Asian Bond Fund initiative. As of now, two Asian Bond Funds have been initiated with the objective to recycle Asian saving for Asian investment.

The first Asian Bond Fund (ABF1) was launched in 2003 to invest in dollar denominated bonds issued by Asian sovereign or quasi-sovereign entities in EMEAP members. Even though the initial funds were small, its significance lies in the beginning of the opportunities for member countries to invest their reserves in bonds issued by other member countries. Though a significant step, the regional bond market in US dollars might not reduce risk of currency mismatches if domestic firms borrow in US dollars to access global portfolios and to get longer maturities. Also, good firms may still prefer access the offshore market and still render the local market without liquid issues.

Therefore, the following Asian Bond Fund 2 (ABF2), launched in 2005, invests in local currency bonds issued by sovereign and quasi-sovereign entities in EMEAP economies (other than Japan, Australia, and New Zealand). It comprises two types of funds, a Pan-Asian Bond Index Fund (PAIF) and a Fund of Bond Funds (FoBF). The PAIF is a single bond fund investing in sovereign and quasi-sovereign local currency bonds issued in eight EMEAP economies. The FoBF has a two-tiered structure with a parent fund investing in eight country subfunds, each of which invests in local currency sovereign and quasi-sovereign bonds issued in their respective markets. It is also intended to help enhance both domestic and regional bond market infrastructure, as it contains an important element of “learning by doing,” which enables EMEAP members to identify in detail significant market impediments that were not previously assessed.

Overall, the ABF2 has helped increase some inroads in broadening participation of investors in the Asian bond markets. However, the significant contribution has been more in identifying and removing market impediments. The process has already helped ease various market impediments, both cross-border and local. Examples include the removal of all restrictions on non-resident hedging activities and the withholding tax exemption for non-resident investors on the interest income received from investment in ringgit-denominated debt securities onshore in Malaysia (Leung, 2005).

Somewhat parallel to the Asian Bond Fund, the ASEAN+3 finance ministers also created an Asian Bond Market Initiative (ABMI), aiming to develop efficient and liquid bond markets and contribute to the mitigation of currency and maturity

mismatches. The ABMI focuses on facilitating access to the domestic market through a wider variety of issuers and enhancing market infrastructure to foster bond markets in Asia. Major efforts include (1) creating a regional guarantee facility, a regional settlement system linkage, and a regional credit rating agency, (2) enhancing disclosure of information and impediment reduction, (3) improving related regulations and enhancing market supervision, and (4) providing incentives for investors such as an introduction of withholding taxes.

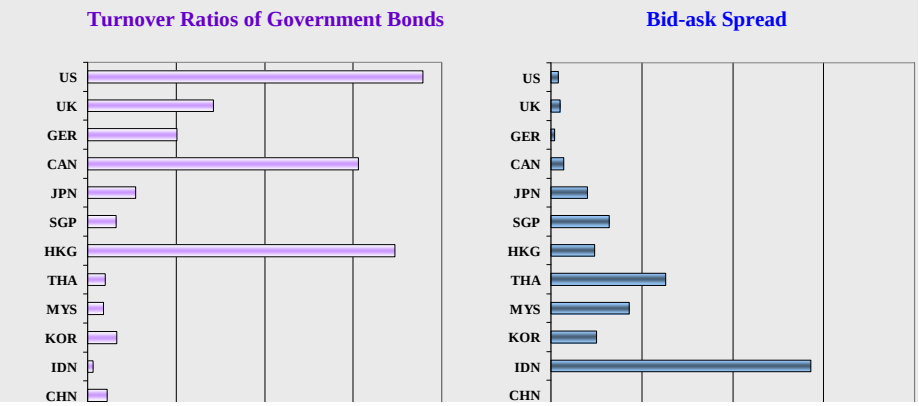
The AMFs and the ABMI initiatives have been endorsed by a number of fora. The Asian Cooperative Dialogue (ACD), which has a broad group of Asian members, has endorsed both initiatives. The focus of this forum is on gathering further political support, considering the prospect of extending participation in the above initiatives to include South Asian countries, and providing technical supports on demand and supply generating as well as infrastructure building. In addition, APEC finance ministers have also given supports in regional bond market development. They have set up an initiative under APEC to enhance the efficiency of bond markets through promoting securitization and credit guarantee markets.

Until now, the region's bond markets have grown considerably since the crisis with the outstanding amount of US$ 1.5 trillion as of 2005. Nevertheless, except for Hong Kong and Korea, the expansion of domestic bond markets has been accounted for by government bond issuances, largely for the purpose of bank restructuring (see Table 4.4.2a) So far, limited liquidity in the secondary markets has been the biggest problem on the bond market development in East Asia. This problem is more significantly pronounced in East Asian countries as indicated by much lower turnover ratios and much higher bid-ask spreads than those in developed countries(see figure 4.4.2a)

Table 4.4.2a: Structure of bond market in East Asia

Economy/Region	1997 % of GDP			2004 % of GDP		
	Gov	Corp	Fin	Gov	Corp	Fin
China	7.1	0.7	4.5	14.9	0.6	9.5
Indonesia	0.0	0.0	0.0	19.8	1.5	1.1
Korea	4.9	10.3	10.0	25.2	23.4	34.9
Malaysia	19.4	20.8	16.8	38.2	38.0	13.9
Philippines	22.3	0.1	0.0	28.4	1.2	0.0
Thailand	0.2	6.0	0.1	22.4	12.3	5.4
Hong Kong	7.5	18.8	0.0	9.7	37.4	0.0
Singapore	13.6	11.2	0.0	41.2	32.4	0.0

Figure4.4.2a: Liquidity indicators in the bond market (2004)



Going forward, the above cooperation will be important for enlarging and strengthening capital markets in East Asia with a shift from government-driven to market-driven forces and enhance market depth and liquidity. To achieve that, several measures need to be further enhanced including encouraging diverse participants, employing asset securitization, improving transparency, developing derivatives markets, enhancing corporate governance, and establishing a regional credit rating agency.

1) More diverse participants with a variety of transaction needs and investment horizons would help promote liquidity. Policies to increase the role of institutional investors including pension funds, insurance companies, and asset management firms are crucial for enhancing demand in the regional capital markets. In particular, Pension fund reform should significantly help increase the flow of long-term institutional savings and benefit the overall financial market development. These reforms include encouraging the privately funded pensions and reducing state-sponsored plan, providing greater choices between defined benefit and contribution schemes, and allowing pension funds to employ better risk management methods.

2) Asset securitization offers an additional financial instrument that would help facilitate bond market development and improve risk management in the financial system. This is because it provides a new funding source for capital constrained corporations as it involves the repacking of illiquid assets that generate cash flows.

3) Measures to enhance transparency would also help promote market participation and increase market liquidity. Information about the general issuance strategy and timely disclosure of trade information in the secondary market by a central agency would be useful for market participants to prepare investment

strategies. Furthermore, independent valuations for portfolios should also be provided by bond pricing agencies for the cases of illiquid assets.

4) The development of derivative markets for instruments such as futures, swaps would help increasing liquidity and trading activities as they enable investors to build up their investment portfolios and risk management strategies.

5) Strong corporate governance provides an attractive investment climate and therefore is also essential in deepening the market and creating liquidity. The role of the Board of Directors in protecting shareholder rights, effective legal channels for shareholders rights to enforced and takeover codes to ensure a fair market for corporate control are crucial aspects of corporate governance that need to be strengthened in East Asia

6) Credit risk assessment is a key element of bond markets and hence crucial for regional bond market development. Although, most countries in the region have credit ratings with domestic and major international agencies, the establishment of a regional credit rating agency rating agency should have the following advantages. First, the agency could ensure standardization of assigned ratings across countries, and attain economy of scale. Second, it could also help provide more complete coverage of bond issuers, especially for small and medium size companies who need ratings for their international issuances. However, the merit of such an agency would depend on its credibility, governance structure, and growth of cross-border issuance and investments.

In sum, the efforts of East Asian financial cooperation on establishing a framework for crisis prevention and resolution through regional surveillance and liquidity support and developing domestic and regional capital markets have been important endeavors to ensure macroeconomic and financial stability in the period of increasing financial integration. However, they are still far from being very effective in helping spot and manage risks and enhancing resiliency in the financial system. The momentum of greater regional cooperation needs to be kept going. This section of the paper has identified the essential areas where further improvements should be attentively undertaken.

5. Conclusion

This paper discusses various measures of international financial integration which can be broadly grouped into three families: regulatory measures, quantity-based measures, and price-based measures. First, according to rules and regulations on cross-border capital flows, Japan and Singapore have low restrictions on capital transactions comparable to the United Kingdom and the United States; other East Asian countries such as Korea, Thailand, Indonesia, the Philippines, and Malaysia are more restrictive and China has more controls than any other East Asian countries. Second, according to the volume of cross-border capital flows, East Asian economies are increasingly integrated; however, shares of regional cross-border flows in the forms of bank lending and portfolio investment of East Asian countries are relatively low compared with those of the European Union. Furthermore, intraregional financial integration is falling behind that with the global financial system. Third, price-based measures, including short-term interest rates, stock prices, and exchange rates,

indicate that the degree of East Asian financial integration has increased. However, the degree of price convergence is still low relative to that in Europe: dispersion in the interbank rates, though falling, is still relatively high, while exchange rate comovements of East Asian countries are not uniform. In short, East Asia's financial openness has improved over the past decades but still lagged behind developed economies.

In terms of the benefits on economic growth, there are also various channels through which integrated East Asian financial markets provide an impetus to economic growth. First, our investigation using the gravity model demonstrates that increasing financial integration through FDI has been a crucial factor behind the increasing significance of intraregional exports. Second, closely connected financial markets can give rise to an efficient transfer of funds between net savers and net borrowers within the region. Third, a broadening scope of international risk sharing can bring down risk premium and cost of capital. Finally, financial deepening in domestic markets potentially leads to higher economic growth.

As for economic and financial stability, even though in theory financial integration should help reduce macroeconomic and financial volatility as it offers better opportunities for risk diversification, so far evidence shows that the full benefit is far from being achieved especially in emerging market economies in 1990s. This is to a large extent because greater financial integration exposes countries to fluctuations in the international capital markets and also reveals their own fragilities to the outside world. As for East Asia, the benefit of regional financial integration on consumption smoothing has been limited compared with the European Union countries. This is because East Asian countries except Singapore and Hong Kong hold much lower levels of foreign assets in proportion to GDP and also have a low level of intraregional investment. However, there exists a good scope for gains from greater risk sharing in East Asia once intraregional capital flows become more significant.

Since the Asian crisis, at the country level, there have been several positive developments that have helped reduce external vulnerabilities. These include the moves toward a more credible monetary and exchange rate framework, improvements in the composition of capital inflows, increasing importance of capital markets, and the introduction of risk-based supervision framework. However, it is found that the sizes of the bond markets are still relatively small. Moreover, issues on cross-border supervision need to be addressed and transparency should be improved further. At the regional level, the efforts of East Asian financial cooperation under various fora on establishing a framework for crisis prevention and resolution through regional surveillance and liquidity support and developing domestic and regional capital markets have been important endeavors to ensure macroeconomic and financial stability at both domestic and regional levels. However, to make the existing frameworks more effective, several improvements should be undertaken.

The effectiveness of the regional surveillance system is crucial for assessing cross-border risks and deploying regional liquidity support and can be enhanced by including financial stability surveillance, adding independent assessment (such as expert group reviews or think-tank research), and conducting cross-regional surveillance with other regional groupings for different views about the international

economic and financial development. Furthermore, better interface between regional surveillance and the IMF surveillance should also be emphasized. A regional agency may be needed to coordinate and strengthen the process of information gathering and sharing, economic assessment, as well as peer review and peer pressure. As for regional liquidity support, the CMI mechanism should be further strengthened by enlarging the pool of funding arrangements and enhancing its surveillance system to reduce the moral hazard problem as well as dependence upon the IMF conditionality.

As for domestic and regional capital market development, efforts to enlarge and strengthen the markets will need to focus on increasing market depth and liquidity. These include broadening market participants to include more institutional investors such as pension funds, insurance companies, and asset management firms, introducing and enhancing asset securitization, increasing transparency in terms of trading information disclosure in the secondary market, developing the derivative markets, promoting corporate governance, and establishing a regional credit rating agency.

To conclude, this paper suggests that East Asia has a potential to further enhance financial integration and develop it as a channel to achieve long-term regional growth and stability. With strengthened regional financial integration as well as sufficiently enhanced resiliency at both domestic and regional levels, East Asia will advantageously position itself to compete in the global economy.

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