

Financial Integration in Northeast Asia: Prospects and Implications

Yongseung Jung¹, Frank M. Song², Seung-Cheol Jeon³

First Draft: June 25, 2004

¹ Kyung Hee University

² The University of Hong Kong

³ The Bank of Korea

I. Introduction

Last decade we have witnessed a major change in international financial markets, so-called international financial integration. The international financial market integration can be defined as an individual country's linkages to international markets through capital account liberalization. These capital flows have resulted in periodic financial crises with serious economic and social costs, while they are associated with high growth rates in some developing countries. As a result, there has been an intense debate in both academic and policy sides on the effects of financial integration for emerging economies.

Theoretically, the developing countries can accelerate their growth by attracting foreign capital. That is, the developing country accessible to the international financial markets can increase the economic growth rate by augmenting its savings and reducing the cost of capital with the domestic financial sectors. However, international financial integration itself does not lead to a convergence between developed and less developed countries because the distortions induced by imperfect financial market are transitory, which can be vanished over time with the financial market development. The economic growth rate is mainly determined by productivity, not by capital market distortions.

Empirically, it is also unclear whether the financial integration causes fast economic growth or vice versa, and whether the correlation between the economic growth rate and the financial integration is robust after controlling some factors. For example, the selective and limited financial integration strategy that China and India have adopted seems to be helpful in achieving a high growth rate. Although Jordan and Peru have opened foreign capital flows, they did not enjoy a positive economic growth rate.

The main purpose of this paper is to review the theoretical basis for the financial integration and then to explore the financial development in Korea, China, and Japan. Finally, it provides an assessment of empirical evidence on the financial integration process in Northeast Asia and policy implications.

The conclusions of this paper can be summarized as follows. First,

there has been a substantial progress in the financial market integration among Korea, China, and Japan. In particular, the money market and bond market in this region has been more financially integrated than the stock market after the Asian financial market crisis. Second, the financial linkage of each country to the U.S. market still dominates the linkage among these countries. Finally, the financial market integration should be taken together with the goods market integration, i.e. the trade openness.

This paper is composed as follows. Section II discusses the theoretical background of financial integration, and section III explores the financial integration in Northeast Asia. Section IV assesses empirically the financial integration in these regions, and finally section V gives the policy implications and conclusions.

II. Theoretical Back Ground

Theoretically, the benefit of international financial integration involves the efficiency of laissez-faire. Standard argument for an international financial integration runs as follows: A country with restriction to capital liberalization bears a distortion proportional to the domestic and foreign returns on investment, making the country to take an inefficient economic growth path. Moreover, financial integration helps, in principle, developing countries to better manage their fundamentals such as consumption and output. The former refers to the long run benefit of international financial integration, i.e., economic growth, while the latter is related to the short run benefit of the financial integration. Since the financial integration entails the social cost as well as the social benefit, we will first discuss the benefit and cost of the financial integration in long run perspective, and then explore the business cycle issue such as market completeness and welfare cost.

2.1. Financial Integration, Growth and Crises

One of the main motivations that the developing countries pursue actively financial integration is to accelerate their growth by attracting

foreign capital. Theoretically, it is understood that the financial integration can raise the growth rate in developing countries through direct and indirect channels. For example, the developing country can increase the economic growth rate by augmenting its savings and reducing the cost of capital with the domestic financial sectors. The economy can also grow fast by diversifying risk. However, international financial integration itself does not lead to a convergence between developed and less developed countries because the distortions induced by imperfect financial market are transitory, which can be vanished over time with the financial market development. The economic growth rate is mainly determined by productivity, not by capital market distortions.

Empirically, it is also unclear whether the financial integration causes fast economic growth or vice versa, and whether the correlation between the economic growth rate and the financial integration is robust after controlling some factors. Table 1 taken from Prasad, Rogoff, Wei and Kose (2003) gives the impression that the financial integration has positive effect on the economic growth rate. The selective and limited financial integration strategy that China and India have adopted seems to be helpful in achieving a high growth rate. However, the case of Jordan and Peru gives the opposite impression. Although they have opened foreign capital flows, they did not enjoy a positive economic growth rate.

Table 1: Fastest and Slowest Growing Economies During 1980-2000 and Their Status Financial openness

Fastest Growing Economies(1980-200)	Total Percentage Change in p.c. GDP	More Financially Integrated?	Slowest Growing Economies(1980-2000)	Total percentage Change in p.c. GDP	More Financially Integrated?
China	319.6	Yes/No	Haiti	-39.5	No
Korea	234.0	Yes	Niger	-37.8	No
Singapore	155.5	Yes	Nicaragua	-30.6	No
Thailand	151.1	Yes	Togo	-30.0	No
Mauritius	145.8	No	Cote d'Ivoire	-29.2	No
Botswana	135.4	No	Burundi	-20.2	No
Hong Kong SAR	114.5	Yes	Venezuela	-17.3	Yes/ No
Malaysia	108.8	Yes	South Africa	-13.7	Yes
India	103.2	Yes/No	Jordan	-10.9	Yes
Chile	100.9	Yes	Paraguay	-9.5	No
Indonesia	97.6	Yes	Ecuador	-7.9	No
Sri Lanka	90.8	No	Peru	-7.8	Yes

Source: Prasad, Rogoff, Wei and Kose (2003).

The majority find a mixed effect. This is because the economic growth rates are determined not by the differences in hardware such as capital-labor ratios, but by the differences in software, i.e. total factor productivity that depends on the social infrastructure, rule of law. Although the financial integration can induce additional foreign capital to domestic economy, it cannot boost the economy if the domestic economic is equipped with weak governance and rule of law.

Financial integration can generate a financial crisis through a collapse of domestic economic system. Contrary to the theoretical argument that international financial integration will reduce the volatility of economic fundamentals, the financial integration often leads to a dramatic increase in fundamental volatilities. This is the cost of international financial integration. Recent Asian financial crises have dampened the argument that financial integration spurs growth.

While the financial crises in the 1970s and 1980s affected both developing economies and developed economies, they have affected the developing economies since 1990s. This may suggest that the developed economies have been able to hedge themselves from the international shocks through improving the economic systems and policies. Or the international shocks have changed over time, thereby the developing economies are more vulnerable to them than the developed economies. Kaminsky and Reinhart (1999) point out that the banking crises typically precede balance of payments crises and the currency crises then worsen the banking crises.

The financial market integration can exacerbate the crises, if the developing economies have not improved their economic system and policies to the levels of the developed economies. Because the macroeconomic costs of financial crises are larger and more persistent than the business cycle, the well-functioning safety net is necessary to minimize the social cost generated by the crises.

2.2. Financial Integration and Business Cycle

Next, we will turn to the issue of macroeconomic volatility and financial integration. Theoretically, financial integration provides better chances for reducing macroeconomic volatilities by diversifying risk. Since the developing countries with less diversified risks have been subject to higher volatility than the developed countries, the benefits are presumably larger to former countries than the latter countries. What does the economic theory imply about the financial integration and business cycle? We will explore the implication of financial integration in relation to the degree of financial market integrations.

2.2.1. Perfectly Integrated Complete Market

When a complete international financial market is integrated, both home and foreign residents can optimally share the risk arising from world-wide and country specific shocks. Under this market structure, the marginal utilities of consumption will be equated across countries at all dates and states of nature. However, the domestic and foreign

consumption needs not to be equalized under the complete international financial market. More specifically, assuming a constant relative-risk aversion (CRRA) utility function, the optimal risk sharing condition can be restated as the statement that the real exchange rate (Q_t) is proportional to the relative consumption ratio of domestic and foreign consumption

$$\left(\frac{C_t}{C_t^*} \right):$$

$$Q_t = \kappa \left[\frac{C_t^*}{C_t} \right]^{-\sigma}, \quad (1)$$

where σ is the relative risk aversion parameter and C_t, C_t^* are domestic and foreign consumption in period t .

2.2.2. Perfectly Integrated Incomplete Market

Suppose that the international financial market is incomplete, but integrated. Specifically, suppose that residents in both countries can trade only one period riskfree nominal bonds. Then, the real exchange rate is not proportional to the relative ratio of the consumption level, but the expected depreciation rate of the real exchange rate is proportional to the difference of the expected domestic consumption growth rate and the expected foreign consumption growth rate, not the domestic and foreign consumption difference.

$$E_t[q_{t+1} - q_t] = \sigma \{E_t[c_{t+1} - c_t] - E_t[c_{t+1}^* - c_t^*]\}, \quad (2)$$

where x_t is the natural logarithm of the corresponding variable X_t around the steady-state value X_{ss} .

2.2.3. Imperfectly Integrated Incomplete Market

The uncovered interest parity holds if financial market is completely integrated, irrespective of financial market completeness. However, it is well known that the uncovered interest parity does not hold in the international financial market. If the financial market is not perfectly integrated, the uncovered parity does not hold. This implies that there exists a friction in the financial market to work against the international financial market. Some authors such as Nelson and McCallum (2001) and Kollman (2001) argue that we need to introduce a kind of shock in the uncovered interest parity, so-called an uncovered interest parity shock to take into account the imperfect international financial market.

Alternatively, the imperfect international financial market can be introduced in the economic model with an adjustment cost in international financial market. Suppose that domestic residents have to pay a premium on the foreign lenders if they want to borrow from the international financial market, not domestic financial market. This may reflect the cost due to asymmetric information or the existence of intermediaries in the foreign asset market. Suppose that the risk premium increases as the borrowing amount increases to the domestic net foreign asset holdings. Then we have modified uncovered interest parity as follows:

$$E_t[s_{t+1} - s_t] = i_t - i_t^* + \eta b_t, \quad (3)$$

where b_t is the net foreign asset denominated in foreign currency. The expected depreciation rate is proportional to the difference of the domestic and foreign interest rate and the risk premium. If the home country is a borrower, the premium is negative, proportional to its net foreign asset holdings.

Overall, the theory implies that financial integration should reduce consumption volatility because international financial markets provide better opportunities for countries to share international risk and, thereby,

smooth consumption. However, the empirical evidence is again mixed. The recent Asian crises suggest that international financial integration may lead to macroeconomic volatility.

III. Financial Integration in Northeast Asia

With the theoretical background, we will proceed to explore the degree of financial integration among Korea, China, and Japan in institutional dimension and its effect on the region.

3.1. Korea

3.1.1. Capital Market

Korea's capital market had been opened step by step from early 1990s and it was almost completely opened up soon after the currency crisis in 1997. Korean authorities firstly opened domestic stock market in January 1992 by allowing direct foreign portfolio investment in domestically listed private corporation stocks up to 10%. The limit on the foreign investment in listed private corporation stocks was gradually widened until it was completely abolished in May 1998. However, foreign investment in public firm stocks has been regulated within 40% since November 2000 although the limit had been widened from 8%. On the other hand, the KOSDAQ market was also completely opened in May 1998 by removal of limits on foreign investment.

The bond market was firstly opened to foreign investors on July 1994 when direct foreign investment in small and medium sized firms' CBs was allowed. Like in stock market, domestic bond market has been opened up gradually as the authorities took steps in widening the range of eligible bonds and increasing the maximum amount of foreign investment. Korean government completed bond market openness by removing all restrictions on foreign investment in listed bonds on December 1997 and allowing foreign investment in OTC bonds and RPs on May 1998, and in non-listed bonds on July 1998.

3.1.2. Banking Industry

Korean banking industry was opened firstly in 1967 when foreign banks were permitted to establish branches in Korea. The first foreign bank branch in Korea was established by Chase Manhattan Bank at the same year. In early 1980s when Korea suffered chronic trade deficit, Korean authorities encouraged foreign banks to open their branches in Korea in order to help foreign exchange supply to the market with various advantages such as guaranteed swap returns and exclusion from the central bank's liquidity control. Those advantages had been eliminated step by step from 1985 as the authorities wanted to promote fair competition in banking industry and Korea's trade account turned into surplus.

At the same time discriminative regulations on foreign branches' banking activities also gradually reduced or eliminated. From 1985 foreign branches were allowed to access to the Bank of Korea's rediscount and loan facilities. Foreign branches were also allowed to engage in CD issuance and trust business from 1986 and 1991 respectively. In 1991 ceilings on the capital and swap contractions were removed and foreign banks were permitted to establish multiple branches. Entry barriers in banking industry reduced further by removing economic means test and the requirement to establish a representative office prior to opening a branch in 1994, and the requirement that the parent bank must be in the top 500 banks in terms of asset size in order to establish branches in Korea in 1997. Finally foreign banks were allowed to establish wholly owned subsidiaries in Korea from 1998.

3.1.3. Other Financial Industry

The Korea-US Insurance Talk initiated the first Korean insurance market opening in the middle of 1980s. As a result of trade dispute between Korea and US in 1985, Korean government agreed to authorize license of US life insurance companies in domestic market. In 1987 two US life insurance companies received license of Korean branches. Two years later, the government authorized foreign insurance companies to

establish insurance subsidiaries and joint ventures in Korea. Between 1989 and 1997 five foreign firms and seven joint ventures received licenses to participate in Korea's life insurance market.

After Korea became a regular member of the OECD in 1996, Korean government opened domestic insurance market further. The government removed economic needs test required for foreign insurance companies to open domestic branches, allowed foreign insurance companies to engage in insurance broker business in domestic market in 1997. The government also opened reinsurance, insurance appraisal and actuary market between 1997 and 1998. In addition, Korean government opened mutual credit and pension fund market in 1998. Table 1 and Table 2 describe major steps taken by the Korea authorities to open domestic stock market and bond market respectively.

Table 1: Major measures relating to Korean stock market openness

Date	Instruments	Note
Mar. 15 1991	Permitted foreign securities firms to establish branches in Korea.	
Jan. 3 1992	Permitted foreign investors to purchase listed Korean stocks up to 10% ¹⁾	3% ²⁾
Jul. 1 1994	Opened bond market to foreign investors Permitted domestic investors to purchase foreign securities	
Dec. 1 1994	Raised ceilings on foreign portfolio investment (10%→ 12%) ¹⁾	
Mar. 1 1995	Relaxed daily stock price change band (4.6%→ 6%)	
Jul. 1 1995	Raised ceilings on foreign portfolio investment (12%→ 15%) ¹⁾	
Apr. 1 1996	Raised ceilings on foreign investment in listed stocks (15%→ 18%) ¹⁾ Removed limitations on residents' foreign securities investment Permitted foreign firms to list on the Korea Stock Exchange	4% ²⁾
Oct. 1 1996	Raised ceilings on foreign investment in listed stocks (18%→ 20%) ¹⁾	5% ²⁾
May 2 1997	Raised ceilings on foreign investment in listed stocks (20%→ 23%) ¹⁾	6% ²⁾
Nov. 3 1997	Raised ceilings on foreign investment in stocks (23%→ 26%) ¹⁾	7% ²⁾
Nov. 21 1997	Requested IMF Bail-out fund	
Dec. 11 1997	Raised ceilings on foreign investment in listed stocks (26%→ 50%) ¹⁾	50% ²⁾
Dec. 31 1997	Raised ceilings on foreign investment in listed stocks (50%→ 55%) ¹⁾ Removed all limitations on foreign investment in bond market	
May 25 1998	Removed all ceilings on foreign investment in listed stocks	

Note: 1) Aggregate base. 2) Individual base.

Table 2: Changes in the limits on foreign investment in Korean bond market

			Jul 1994	Jan 1997	Jun 1997	Nov 1997	Dec 1997	Dec 1997	Dec 1997	May 1998	Jul 1998
C o r p o r a t e	S M E s	NG	Straight	×	×	Total 50%		No limits			
			CB	Total 30% (5%)	Total 50% (10%)			No limits			
			BW, EB	×	×	×	Total 50% (10%)	No limits			
		G	-	×	×	×	×	Total 30% (10%)	Total 30%	No limits	
B o n d	L E s	NG	Straight	×	×	×	×	Total 30% (10%)	Total 30%	No limits	
			CB	×	×	Total 30% (6%)		Total 50% (10%)	Total 50%	No limits	
			BW, EB	×	×	×	×	Total 50% (10%)	Total 50%	No limits	
		G	-	×	×	×	×	Total 30% (10%)	Total 30%	No limits	
Public Bond			×	×	×	×	×	Total 30%	No limits		
Listed bonds OTC trading			×	×	×	×	×	×	×	Allowed	
RP			×	×	×	×	×	×	×	Allowed	
Non-listed bonds			×	×	×	×	×	×	×	×	Allowed

Note: SMEs and LEs stand for small and medium sized enterprises and large enterprises, respectively. NG and G stand for non-guaranteed bond and guaranteed bond, respectively. '×' and ' ' denote 'not allowed' and 'same as before', respectively. CB, BW and EB stand for convertible bond, bond with warranty and Eurobond, respectively. Numbers in parentheses are limits on foreign investment per individual.

3.1.4. Foreign Direct Investment in Financial Sector

Foreign direct investment in Korean financial sector surged after Korean government implemented a series of policies to promote foreign investment in 1998 such as introduction of the Foreign Investment Promotion Act, opening up of domestic stock and bond market, and elimination of all limits on foreigners' M&A in the territory. The cumulative amount of foreign direct investment in financial sector increased to 10.4 billion dollars as of the end of 2001 from 1.9 billion dollars as of the end of 1996.

In banking sector, foreigners entered into the industry mainly through equity investment or branch set-up. The portion of foreign equities in the whole banking sector increased to 25.0% as of June 2003 from 20.0% as of December 1999. The portion of foreign equities exceeds 50% in four out of eight national commercial banks as of June 2003. Even though the number of foreign banks operating in Korea shrank from 51 to 39 between 1998 and 2003, the amount of total assets increased by 166% over the same period. Foreign Banks' overall market share also increased dramatically from 1.1% in 1998 to 18.7% in 2003 in terms of total assets.⁴

In capital market, foreigners' hold of listed stocks drastically increased, accounting for 40.1% of market capitalization as of the end of 2003 compared with 18.6% as of the end of 1998. Contrary to stock market, foreign investment in bond market has not been significant. Foreign investors' hold of listed bonds accounts for only 0.14% as of the end of 2003.

3.1.5. The Presence of Japan and China in Korean Financial Market

Although total foreign investment in Korean financial market increased rapidly after 1998, Japan and China's portion remained at a quite limited level. In banking sector, five Japanese and two Chinese banks are operating business in Korea currently. Their assets account for only

⁴ Foreign banks include three national commercial banks, KOREA FIRST, KOREA EXCHANGE and KORAM Bank, in which foreign equity shares are above 50% and foreigners actively participate in the business operation as well as foreign banks' domestic branches.

16.8% of foreign banks' total assets and 1.5% of commercial banks' total assets as of the end of 2002.

In capital market, investment by China and Japan are even smaller. The portion of Japanese investors in listed stock market has staggered around 1% since 1990s while that of US and British investors exceeded 60%. Even if we include Hong Kong as a part of China, Chinese investment in stock market has been well below 1%. The dominance of US and Britain over Japan and China (including Hong Kong) repeats in bond market. With limited foreign presence, this implies much smaller investment in bonds market by Japanese and Chinese investors.

3.2. China

The opening of China's financial sector has been step by step, in tandem with her successful economic reform. It started with special economic zones, coastal cities in the early years and then moved to central cities and all other regions recently. Foreign banks were firstly allowed to operate in RMB business and then foreign currency business. The entry of foreign financial institutions in the past two decades provides impetus to the financial reform and increases the competitiveness of the Chinese banking sector. Today, foreign financial institutions become integrated components of China's financial system and play an important role in China's economic development.

3.2.1. Banking Sector

1) Foreign banks

In 1979, the Chinese government allowed first foreign bank—Japanese Import-Export bank to open a representative office in Beijing, opening the door to foreign financial institutions for the first time. Another foreign bank, Nanyang Commercial Bank, was allowed to open a branch in Shenzhen in 1981. In the following year, five more commercial banks opened branches in the five economic special regions, mostly operate foreign currency business. In 1985, the Chinese government further

opened the five economic special regions, Xiamen, Zhuhai, Shenzhen, Shangdou, and Hainan to foreign banks. In 1990, in order to promote Shanghai as a prominent financial centre in China, the government further opened Shanghai's Pudong district to attract foreign banks. This is followed by further liberalization of 24 coastal cities such as Dalian, Tianjin, Qingdao, Nanjing, Ningbo, Fuzhou, and Guangzhou. Finally in July 1998, the Chinese government abolished all regional restrictions for the entry of foreign banks in setting up representative offices in any city in China.

There are now 19 countries and economies (mainly Hong Kong and Macau) and 62 foreign banks having their branches in China by the end of 2003. The total assets of foreign banks reach 46.6 billion US dollars (compared with 29.9 billion in 1996 and 34.2 billion in 1998), accounting for 1.4% of total asset in China's commercial bank sector. The total lending of foreign banks is 21.7 billion US dollars, among them foreign currency lending \$16.4 billion, accounting for 13% of foreign currency lending of China's commercial banks.

Since China's entry of the World Trade Organization (WTO) in 2002, the government has been pushing for further opening of the banking sector to the rest of the world. Today, there are no more restrictions on geographical area and customer basis for foreign currency trading of foreign banks. Since 2002, China Banking Regulatory Commission (CBRC) allowed more banks to open branches and representative offices in China.

Foreign banks are mostly concentrated in coastal cities in China. By the end of 2001, there are 39 foreign banks in Shanghai, 23 in Shenzhen, 19 in Beijing, 15 in Guangzhou, 14 in Tianjin, 10 in Xiamen, and 8 in Dalian. Together these cities account for 87% of total foreign banks in China. Most foreign banks come from Germany, Japan, and Hong Kong, accounting for more than 65% of total number of foreign banks in China. Most foreign banks in China are large international banks. Among the 54 banks in the Fortune 500 list of companies, there are at least 27 have branches in China.

Foreign banks mainly serve foreign companies and joint ventures in China, with increasing attention paid to serve foreign individuals and oversea Chinese from Hong Kong, Macau, and Taiwan. For example, the

Fuji bank of Japan mainly serves the Japanese enterprises in China for their needs in terms of loans, guarantees, deposits and foreign currency.

The main business of foreign currency service now include: financing, consulting, investment, international clearing, deposit and lending, guarantee, transfer, trading, and securities trading. According to the agreements of WTO, foreign banks are increasingly developing their RMB business. We expect this trend will continue, especially after the five year transition period during which domestic banks are still protected to certain degree by the government.

3.2.2. Foreign Investment Bank and Insurance Companies

(1) Investment Banks

According to official information of China's Foreign Currency Administration, several major investment banks are allowed to invest in China's emerging securities market as foreign Qualified Institution Investors (QFII). For example, UBS has a quota of 0.6 billion US dollars, Nomura Securities has a quota of 50 million US dollars and HSBC 100 million US dollars. There are total 11 QFIIs and their total investment quota reaches 1.7 billion US dollars.

One particular successful example is Goldman & Sachs, a major Wall Street investment bank. It opened its branch in Hong Kong in 1983 and entered China market in 1994. In 1993, Goldman & Sachs served as the lead underwriter of \$2.25 billion Yankee bond by China International Investment and Trust Company. In 1997, Goldman & Sachs served as the lead underwriter for China Telecom's IPO in Hong Kong. In 1998, the company again served the main underwriter for the issue of China's first 1 billion US dollar government bond. In 2003, the company beaten its long time rivals Citibank and became the first in investment banking fees in China among all foreign investment banks.

(2) Foreign Insurance Companies

Since China entered WTO in 2002, there has been rapid opening of her insurance industry. By the end of 2002, China allowed 34 foreign insurance companies to set up their representative offices and other

operating offices. There are now more than 54 foreign insurance entities coming from 12 countries operating in China. There is also an enlargement of operating regions from mainly coastal cities to some other big inland cities. Furthermore, there is increasing freedom for the operation of foreign insurance companies in China.

3. 2. 4. Other Foreign Financial Institutions

In October 2003, in accordance of WTO agreement, the China Banking Regulatory Commission (CBRC) released an important regulation “Regulations on Automobile Financing Companies”. Since the end of 2003, the CBRC has been considering the entry application of Shanghai GM Finance Company, Toyota Finance Company (China), and Volks Wagon Finance Company (China). It signals the opening of China’s automobile finance market to foreign joint ventures and foreign financial institutions in the near future.

China also partially opened its investment fund industry to foreign financial institutions. For example, China Communication Bank jointed with Japan Nikko Asset Management Company to form investment fund for Chinese government bonds. Foreign financial institutions also are allowed to enter China’s giant asset management business associated with the non-performing loans of the state-owned banks.

3.2.5. The Entry Regulations and Entry Barriers of Foreign Financial Institutions

1) The Entry Regulations of Foreign Financial Institutions

In December 2001, the State Council released “Regulations on Foreign Financial Institutions” and proposed to implement the policy starting from February 2002. It laid out the five foundations for the entry of foreign financial institutions:

(1) After entering WTO, foreign financial institutions, subject to prudence conditions of entry, can open any operating entities in any city in China;

(2) There are no restrictions on customer basis of foreign currency services by foreign financial institutions;

(3) Abolish the current quantitative restrictions on foreign banks in their RMB business as long as the foreign financial institutions have been operating in China for three years, profitable for consecutive two years and other prudent conditions set by China's Peoples Bank.

(4) Relax the constraints on the nature of Chinese partnership for foreign financial institutions. In particular, there is no need to have Chinese partners to be a financial institution as before.

(5) Broaden the scope of regional and customer base for the RMB business of foreign banks.

In May of 2003, the Chinese Banking Regulatory Commission (CBRC) released "Regulations on the process and administration of entry of banks" and became effective sine July of that year. According to this regulation, the CBRC adjusted the approval process of new banking business and further reduced the requirement for report of some specific banking business to the CBRC and also relaxed the appointment procedure of high-ranking bank executives.

In December 2003, the CBRC released "Regulations on the entry of foreign financial institutions". As an important aspect of financial reform, the CBRC allows the share of a foreign financial institution in a Chinese bank to be raised from 15% to 20%. If the combined foreign shares in the Chinese bank are below 25%, the nature of ownership structure and banking business is considered to be the same. By December 2003, China has already allowed foreign bank entry in five of the joint-equity commercial banks and city commercial banks. The highest share of foreign bank entry is 15%.

In December 2003, the CBRC also decided to simplify the procedure of foreign banks. For example, in terms of operating funds of a subsidiary or joint-equity foreign banks, there were six categories according to the size. After the December regulation, there are only three with only 100 million RMB, 200 million RMB, and 300 million RMB respectively.

2) The Current Restraining Factors for the Entry of Foreign Banks

(1) Policy Factors

Although there is “super nationals” treatment to foreign banks in many aspects, there is still no formal law governing a foreign financial institution. The financial market in China is still operating in the environment of experiment and continuing reform. There is a lack of normal rules and regulations for foreign financial institutions, this in turn brings certain uncertainties to the entry of foreign financial institutions.

There are increasing constraints on foreign financial institutions as the laws and regulations become increasingly normalized and consistent with the world standard. This will put foreign financial institutions on the same level field as domestic ones. Foreign financial institutions will gradually lose their special favors granted to them in the early years of financial opening.

There are significant differences in policies among different regions in China. The more developed big cities usually have more favorable policies towards foreign financial institutions while less developed regions have greater demand for foreign capital but with less open and transparency policies.

(2) Other Factors

To most of Chinese depositors, the domestic banks have better credibility than foreign banks because they are backed up by the credibility of the Chinese government. The experience of RMB business of 32 foreign banks in China suggests that they are not at advantage relative to domestic banks.

It is rather difficult for a foreign financial institution to build a network all over China. Through years of work, the four state-owned banks now have branches all over China. Foreign banks are difficult to compete on this aspect.

The localization of foreign financial institutions is a long process. It is difficult to gain knowledge of local market, culture and etc in a short time period for a foreign financial institution in order to successfully serve Chinese clients.

(3) The Regulations of Foreign Financial Institutions

Since its establishment in 2002, the CSBC has done a lot of work in improving the efficiency and the transparency of the banking regulations. The regulations of foreign banks are now under umbrella of the CSBC while the Chinese Insurance Regulatory Commission (CIRC) supervises the operation of foreign insurance companies in China.

The main contents of the February 2002 “Regulations on foreign banks” are as follows:

First, fulfill China’s commitment to WTO in opening to foreign financial institutions.

Second, adjust the limit of deposit share of total asset of foreign banks. The new regulations increased the share of foreign currency deposit of total foreign currency assets from 40% to 70%. Abolish the linkage requirement of RMB deposits with foreign currency deposits. Account both the RMB capital and foreign currency capital in the capital requirement of 8%.

Third, require 25% liquidity ratio of liquidable asset to liquidable liabilities.

Fourth, unify the regulations of RMB and foreign currency operation.

(4) The regulations of foreign insurance companies

To meet the requirement of WTO, the Chinese Insurance Regulatory Commission (CIRC) has been increasing the transparency of the law and regulations. There is now public consultation before any major changes in law and regulations. The CIRC also publishes the important policies through various channels.

In February 2002, the Chinese government released “Regulations of foreign insurance companies” and it became effective the following year. The basic spirit of the regulation is to abolish those current practices in insurance market which is not consistent with the agreements of WTO.

3.2.6. The Future of Foreign Financial Institutions in China

According to the WTO agreements, China will abolish all geographical restrictions of foreign currency business of foreign banks. There will be further liberalization of RMB business of foreign banks five years after

China's entrance in WTO. There is also relaxation of banking customers in foreign currency business. The foreign banks can engage in RMB business with retail customers five years after the entrance of WTO. There is also virtually every kind of banking business that can be conducted by foreign banks. There are similar liberalization in securities and insurance industry as detailed in the following table:

Table 3: The Financial Liberalization in China after Entrance of WTO

Financial Industry	3 years after	5 years after
Banks	allow foreign banks to conduct RMB business with Chinese firms	allow foreign banks to conduct RMB business with retail customers in all regions
Securities	allow foreign share of 33% in joint-equity securities companies allow foreign share of 49% in joint-equity investment funds	allow foreign share of 49% in joint-equity securities companies
Insurance	allow foreign share of 51% in join-equity insurance companies	abolish all geographical restrictions

Finally, given the increasing opening of China's financial sector, foreign financial institutions have a promising future in China. This is true also due to their comparative advantage in the following aspects:

(1) Advantages in experience, management skills and financial innovations.

Foreign banks that are operating in China are mostly well-known and large international banks. They have accumulated tremendous experience in every aspects of banking, especially in the area of financial

innovations. For example, foreign banks have very sophisticated tools of risk management which help them measure and hedge various risks in banking while most Chinese banks lack basic knowledge of modern risk management tools. Foreign banks also have a lot of knowledge about the function of financial derivatives. As China will permit the development of financial derivatives in the near future, foreign banks will see tremendous opportunities.

(2) The advantage of asset size and profitability

Foreign banks enjoy the advantage of big size and greater profitability. For example, in 1998, the return of assets of China's four state-owned banks were only 0.2% while the world largest banks claim the return to be 2.2%, more than ten time higher than the Chinese banks.

(3) The tax advantage

So far foreign financial institutions still enjoy tax advantages in many areas. For example, foreign financial institutions can exempt taxes for their operating income if they are earned in a special economic zone where they were chartered. This tax advantage will last the first five years after starting the operation. Also in these special economic zones, foreign financial institutions can pay corporate income tax at a much lower tax rate of 15% while the Chinese banks have to pay the rate of 33%.

(4) Managerial talent

Because of the long history of foreign banks, it has a very efficient training system for employees and thus has accumulated a lot of bank talents. The higher compensation and better working conditions of foreign banks also attract more talented professionals from domestic bank.

Overall, there are tremendous opportunities for foreign financial institutions in China. However, there are also a lot of challenges as domestic financial institutions will learn to compete with foreign ones.

3.3. Japan

Japan has enjoyed the so-called 'Japanese Miracle' for 30 years after World War II, and then witnessed the 'Lost Decade' with the surge and

collapse of Japanese economic bubble. It is needless to say that the Japanese financial system has contributed to Japan's miracle and collapse. Many authors say that an economic system that is successful within one set of environmental conditions could be a fundamental defect under the different environments. The banking-oriented Japanese financial system has become somewhat obsolete.

3.3.1. Financial System during the High-Growth Period

Japan tried to catch up other developed countries with high economic growth after WWII. Japanese government pushed intensive industrialization from light industries to heavy industries. Since the available funds were scarce, the government could not rely on markets. During the high-growth period, it was inevitable for Japanese government to regulate financial market. Control over deposit interest rates was necessary not only for rents for banking sector, but also for funds for strategic industries. The banking industry with entry barrier was segmented into various fields. For example, city banks supplied short-term funds for nation's strategic industries while long-term credit banks provided funds of long-term capital investments for these industries.

The Japanese financial markets were tightly closed off from the rest of the world before 1974. The government did not issue government bonds on a large scale until after 1970s. Most companies obtained their necessary long-term funds from the long-term credit banks. Under these circumstances, the bond market could not develop. Foreign capital transactions were severely restricted to protect domestic financial institutions from the rest of the world. For example, importers who could not get foreign currencies had to apply for available foreign currencies and obtain them from the government. Neither firms nor individuals could purchase foreign securities and real estate. Foreigners were not allowed to buy Japanese securities. Since the government placed priority on high growth, the financial sector was regulated to promote investment in strategically important industries. The administrative guidance was heavily used to encourage investment in strategic industries and to protect the domestic banking sector in the interest of facilitating financial

intermediation in Japan. Therefore, the direct financial sector such as the bond market was heavily controlled, thereby constraining the international capital flows to and from other countries.

Summing up, a controlled and bank-oriented financial system had been utilized to achieve high economic growth with intensive capital injections into strategic industries. By-product, the financial industry was tightly closed off the world and could not develop.

3.3.2. The Lost Decade and the Liberalization of Financial Market

In the 1970s, the Japanese economy experienced a rapid structural change with the end of high economic growth period. Many factors are cited to explain the decline of economic growth and the burst of bubbles during these periods. With the end of labor force movement from the agricultural to the industrial sector, the fragile financial sector has been cited as one of the most fundamental factors to the economic decline.

With the expansion of their financial wealth, the Japanese people who deposited lots of their assets to bank account wanted to have higher returns on bank deposits and to diversify investment in financial assets. Moreover, the decrease in investment with lower economic growth rate made it unnecessary for the financial sector to provide the surplus funds to the domestic industry. This increased the need for the financial liberalization in Japan. Financial market opened step by step during 1970s. The Japanese monetary authority had exchange rate stabilization, in addition to the output and inflation stabilization. Hence, the Japanese government lifted financial market restrictions based on the exchange rate fluctuation.

Table 4 summarizes the chronology of the major steps toward integrating the Japanese financial market into the World market.

Table 4: The Chronology of Financial Market Integration

Year	Month	Contents
1964	Apr.	Japan accepted IMF Article VIII obligations. Japanese joins OECD.
1968	Feb.	Yen conversion controls introduced to restrict conversion of foreign currencies into yen and domestic investment into yen.
1971	July.	Upper limits on foreign securities purchased by investment trusts and insurance companies abolished.
	Aug.	US suspended dollar conversion to gold.
	Dec.	IMF parity changed to 308 Yen/US\$ (Smithsonian rate) and band widened by +/- 2.5%
1972	Feb.	Purchase of foreign securities by trust bank liberalized.
	Mar.	Purchase of foreign securities by commercial banks liberalized.
	June	Outward foreign direct investment liberalized.
1973	Feb.	Floating exchange rate regime introduced
	May.	Inward direct investment liberalized with exception five categories of business.
	Dec.	Yen conversion controls on banks partially eased.
1974	Jan.	'Voluntary restraint' to balance net foreign securities investments by banks, securities companies, investment trusts, and insurance companies introduced.
1976	Nov.	Conditions attaching to outward long-term bank loans are eased.
1977	Mar.	Acquisition of foreign equities and bonds by residents belonging to foreign companies permitted.
	June	Regulations on net open positions of residents abolished.
1979	Jan.	Regulations on acquisition of yen-denominated bonds excluding those with remaining maturity of more than one year by non-residents relaxed.
	May	Repo transactions by non-residents liberalized(<i>gensaki</i> market)

	June	Short-term impact loans introduced and regulations on long-term impact loans lifted.
1980	Dec.	New Foreign Exchange and Foreign Trade Control Law implemented: in-and-out transactions free in principle.
1984	Apr.	Regulations based on the principle of real demand related to forward foreign exchange transactions abolished.
	June	Regulations regarding the conversions of foreign currency-denominated funds into yen abolished. Yen-denominated loans to residents contracted in overseas markets liberalized.
1985	Oct.	Interest rates on large time deposits liberalized.
1986	Dec.	Japan Offshore Market (JOM) established.
1993	June	Interest rates on time deposits fully liberalized.
1994	Oct.	Interest rates on demand deposits (excluding current accounts) liberalized.
1995	June	Restriction on number of new branches a bank can establish removed.
	Aug.	Recycling restrictions on yen-denominated bonds issued by non-residents in overseas markets abolished.
1996	Nov.	'Big-Bang' reform of capital market announced.
1997	Dec.	Ban on financial holding companies lifted.
1998	Apr.	Revised Foreign Exchange and Foreign Trade Law enforced.

Moreover, the decrease of economic growth rate led Japanese government to take a fiscal deficit stance to boost its economy. As a consequence, the government financed its expenditures by issuing bonds. The banking sector could not absorb the outstanding government bonds because the government expanded the volume of bonds to get out of the long slump tunnel. Bonds had to be floated in the financial markets, which sparked the deregulation of banks and other financial institutions. Many Japanese corporations and banks also turned to foreign capital markets

to earn higher rate of returns despite various controls and regulations. These trends of globalization coupled with sustaining savings surplus accelerated the financial integration with the world as table 1 shows.

It is noteworthy that Japan opted for a strategy of selective and gradual opening the financial market in line with its time schedule. For example, it took 34 years for capital and foreign transactions to be fully liberalized in April 1998. The gradual and delayed financial liberalization reflected the various interests in financial and corporate sectors. However, the government had no choice but to take a fundamental reform, i.e. the so-called Japanese financial Big Bang with the deepening of the economic slump (See table 5).

Table 5: Japan's Financial Big Bang

1. Diversification of investment and financing choices		
1998	Apr.	Cross-border capital transactions liberalized.
	Sept.	Securitization of loan assets permitted.
	Dec.	Securities derivatives fully liberalized.
		Sale of investment trusts by banks permitted.
		Definition of securities expanded and enhanced.
2001	Apr.	Over-the-counter sale of insurance products by banks partly permitted.

2. Improvement of intermediary agent service quality and fostering competition		
1988	Mar.	Establishment of financial holding companies permitted.
	Dec.	Licensing of securities activities shifted to register system.
	Oct.	Scope of business widened for subsidiaries of financial institutions.
		Equity brokerage commissions fully liberalized.

3. Development of user-friendly financial market		
--	--	--

1977	July	Sale of unlisted and unregistered equities by securities companies permitted.
	Dec.	Stock exchange features improved, and off-exchange equities transactions permitted.
		Over-the-counter market for equities improved(introduction of market and new register system).
		Features of financial futures contract improved.
4. Development of credible, fair and transparent business system		
1998	Dec.	Disclosure practices enhanced.
1999	Apr.	Prompt corrective action introduced.
2001	Apr.	Law on Sales of Financial Products enacted.
2002	Jan.	Methods of settling government bonds changed from designated-time net settlement to real-time gross settlement(RTGS).
2003	Jan.	STRIPS (Separate Trading of Registered Interest and Principal of Securities) introduced for government bonds.

IV. Empirical Evidence of Financial Integration in Northeast Asia

In this section we examine whether there has been a tendency of financial integration among financial markets of Northeast Asian countries (Japan, Korea and China). The policy measures taken to open domestic financial markets in these countries over the decade paved the road for financial globalization in institutional dimension. However, financial globalization does not necessarily go in parallel with regional integration. It depends on the channels of capital flows. If capital flows mainly through inter-regional channel rather than through intra-regional as a result of market openness, we will observe much less evidence of regional financial integration than that of financial globalization.

Various methods have been employed to measure financial integration in the literature. They can be categorized into three groups. The first category is price conditions, which mainly test the interest parity conditions or co-movement of stock market returns. The second

category is quantity-based measures such as savings-investment correlations, consumption correlations and gross capital flows. The third category is regulatory or institutional factors such as capital controls and market structure. We already examined regulatory or institutional factors in the previous chapter. It is not easy to gauge Northeast Asian financial integration with quantity-based measures due to data availability problem. Here we measure the financial integration with two sets of price conditions; uncovered interest parity condition and co-movement of stock market returns.

4.1. Uncovered Interest Parity (UIP) Condition

The UIP can be expressed as follows:

$$i_t = i_t^* + s_{t,t+1}^e \quad (4)$$

where i_t and i_t^* are domestic and foreign interest rate respectively, and $s_{t,t+1}^e$ is next period's expected exchange rate change. From this relationship, we can define UIP differential (UID) as follows:

$$UID_t = i_t - i_t^* - s_{t,t+1}^e \quad (5)$$

If UID is positive, expected return from domestic assets is higher than that of foreign assets and capital will flow into home country. If UID is negative, capital will flow out of home country. As financial markets become more integrated, measured ex post UID becomes smaller because of larger arbitrage capital flows.

We estimate the UIDs in money market and bond market for Japan, China, Korea, and US pairwise. US is included for comparison. As for the money market interest rate, interest rates in inter-bank markets (federal funds market for the US) are used. However, in the case of China, we use bank rate, which is the interest rate applied to the central bank's lend to deposit money banks, due to the limit in data. Previous period's actual change is used for the expected exchange rate change. (The result

does not change significantly when we use next period's actual exchange rate change.) The data are monthly and samples are split into three sub-periods: 1980:1 to 1990:2, 1990:3 to 1996:12, and 1999:1 to 2003:9. The samples represent 1980s, pre-crisis 1990s, and post-crisis period respectively. The period between 1997:1 and 1998:12 are removed to avoid disturbing effects from abnormal period in financial markets. The results are shown in Table 6. Due to limited data, China appears partly in the table.

The upper panel and the lower panel of the table show the estimated UIDs in money market and bonds market for pairs of countries over three sub-sample periods respectively. The UIDs in Korea-Japan and China-Japan (left-hand side country is treated as a home country) show significant positive values over the whole sample periods in money market and bond market, which implies that there have been strong attractions for capital to flow from Japan into Korea and China. This result is consistent with actual observation. On the other hand, UIDs in China-Korea are negative over the available sample periods although the size decreased in the post-crisis period. This implies that capital has been induced to flow from China to Korea in money market and bond market if capital transactions were liberalized across the two countries.

Most interesting result is that the UIDs among Japan, China and Korea in both markets became smaller after the currency crisis compared with pre-crisis periods at least based on the available data. This implies that regional financial integration in Northeast Asia became stronger after the currency crisis.

However, the (absolute value of) UIDs for the pairs of Korea-Japan and China-Japan in money market and bond market are consistently larger than those for the pairs of Korea-US and China-US respectively over the selected sample periods. This result is another evidence that Northeast Asian countries' financial markets have been more integrated with US financial market than with each other, which has been found in Park and Bae (2002) with different methodology.

4.2. Co-movement in Stock Market Returns

In this section we examine regional financial integration with sample correlations and Granger-Causality tests in Northeast Asian stock

market returns. We also examine the integrity between Northeast Asia and US stock markets for comparison. We use the daily changes in stock price indices for Japan, China, Korea and US, and split the sample periods into three sub-samples: 1980:1~1991:12, 1992:1~1996:12, and 1999:1~2004:4. Again the period from 1997:1~1998:12 was removed to avoid abnormal effects of the currency crises. First we calculate sample correlations in the log difference of stock market returns for each pairs of countries. Table 7 reports the result. China appears only from the second sub-sample due to limit on the data. The sample correlations in stock market returns show mixed pattern on the regional financial integration among Japan, China and Korea. The correlations between Japan and Korea are positive over the whole sub-sample periods. Further, it is greatest in the post-crisis sub-sample. Surprisingly, the correlations between Japan and Korea are greater than those between Japan and US or Korea and US in all sub-samples. However, the correlation between China and Korea turns negative in the post-crisis period although that between China and Japan remains positive in the same period.

Next, we turn to the Granger-causality test on the changes in stock returns among Northeast Asian countries. Using log difference of the daily stock price indices in each country, we conduct the test with lag 2. Table 8 reports the result. Here, the linkage among Northeast Asian countries' stock markets is much less clear. In the post-crisis period, only the pair of Korea and China has statistically significant causality that runs from Korea to China. However, this result looks dubious. On the other hand, we see strong causality that runs from US to Japan and Korea in the post-crisis period. This result is consistent with what we have observed in the stock market newsletters.

The empirical analysis may be summarized as follows: at least in money market and bond market regional financial integration in Northeast Asian countries (Japan, China and Korea) has strengthened in the post-crisis period. Stock market does not show clear sign of stronger integration in the post-crisis period. On the other hand, Northeast Asian countries' financial markets are more strongly integrated with US financial markets than with each other. This is the case in all three financial markets we examined: money market, bond market and stock market.

Table 6: UIDs in Money Market and Bond Market

	1980:1 ~ 1990:2	1990:3 ~ 1996:12	1999:1 ~ 2003:9
<Money Market>			
Korea- Japan	5.9	9.4	4.6
China – Japan	NA	4.0	3.1
China – Korea	NA	-5.3	-1.6
Korea – U.S.	2.3	8.3	1.0
China – U.S.	NA	3.0	-0.5
Japan – U.S.	-3.7	-1.1	-3.7
<Bond Market>			
Korea- Japan	9.0	8.5	5.7
China – Japan	NA	NA	1.2
China – Korea	NA	NA	-4.6
Korea – U.S.	5.7	7.0	2.9
China – U.S.	NA	NA	-1.6
Japan – U.S.	-3.4	-1.5	-2.9

Table 7: ample Correlations in Stock Market Returns*

(Period: Jan. 1980 ~ DEC. 1991)

	JAPAN	KOREA	US
JAPAN	1.000	0.085	0.147
KOREA	0.085	1.000	-0.002
US	0.147	-0.002	1.000

(Period: Jan. 1992 ~ Dec. 1996)

	JAPAN	KOREA	CHINA	US
JAPAN	1.000	0.016	0.007	0.100
KOREA	0.016	1.000	0.035	0.010
CHINA	0.007	0.035	1.000	-0.008
US	0.100	0.010	-0.008	1.000

(Period: Jan. 1999 ~ May 2004)

	JAPAN	KOREA	CHINA	US
JAPAN	1.000	0.478	0.067	0.173
KOREA	0.478	1.000	-0.014	0.177
CHINA	0.067	-0.014	1.000	-0.030
US	0.173	0.177	-0.030	1.000

* Log difference of daily stock price indices

Table 8: Granger-Causality Test on the Stock Market Returns*

(Period: Jan. 1980 ~ Dec. 1991)

Null Hypothesis:	Obs	lag	F-Stats	(Prob)
JAPAN does not Granger Cause KOREA	2759	(2)	5.2979	(0.0051)
KOREA does not Granger Cause JAPAN	2759	(2)	2.0148	(0.1335)
US does not Granger Cause KOREA	2759	(2)	4.2356	(0.0146)
US does not Granger Cause JAPAN	2759	(2)	224.4860	(0.0000)
JAPAN does not Granger Cause US	2759	(2)	1.4587	(0.2327)

(Period: Jan. 1992 ~ Dec. 1996)

Null Hypothesis:	Obs	lag	F-Stats	(Prob)
JAPAN does not Granger Cause KOREA	1097	(2)	2.3606	(0.0948)
JAPAN does not Granger Cause CHINA	1094	(2)	0.6682	(0.5129)
CHINA does not Granger Cause JAPAN	1094	(2)	0.0643	(0.9377)
CHINA does not Granger Cause KOREA	1094	(2)	0.1506	(0.8602)
KOREA does not Granger Cause JAPAN	1097	(2)	1.4808	(0.2279)
KOREA does not Granger Cause CHINA	1094	(2)	0.1573	(0.8545)
US does not Granger Cause KOREA	1097	(2)	0.2145	(0.8070)
US does not Granger Cause CHINA	1094	(2)	0.6801	(0.5068)
US does not Granger Cause JAPAN	1097	(2)	11.8638	(0.0000)
JAPAN does not Granger Cause US	1097	(2)	1.7843	(0.1684)
CHINA does not Granger Cause US	1094	(2)	0.4521	(0.6364)

Note: * Log difference of daily stock price indices

(Period: Jan. 1999 ~ May 2004)

Null Hypothesis:	Obs	lag	F-Stats	(Prob)
JAPAN does not Granger Cause KOREA	933	(2)	0.7172	(0.4884)
JAPAN does not Granger Cause CHINA	933	(2)	1.3254	(0.2662)
CHINA does not Granger Cause JAPAN	933	(2)	1.0149	(0.3629)
CHINA does not Granger Cause KOREA	933	(2)	0.0360	(0.9647)
KOREA does not Granger Cause JAPAN	933	(2)	1.7329	(0.1773)
KOREA does not Granger Cause CHINA	933	(2)	3.1983	(0.0413)
US does not Granger Cause KOREA	933	(2)	48.5889	(0.0000)
US does not Granger Cause CHINA	933	(2)	0.0249	(0.9754)
US does not Granger Cause JAPAN	933	(2)	52.7212	(0.0000)
JAPAN does not Granger Cause US	933	(2)	0.6922	(0.5007)
CHINA does not Granger Cause US	933	(2)	0.1132	(0.8930)

V. Prospects and Implications

In this paper, we have seen the benefits and costs of financial integration in theoretical aspects and measured the status of financial integration in Northeast Asia. Though the developing countries can theoretically accelerate their growth by attracting foreign capital, it is empirically unclear whether the financial integration causes fast economic growth or vice versa. This basically reflects the fact that the economic growth rate is mainly determined by productivity, not by capital market distortions.

The theoretical interaction between trade openness and financial integration is complex and uncertain. Most trade models from Dornbusch, Fischer and Samuelson (1977) to Backus, Kehoe and Kydland (1992) predict that trade openness results in a narrowing non-traded sector and thereby an interdependence of the economy. Financial integration also increases an independence of the economy to the world. Both trade in financial assets and goods have affect directly and indirectly the cross-country synchronization of business cycles. Therefore, if both trade openness and financial liberalization are pushed together, the business cycle of the economy hinges on the international shocks rather than the domestic shocks. In this sense, the degree of business cycle synchronization is a relevant policy question because it is an important concept to measure the desirability of a currency area. If the business cycle is not highly synchronized, the government should not give up its policy tool, i.e. monetary policy because it is very costly to curb the abnormal business cycle, for example the financial crisis.

In recent, the issue of FTA and the financial integration among the Northeast Asian countries are frequently discussed in both academic and policy circles. If the financial integration and trade openness synchronize the business cycles, the currency union can be put forth or discussed as an ultimate goal of Northeast Asian economy unification. The empirical results in this paper show that the Northeast Asian economies are more financially integrated than before 1997, Asian crisis, but not so much to discuss the currency union. Substantial trade barriers still exist in the Northeast Asian countries, preventing the financial sector from

integrating across the regions. There are many sources of business cycles such as technology shocks, fiscal shocks, and preference shocks. Monetary shocks are also one of the most important sources in business cycles. Even though the non-synchronization of the business cycles in these regions is not an artifact of an international non-convergence of monetary policy, the premature financial integration implies that the monetary authorities in Northeast Asian countries should cooperate to pursue their common goal of stabilization in price and stability in the financial sector.

It is needless to say that trade openness, coupled with financial market openness will reduce the further transport costs and thereby deepen the degree of financial integration in Northeast Asia.

References

Aizenman, Joshua (2003), "On the Hidden Links Between Financial and Trade Openness," NBER Working Paper 9906.

Backus, David, Patrick Kehoe, and Finn Kydland (1992), "International Business Cycles", *Journal of Political Economy*, 100. pp.745-775.

Benigno, Peirpaolo (1999), "Price Stability in Incomplete Financial Market," Mimeo., New York University.

Canales-Kriljenko, Jorge Ivan, Padamja Khandelwal, and Alexander Lehmann (2003), "Financial Integration in Central America: Prospects and Adjustment Needs," IMP Policy Discussion Paper 03/03.

Dornbusch, Ridiger, Stanley Fischer, and Paul Samuelson (1977), "Comparative Advantage, Trade and Payments in a Ricardian Model with a Continuum of Goods," *American Economic Review*, 67, pp. 823-839.

Gjersem, Carl (2003), "Financial Market Integration in the Euro area," OECD Economic Department Working Paper No. 368.

Kaminsky, Graciela and Carmen M. Reinhart (1999), "The Twin Crises: The Causes of Banking and Balance-of Payments Problems," *American Economic Review*, 89, pp. 473-500.

Motonishi Taizo and Hiroshi Yoshikawa (1999), "Causes of the Long Staggering of Japan During the 1980s: Financial or real?," NBER Working Paper 7351.

Park, Young Chul and Bae Kee-Hong (2002), "Financial Liberalization and Economic Integration in East Asia," PECC Finance Forum Conference, Issues and Prospects for Regional Cooperation among Financial Stability and Development, Honolulu, August 11-13.

Prasad Eswar, Rogoff Kenneth, Wei Shang-Jin, and Ayhan Rose (2003),

“Effects of Financial Globalization on Developing Countries: Some Empirical Evidence,” Mimeo., International Monetary Fund.

Rajan, Ramkishan S. (2003), “Financial Integration in ASEAN and Beyond: Implications for Regional Monetary Integration,” Prepared for the ASEAN Roundtable 2003: “Roadmap to an ASEAN Economic Community,” Organized by the Institute of Southeast Asian Studies (Singapore: August 20-21).

Shin, Kwanho and Yunjong Wang (2002) Monetary Integration Ahead of Trade Integration,” Mimeo.

Svaleryd Helena and Jonas Vlachos (2000), “Does Financial Development Lead to Trade Liberalization?” Mimeo.

Takahashi, Wataru and Shuji Kobayakawa (2003), “Globalization: Role of Institution Building in the Japanese Financial Sector,” Bank of Japan Working Paper 03-E-07.