Economic Integration:
Relationship between trade and financial integrations in ASEAN+3

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The idea of Economic Integration is spreading world-wide in recent years. From the experience of European Union, steps of integration process have been introduced. First, pursues trade linkage for enhancing demand and productivities of integrating countries. Then, making wider access to source of funds for production, members are going forward to support Foreign Direct Investment (FDI) flows. At present, not only trade and investment financing by FDI, but also bank credits, and portfolio investment in capital markets are in concern.
Most of the countries Asia, as a huge source of capital of the world at present, are export oriented which means that the economies of this region are depending on trade. However, the use of accumulated capital cannot be efficiently used by production activities in the region. Thus, it is necessary to understand the relationship between trade and finance, what is the mechanism of them, in term of Asian framework.

Relationship between international trade and financial sector

The interactions between trade openness, financial integration, specialization, and business cycle synchronization are complex. In theory, trade both in goods and in financial assets may affect the cross-country synchronization of business cycles. Intense bilateral trade will tend to accompany highly correlated business cycles in a wide range of theoretical models, ranging from multisector international models with intermediate-good trade, to one-sector versions with either technology or monetary shocks. The impact of financial integration on cycle synchronization, in turn, is not unambiguous. On the one hand, limited ability to borrow and lend internationally hampers the transfer of resources across countries and can increase GDP correlations. But on the other hand, if investors have imperfect information or face liquidity constrains, limiting capital flows can actually decrease GDP correlations, as investors herd, or withdraw capital from many destinations simultaneously (Imbs 2004).
In the old time, financial sector started its role when banking system established to be the intermediary of capital flows both as creditor who provides credits to producers and as the place where people keep their wealth. It is the same concept when trading expanded throughout the world. Traders need credits to run their business. At present, there are many financial products

to facilitate international trade such as remittance process which will transfer payment between countries, Bill of Exchange (B/E) and Letter of Credit (LC) which use as guarantor of payments, etc. At the same time, banks also take a role as the place to store trade surplus, by accumulating foreign currencies. Besides banking system, there are also alternative for traders to raise funds. The development of capital markets, bonds and equities, including their derivatives are choices for business managements while it is also good opportunity for capital owners to invest their resources.

The needs of international finance on international trade can be shown in theoretical models. Both Ricardian and Heckscher- Ohlin model can easily show the role of financial sector on international trade flows (Beck, 2003). Empirical studies show that direction of trade flows generally coincide with those of asset flows. To simplify the mechanism by using the concept of IMF's Balance of Payment, there are 5 channels that foreign currencies are able to flow into country, namely current account which presents trade flows, FDI, portfolio investment which includes bonds and equities, loans from financial institutions, and credits and others from non-financial sector. There is theoretical work by Kletzer and Bardhan (1987) showed that even when technology and endowments are identical between countries and economies of scale are absent, moral hazard considerations in the international credit market under sovereign risk and differences between countries in the domestic institutions of credit contract enforcement under incomplete information may lead to one country facing a higher interest rate or rationed credit compared to another. This may lead to differences in comparative advantage in processed goods requiring more working capital, market costs, or trade finance. The more sophisticated manufactured finished products require more credit to cover selling and distribution. Therefore, the role of external finance is getting more and more important, in order to facilitate international trade.

An equilibrium model of Weiss (1980), focused on international trade, payments and asset flows showed that relationship between asset and changes in the relative prices of consumption goods of different countries and exchange rates, and return to alternative capital assets, may all be explained as arising from unexpected changes in the state of long-term expectations in one country relative to those in its trading partner.

There are many papers studied about the effect of trade integration and financial integration on economic growth, many of them support that these two parts of economic integration are helping in promoting growth. Though most of them estimated the effect on growth by each integration, it is possible to assume that trade integration and financial integration can work together to stimulate more growth.

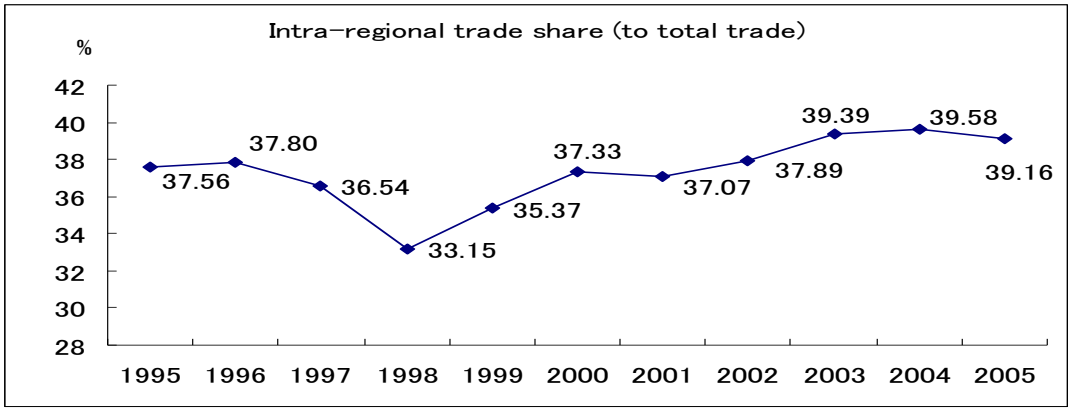
The study of Guerin (2006) found that Regional Trade Agreement (RTAs) helps to reduce transaction cost and geographical patterns of trade and portfolio investment are similar to those

of FDI.

It is plausible to believe that countries service their foreign debts at least in part to avoid the reduced trade that typically follows international default. By using gravity model to find the relationship between trade and financial credits, Rose and Spiegel (2002) found that there is positive effect of bilateral trade on bilateral lending patterns and confirmed the hypothesis that international trade patterns determine lending patterns. Debtors tend to borrow more from creditors with whom they share more international trade ties. Besides, there is also a significant effect of increasing 1 percent in trade, bilateral lending increases over 0.5 percent (keep other things being equal).

Economic Integration in ASEAN+3

Looking more specifically into Asia, trade integration, known as ASEAN Free Trade Area (AFTA), established in 1992 with main objective to eliminate tariff barriers among member countries (that meet a 40 percent ASEAN content requirement), by using framework of the Common Effective Preferential (CEPT), further the aim to integrate Asian economies into a single production base and expanding market demand. To the extended, the East Asian region has long enjoyed market-driven integration not only through trade, but also through FDI. Indeed, FDI reforms in regional countries have contributed to the development of export platforms in the region.

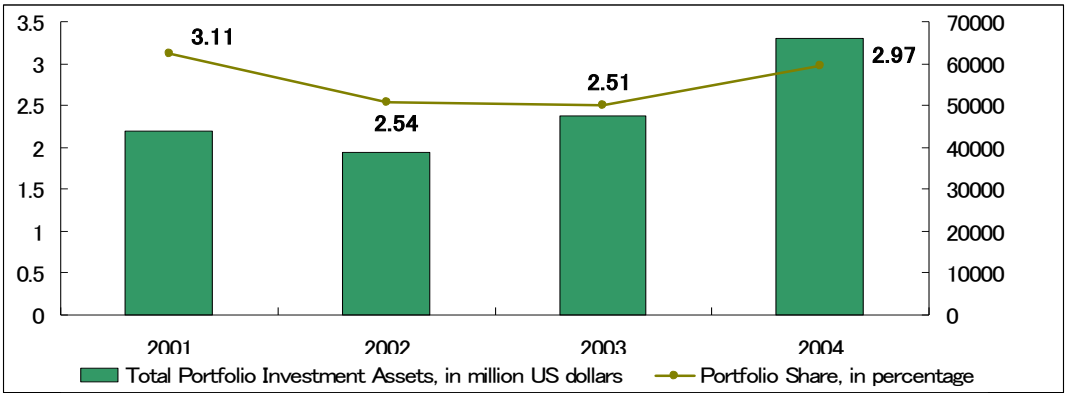


Source: ARIC, ADB

On the other hand, the Asian Financial Crisis raised awareness on two fronts. One, countries needed to strengthen their domestic financial sectors in order to handle the efficient absorption of capital inflows and meet the financial intermediation needs of high-growth development. Two, countries needs to develop the institutional capacity to contain cross-country contagion and resolve common financial problems. Addressing both national and regional aspects of financial integration will provide additional scope for regional financial cooperation and coordination (Chow et al, 2005.) Minister of Finance of ASEAN member countries signed

"Ministerial Understanding of ASEAN Cooperation in Finance" in 1997 in order to develop and promote cooperation in the area of finance for the benefit of members.

Intra-regional Portfolio Investment



Source: ARIC, ADB

The development of economic integration in Asian region is on an expansion trend, both trade and finance, but they are doing such process separately IMF Working Paper (2006) showed that intra-regional exports (in percent of GDP) rose from average 17.7 percent during 1985-1991 to 28.7 percent during 1999-2004 and intra-regional imports (in percent of GDP) rose from 20.6 percent to 28.7 percent during the same period, while Asia's international cross-border portfolio investment is amounted only 2.25 percent of Asia's GDP in 2004 and also the same small amount of cross-boarder bank borrowing and lending. Lee (2008) pointed out three constrains of East Asian financial integration. First, underdevelopment of financial markets must hinder trade in regional securities between different economies. Second, to enhance the degree of regional financial integration, continuous efforts are needed to advance capital control liberalization. The most important is the deregulations and opening domestic financial systems. It is still true that a number of countries in East Asia remain behind the capital market liberalization process by relying frequently on capital controls. Third, lack of financial and monetary cooperation for exchange rate stabilization among regional currencies causes higher exchange rate volatility that hampers financial integration. Financial integration in East Asia is much weaker than that in other regions, after controlling for the degree of international trade integration, suggests that there are other structural and institutional impediments to financial integration that need to be addressed by policies, particularly designed to promote the growth of Asian financial markets. The big gap between trade and financial integration showing in Asian region brought a question that "Is there any relationship between trade integration and financial integration?" especially in Asian region, and if there is one as expected, "how to promote financial integration to the same level as trade integration?" , to carry to the final result of promoting economic growth within the region.

As a result of Economic Integration in East Asia, Rana (2006) found that increasing in trade and financial integration in region leads to a synchronization of business cycles. Formal analysis of interrelationship between trade and financial integration is not possible because of the absence of data. However, the close nexus between trade and FDI in the region and emerging linkages in the financial sector suggests that such relationship should be positive.

Also there is a debate on degree of financial integration among East Asian countries. By using data on level of financial openness, country has financial opening with advanced countries than one another (Park and Bea, 2002), Contradict with using bond financing and loans syndicated data which showed that East Asian financial markets are more integrated (McCauley, Fung and Gadanecz, 2002).

	2001	2002	2003	2004	2005
Trade/bil.USD	1,208	1,335	1,633	2,035	2,321
Ln(trade)	14.0	14.1	14.3	14.5	14.6
Portfolio/bil.USD	85.6	81.2	116.5	147.6	187.9
Ln(Portfolio)	11.4	11.3	11.7	11.9	12.1

By using only ASEAN+3 regional data (source: ARIC, ADB) correlation between intra-regional trade and intra-regional portfolio investment is about 0.98, high enough to suspect that there is quite close relationship between trade integration and financial integration in this region. However, there is no strong evidence showing the linking and how these two integration work at the same time.

Methodology

To examine the relationships between trade integration and financial integration among member countries by using bilateral data, the gravity model is the selected approach. Many studies support this model for its ability on explaining bilateral trade and financial flows such as Portes and Rey (2005), and Shin and Yang (2006) etc.

The ordinary gravity model explanatory variables are income (GDP) of ASEAN+3 member countries**,** population, and geographical distance between countries. This research uses model showing in Lee (2008) as a base model. To the extent of estimating trade integration and financial integration effects on each other, the basic equations of this research are as follow;

$$\ln(Portf_{ij}) = \beta_0 + \beta_1 \ln(GDP_i) + \beta_2 \ln(GDP_j) + \beta_3 \ln(GDP_i/Pop_i) + \beta_4 (GDP_j/Pop_j) + \beta_5 \ln Dist_{ij} + \beta_6 Border_{ij} + \beta_7 \ln(Trade_{ij}) + \delta Year_t + \varepsilon_{ij} \quad (1)$$

$$\ln(Trade_{ij}) = \beta_0 + \beta_1 \ln(GDP_i) + \beta_2 \ln(GDP_j) + \beta_3 \ln(GDP_i/Pop_i) + \beta_4 (GDP_j/Pop_j) + \beta_5 \ln Dist_{ij} + \beta_6 Border_{ij} + \beta_7 \ln(Portf_{ij}) + \delta Yeart + \varepsilon_{ij} \quad (2)$$

Where i and j denote economies, $Portf_{ij}$ denotes bilateral portfolio investment from country i to country j, $Trade_{ij}$ denotes bilateral trade from country i to country j, GDP is real GDP, Pop is population, Dist is the distance between i and j, Border is a binary variable which is unify if i and j share land border.

The observation group is datasets of ASEAN+3 member countries. Noted that, financial integration normally can be divided in 4 parts, FDI, cross-border credits, cross-border portfolio investment, and exchange rate cooperation, there is a limitation of representative variable. In the first step, this research selected bilateral portfolio investment dataset to run the regression.

To examine the inter-link, the first equation focuses on estimation of bilateral trade effects on bilateral portfolio investment, while the second equation estimates the effect of bilateral portfolio investment on trade.

The model uses portfolio investment dataset from IMF' Coordinated Portfolio Investment Survey (CPIS), bilateral trade from IMF's International Financial Statistics (IFS), GDP and population datasets from World Bank statistics, and the other variables from Rose and Spiegel (2004). The period that will be examine in this research is from 2001 to 2005 due to the limitation of portfolio investment data which began to collect in 1997 for the first time and started annual collection in 2001 onwards.

Regression Result

In this research, the tests have been conducted yearly without concerning on lagging effect from independent variables. There is possibility that explanation power may include endogenous tic problem. Besides the result from 2001 information, the regressions showed that both bilateral trade and bilateral portfolio investment affect on each other. The more bilateral trade increases, the more bilateral portfolio investment rises and vice versa. However, the change in bilateral trade affects on more than 50 percent of bilateral portfolio investment while bilateral portfolio investment change affects less than 20 percent of the change of bilateral trade. These results can be implied that bilateral trade and bilateral portfolio investment have positive relation between each other, especially the link from trade to portfolio investment. On the other hand, it seems that bilateral portfolio investment has some influence on bilateral trade but there are also some other factors that will effect bilateral trade more.

Regression Result	2001	2002	2003	2004	2005
Equation (1)					
R-squared	0.823249	0.815811	0.753015	0.737332	0.693997
Adjusted R-square	0.800753	0.792787	0.724673	0.708147	0.658882
Standard Error	1.453205	1.329066	1.75418	1.864969	1.836788
Equation (2)					
R-squared	0.792296	0.821643	0.799827	0.769041	0.709484
Adjusted R-square	0.765861	0.799349	0.776856	0.743379	0.676147
Standard Error	0.533297	0.582184	0.589417	0.708173	0.74607

Regression Result	Coefficient	Std. Error	t-Statistic	Prob.
Equation (1) ln(trade)				
2001	0.361005095	0.364193042	0.991246544	0.325906233
2002	0.79288283	0.286073905	2.771601381	0.007558014
2003	0.737756088	0.369160436	1.998470082	0.050128195
2004	0.984575319	0.307728522	3.199493221	0.002156388
2005	0.971313739	0.289650872	3.353394842	0.001375985
Equation (2) ln(Proft)				
2001	0.048618014	0.049047348	0.991246544	0.325906233
2002	0.152137884	0.05489169	2.771601381	0.007558014
2003	0.08329329	0.041678528	1.998470082	0.050128195
2004	0.141965998	0.044371401	3.199493221	0.002156388
2005	0.160250913	0.047787666	3.353394842	0.001375985

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