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경제학 석사 학위 논문

# **Financial Integration, Trade and Growth**

금융통합, 무역과 성장

2015년 8월

서울대학교 대학원

경제학부 경제학 전공

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# Financial Integration, Trade and Growth

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## **Abstract**

This study adds to vast literature on financial integration and its impact on growth by suggesting that trade level should be more carefully considered to assess the effect of reduction of capital restriction. The study argues that the impact of financial openness on growth varies among countries with different level of trade openness. Some previous studies using rule-based index of capital restriction argue that financial liberalization promotes growth, but this argument does not hold for countries with low trade openness. However, the degree of impact of financial liberalization on growth monotonically increases as countries' level of trade openness increases. For low-level countries, insufficient commercial opening not preceded by financial market liberalization are exposed to greater external risk when capital restriction is reduced. Hence, capital restriction is indeed important to mitigate current account reversals. Countries with highly integrated trade sector are positively affected by opening financial sector possibly as they are relatively safe to sudden-stop and current account reversal risk. Sufficient degree of commercial opening seems to be a prerequisite for countries to reap benefit from financial liberalization. Thus one should be cautious that there is no one-size-fits-all policy of financial liberalization.

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*Key Words:* Economic Growth, International Financial Integration, Trade

*Student Number:* 2010-20192

# Contents

<b>1. Introduction .....</b>	<b>1</b>
<b>2. Literature Review.....</b>	<b>2</b>
<b>3. Empirical Model and Data .....</b>	<b>8</b>
<b>4. Robustness Check.....</b>	<b>12</b>
<b>5. Conclusion.....</b>	<b>14</b>
<b>Appendix .....</b>	<b>15</b>
<b>References .....</b>	<b>16</b>
<b>국문초록 .....</b>	<b>18</b>

## Tables

<b>Table 1:</b> Regression results .....	10
<b>Table 2:</b> Robustness Check: Quinn Index .....	12
<b>Table 3:</b> Robustness Check: Quinn Index and Trade Grouping .....	13
<b>Table 4:</b> Country list .....	15

# I. Introduction

The question of impact of financial integration on economic growth has been highly controversial and still remains to be a critical issue. Theory asserts that financial integration would promote freer movement of capital allowing countries to choose from larger pool of financing, hence enhancing better risk-sharing, efficient allocation leading to economic growth. Wealth of empirical studies has been presented during last two decades and provides with divergent conclusion depending on measures, sample and methods used. Few studies concern with possible non-linear relationship with financial liberalization measure with other control variables. Arteta, Eichengreen and Wyplosz (2001) and Klein (2003) consider non-linear relationship between income level and Quinn index, and argue that countries with medium-level development reaps significant benefit from financial integration as benefit from liberalization diminishes for less developed and advanced countries. Kose et al (2008) argue that growth effect of financial integration is transmitted through indirect channel such as financial and institutional development so that countries with sound institutional development above certain threshold level to reap benefit from financial integration. In this paper I focus on the relationship between trade openness and financial openness and assess the impact of financial openness on growth for countries with different level of trade openness. In growth analysis, I use de jure (rule based) index of financial liberalization proposed by Chinn-Ito (2006), which consists of the legal restriction on capital flow. Furthermore regression analysis is conducted using similar to that of pooled cross section time series (PCTS) model proposed by Quinn-Toyoda (2008) with addition of trade group dummy variables consisting of country groups with differing level of trade openness and respective interaction terms of trade group dummy and Chinn-Ito index.

The results of this study show that for countries with low level of trade openness, easing capital restriction negatively affects growth rates. For low trade country, the result is consistent with previous studies that for developing countries, opening capital market prior to goods market may make countries be exposed to external risks and high probability of default on international debt such as sudden stops and capital account reversal. On the other hand for countries with very high trade volume compared to their GDP, easing capital positively affect growth on average. Hence one should caution that there is no-one-fits all policy of capital account opening: policy makers should also consider level of trade openness while opening up financial barriers. Section II presents previous studies relating to financial integration and growth and trade and growth. Section III discusses model used and present results. Section IV presents robustness check of the results and Section V concludes.

## II. Literature review

### 1. Financial integration

#### *1.1. Financial liberalization and Growth*

Rise of globalization since 1985 has, among many other consequences, resulted in increasing financial openness in capital market in both real terms as well as in legal arena. Since then, study of impact of financial integration on economic growth has been flourishing and still remains to be a critical issue. Theory asserts that financial integration would promote freer movement of capital allowing countries to choose from larger pool of financing, hence enhancing better risk-sharing, efficient allocation leading to economic growth. However, empirical studies on this issue offer diverging conclusion.

Chinn-Ito (2006), Quinn and Toyoda (2008), Quinn-Schindler-Toyoda (2011) argue that financial openness promote growth. They use de jure index of capital restriction of their own design to capture the extent of countries' level of financial openness. Bekaert et. al (2005) argue that stock market liberalization spur growth. However not everyone is enthusiastic about the effect of financial liberalization. Edison et al. (2002) argue that financial openness does have positive impact on growth albeit statistically insignificant. Henry (2006) notes that the effect on growth is not permanent but only temporary. Klein and Olivei (2003) put emphasis on financial depth and suggest that countries with sufficient level of financial depth (which is noted as the ratio of liquid liability to GDP) benefit from financial liberalization. Kose et al (2008) argue that growth effect of financial integration is transmitted through indirect channel such as financial and institutional development so that countries with sound institutional development above certain threshold level to reap benefit from financial integration. Along with these arguments Lane, Milesi-Ferretti (2008) argue that lack of liquidity in emerging and developing countries' financial system would undermine their capability in handling global portfolio weight and capital inflow. Thus, although repression in financial liberalization may be helpful in times of global crisis, long-term effect on growth could be negative.<sup>1</sup> Arteta, Eichengreen and Wyplosz (2001) and Klein (2003) argue that diverging responses to the question of whether financial integration promotes economic growth is due to failure to consider possible non-linear relationship among covariates in the regression analyses. They argue that non-linear relationship among GDP per capita growth, financial openness measure and initial income level exist and they show that middle-income countries benefit most from easing capital restriction whereas low-income countries have insufficient level of development to fully absorb benefit and high-income have already

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<sup>1</sup> Ranciere, Tornell, Werstermann forthcoming

benefited from openness so there exists diminishing return to openness. In addition Rodrik (1998) suggests that capital openness suggests that capital account openness may only serve as a proxy for the government reputation i.e. countries that facilitate capital mobility or induce capital inflow are likely to have credible government. Hence, Rodrik shows that including indicators of government reputation such as government efficiency, rule of law and control of corruption in the model weakens the effect of capital account liberalization on growth. On the contrary, Klein (2003) finds that introducing government reputation enhances the effect capital account openness has on growth. My paper explores relationship between trade openness and de jure measures of financial openness and finds that de Chinn-Ito index has negative effect on growth for countries with low ratio of Trade/GDP and its impact increases monotonically and ultimately turns positive for countries with increasing level of trade openness.

### ***1.2. Measures of financial openness/capital restriction***

For the analysis conducted in this paper I use de jure index (rule-based) of capital restriction proposed by Chinn-Ito (2006). Chinn-Ito index (henceforth KAOPEN) is de jure measure of capital liberalization based on binary measures of capital restriction available in Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER). Here I use normalized index with scale ranging from 0 denoting full capital restriction, to 1 denoting full liberalization. Chinn-Ito uses principal component analysis on three categorical indicators of financial current account restrictions (current account restrictions, export proceeds surrender requirements, and presence of multiple exchange rates) plus SHARE, which takes the rolling average of IMF\_BINARY over the five-year window  $t-4$  through  $t$ .<sup>2</sup> KAOPEN index is widely used in the analysis of government policy stance in capital restriction. The main limitation of KAOPEN is that although it reflects the capital restriction policy of respective countries, it does not capture the actual cross-border capital flows. De facto index (quantitative index) designed by Lane and Milesi-Ferretti (TOTAL) which is the ratio of the sum of countries' foreign asset and foreign liability positions to GDP does better in capturing the extent of cross-border capital flow, but does not explain which assets or liabilities from one country has flown to another. Also, TOTAL does not reflect the quality of capital movement and fails to capture the possibility of capital flight or other important cross-border capital movement that strongly affects the economy. KAOPEN and TOTAL reflect different aspect of financial liberalization and one does not reflect the nature of the other. For instance, countries such as France, Germany, and the Netherlands saw their values of TOTAL increase from about 100 per cent to 300 per cent during 1994 to 2004 without significant changes in

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<sup>2</sup> Quinn-Schindler-Toyoda (2011)

capital account openness.<sup>3</sup> Also, some countries may invest in other countries because of certain types of capital restriction. As noted by Ostry et.al (2011) countries may impose capital controls to manage destabilizing capital inflow and outflow. This aspect is one of the key factors that explain the impact of capital restriction on growth rate for countries with different level of trade openness in later section. As noted in Lane and Milesi-Ferretti (2007), special attention is needed to be paid for financial centers and tax havens, which generally have extremely high level of total amount of foreign asset and liability to their respective GDP. Although KAOPEN index is very high for these countries, it does not distinguish them from other highly open countries. Thus although I mainly use KAOPEN in conducting regression analysis, TOTAL is used as reference to distinguish certain groups as outliers.

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<sup>3</sup> Binici, Hutchinson, and Schindler (2010)

## **2. Trade, growth and financial openness**

### ***2.1. Measure of trade openness***

Measuring trade openness and applicability of those measures are also a highly debated issue paralleling with that of measuring financial openness. Similar to financial openness measure, there exist some form of de jure index, which entails legal and policy stances, and de facto index, which captures actual trade volume. So which measure is more plausible? In Dollar and Kraay (2003) the use of trade as a fraction of GDP as a proxy for trade policy is discussed in detail. Main shortcomings of de jure measures for example tariff rates and non-tariff barriers are discrepancy between legal rates and actual amount of collected tariffs and the authors doubt whether these measures reflect trade policy. Also, in Rodriguez and Rodrik (1998) mention that trade policies do affect trade volume, but taking transport cost reduction and increase in world demand as examples, further argue that there is no reason to expect changes in trade volumes necessarily correspond to change in trade policy. They criticize previous research due to inherent shortcomings of various policy measures of trade openness and use the ratio of sum of export and import to GDP. Thus, in order to avoid ambiguities arising from policy measures, I use the same quantitative measure as in Rodriguez and Rodrik (1998).

### ***2.2. Trade, Financial Openness and Growth***

Vast wealth of previous literature supporting positive impact of trade openness on growth exist. Countries that are open to trade tends to grow faster than those that are not. However, Wacziarg and Welch (2008) caution that there is no one-size-fits-all policy if trade opening as the degree of income growth after trade liberalization varied largely across countries. The authors argue that although average effect of trade openness on growth is positive in the large sample, half of the countries had null or negative changes in growth following trade liberalization. They further argue that local circumstances such as institution, political stability, scope of economic reforms, and macroeconomic conditions and policies must be taken into account to fully capture the effect of trade openness on growth. Thorough discussion on this issue will not be discussed in this paper for it is impossible to present all of important works and subsequent discussion deviates from the main purpose of this paper. Estimation in Section III of this paper also confirms that there exist indeed positive correlation between trade and growth. Other relevant literature involves the relationship between trade and financial liberalization. Aizenman (2008) notes that greater trade openness increases the effective cost of financial repression, thereby arguing that financial reform is a natural by-product of trade integration. Hence there is indeed sequencing of trade policy leading to de facto financial integration. Aizenman (2008) emphasizes on the necessity of

fiscal soundness in order to sustain the effect of financial opening on growth. The author also suggests possible reverse linkages between financial integration and trade integration stating that greater financial openness may reduce the cost of trade credit and encourage foreign direct investment (FDI).<sup>4</sup> Dollar and Kraay (2003) also posit that foreign trade and foreign investment tend to be closely related. They use the case of liberalization of FDI as an example. In case of China, they estimate that trade and FDI are correlated to 0.40. The model I use in this study does not fully address possible endogenous relationship between trade and financial openness index, but simply add non-linear terms as an effort to capture this peculiarity.

### ***2.3. Capital restriction, sudden stops and current account reversal***

Perhaps one of the key explanations for sequencing of trade integration leading to financial openness may concern with mitigating the risk of sudden stops and current account reversal. Joseph Stiglitz (2002) argues that increasing restriction on capital movement will reduce the probability that countries face with external risk notably current account reversal and sudden stop. Stiglitz explains that countries with high level of financial openness will only require smaller reduction in aggregate income when exposed to external shocks compared to countries with low level of financial openness. The magnitude of negative effects of current account reversal and sudden stops on growth depend on the country's level of trade integration. Countries with high trade openness are less likely to suffer than countries that are less open (Edwards (2004)). In contrast with Stiglitz, Edwards (2004) argue that the degree of financial openness seems not to be related to the intensity of the effect of current account reversals on economic growth. Cavallo and Frankel (2008) reinforces this argument as they argue that countries more open to trade are less vulnerable to external crisis and using gravity model to address endogeneity of trade, the effect is even greater. They further argue that high ratio of trade to GDP facilitates adjustment to a cut-off in international financing. International investors will be less likely to pull out of a country with a high trade/GDP ratio, because they know the country is less likely to default.<sup>5</sup> In summary, Stiglitz (2002) emphasizes that capital restriction is indeed important to mitigate current account reversals whereas Edwards (2004) and Cavallo and Frankel (2008) argue that high level of trade openness is sufficient to curb external risks. Perhaps the estimation result presented in my paper support the need of capital restriction for mitigating negative effect on growth channeled through excessively low level of trade openness.

## **III. Empirical Model and Data**

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<sup>4</sup> Aizenman (2008)

<sup>5</sup> Cavallo and Frankel (2008)

### 3.1 Method and Data

Regression model used in this paper is inspired from Quinn (2008), where author adopts pooled cross section time series (PCTS) model to estimate the effect of various measures of capital restriction on GDP per capita growth rate. Variables standard in growth literature is added for the analysis: GDP per capita growth rate is the dependent variable and log of per capita income, log of investment by GDP, change in investment, population growth rate, change in trade openness and log of trade openness are added as predetermined variables. As in Quinn (2008) oil price level and change in oil price is added to control for any oil price shock. Political coups and revolution are replaced by International Country Risk Guide (ICRG) indicator<sup>6</sup> to control for government quality as political coups and revolution could not be retrieved and ICRG indicator seems as comprehensive. Also, only Chinn-Ito index is used in the analysis as this indicator is publicly available and comprises longer time span compared to other de jure indices publicly disclosed<sup>7</sup>. In addition, dummy variables for different groups of trade openness level its interaction with Chinn-Ito index in order to determine different effects financial openness has for countries with varying degrees of trade openness. Average level of trade openness is computed and countries are grouped by percentile level. Most of variables are obtained from World Development Indicator 2013. Investment per GDP is obtained from World Governance Indicator. Chinn-Ito index is publicly available online by the creators. In this paper I use normalized Chinn-Ito index with its scale ranging from 0 to 100. Sample time period is 1970~2010 and 76 countries are used. The list of 76 countries are reported in the appendix.

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<sup>6</sup> ICRG indicator is published by Political Risk Service Group and the indicator is not publicly available. However recent version of World Development Indicator published by World Bank has compiled this indicator in its database. The index is rescaled from 0-100 meaning countries with high ICRG are less corrupt and more reliable.

<sup>7</sup> Quinn index is also available spanning from 1950 to 2004, but Chinn-Ito index covers more recent date.

## 3.2 Model

### 3.2.1 Ordinary Least Squares estimation

Pooled, cross-section, time series (PCTS) model is used with some adjustments. PCTS models are useful in evaluating the question of why, over time, some nations grow quickly and others do not.<sup>8</sup>

$$\Delta GDP_{i,s} = \beta_0 + \beta_1 X_{i,s-1} + \beta_3 D_{Trade\ Group} \times KAOPEN_{i,s-1} + \beta_3 D_{Trade\ Group} + \varepsilon_{i,s},$$
$$i = 1, 2, \dots, 76,$$

The dependent variable are all lagged one period and country dummy variables are included. This is four-year non-overlapping model<sup>9</sup>, with  $i=1,2,\dots,76$  and period beginning from  $s=1970-1973$ . The reason for using non-overlapping model is to attenuate economic fluctuation. KAOPEN is Chinn-Ito index scale to 1-100 higher meaning less capital restriction. Group dummy variables for different level of trade openness and interaction term with KAOPEN are included to capture different effect KAOPEN has on growth for varying country groups.

### 3.2.2 Results

Table 1 summarizes the result of Ordinary Least Squares estimation conducted on countries with different level of trade openness. Average value of trade openness is computed for each country and countries grouped according to different percentiles of average trade openness in ascending order. Column 1 of table 1 reports results from estimating models without trade group dummies and interaction terms. The result is consistent with Chinn-Ito (2006), Quinn-Toyoda (2008) as impact of de jure index of financial openness promotes economic growth. Column 3 of table 1 reports result from estimating the model with trade group dummies and their interaction with KAOPEN. Trade groups are divided as 0-25 percentile, 25-50 percentile, 50-75 percentile and 75-100 percentile groups. The results show not all countries generally benefit from financial liberalization and the extent of benefit differs according to the level of trade openness. Countries with lowest trade openness do not benefit from increasing financial liberalization; in fact the impact of easing capital restriction negatively and significantly affects growth. This seems to be consistent with the argument from previous literature that countries opening up capital market not preceded by opening goods market are likely to be

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<sup>8</sup> Quinn (2008)

<sup>9</sup> Five-year non-overlapping model is used in Quinn (2008). The reason for using just four-year non-overlapping model is simply due to deficiency in data.

exposed to external risk such as sudden-stop of capital inflow and current account reversal. Low openness to trade exposes countries with external risks such as sudden stop and more open countries are prone to smaller exposure.

Countries with very high trade openness correspondingly have very high level of financial opening. This seems plausible as liberalization in goods market precedes opening of capital market. Also the results show that returns for easing capital restriction for highly open countries is monotonically increasing, positive and significant.

According to Rodriguez and Rodrik (1998) countries with high trade volume may have low probability of debt default and are relatively safe to sudden-stop and current account reversal risk. Grouping countries by only considering average level of trade openness may seem too simplistic and ignore level of development. For instance advanced countries with large domestic market have relatively lower ratio due to large GDP. Some countries with very high level of trade level are accompanied by very high level of financial openness and they are financial centers and tax haven countries such as Belgium Cyprus, Panama, Singapore and Switzerland. Also, following institution and financial development literature, I separately conducted regression with samples excluding financial centers and the results are presented in column4 of table 1. The impact of reducing capital restriction on growth is stronger when financial centers are excluded from the sample meaning that countries with very high openness are in need of greater capital market liberalization to curb impact of increasing trade level. Column 2 of table 1 reports the effect of financial openness for financial centers, and tax havens, which have excessively high amount of foreign asset traded relative to the size of their economies. Although the impact is positive, its degree is smaller as financial centers have already attained high level of financial openness thus the return to liberalization financial market diminishes.

As mentioned earlier KAOPEN does not capture the amount of actual flow of financial assets across borders. Using de facto measure of financial openness may also fail to dissect the impact of different types of assets and liabilities on economic growth. Thus closer look in types of actual capital movement seems necessary to clearly justify the effect financial liberalization on growth of high-level trade countries.

**Table 1**  
**Regression results**

GDP per Capita	(1)	(2)	(3)	(4)
INCOME	-4.555***	-4.559***	-0.265***	-0.239***
	(0.505)	(0.502)	(0.083)	(0.078)
Population	-0.356	-0.356	-0.585***	-0.677***
	(0.229)	(0.227)	(0.200)	(0.198)
Investment	-1.237	-1.226	0.348	0.315
	(0.790)	(0.792)	(0.395)	(0.290)
ICRG	0.018**	0.018**	0.002	0.003
	(0.008)	(0.009)	(0.008)	(0.008)
OIL	-0.326	-0.318	-0.139	-0.020
	(0.481)	(0.491)	(0.737)	(0.027)
TRADE	0.882**	0.870**	0.236**	0.051***
	(0.386)	(0.390)	(0.118)	(0.014)
KAOPEN	0.012***	0.012***	-0.016**	-0.017***
	(0.004)	(0.004)	(0.006)	(0.005)
Financial Center	-	5.390**	-	
	-	(2.108)	-	
$D_{Fin} \times KAOPEN$	-	0.003**	-	
	-	(0.001)	-	
$D_{25-50}$	-	-	-1.221***	-1.169**
	-	-	(0.321)	(0.471)
$D_{50-75}$	-	-	-1.588***	-0.911***
	-	-	(0.538)	(0.314)
$D_{75-100}$	-	-	-1.707***	-1.206*
	-	-	(0.656)	(0.646)
$D_{0-25} \times KAOPEN$	-	-	-0.001	0.003
	-	-	(0.006)	(0.005)
$D_{25-50} \times KAOPEN$	-	-	0.014**	0.017**
	-	-	(0.006)	(0.007)
$D_{50-75} \times KAOPEN$	-	-	0.022***	0.017***
	-	-	(0.007)	(0.005)
$D_{100} \times KAOPEN$	-	-	0.028***	0.040***
	-	-	(0.010)	(0.009)
Constant	42.122***	42.115***	4.155	5.501**
	(5.423)	(5.419)	(3.158)	(2.587)
$R^2$	0.45	0.45	0.40	0.43

\* p<0.1, \*\* p<0.05, \*\*\* p<0.01

- (1) Replication of Quinn-Toyoda(2008)
- (2) Impact of financial openness on growth for financial centers.
- (3) Impact of financial openness on growth for countries grouped by 0-25<sup>th</sup>, 25<sup>th</sup>-50<sup>th</sup>, 50<sup>th</sup>-75<sup>th</sup>, 75<sup>th</sup>-100<sup>th</sup> percentile level of trade openness.
- (4) Impact of financial openness on growth for countries excluding financial centers grouped by 0-25<sup>th</sup>, 25<sup>th</sup>-50<sup>th</sup>, 50<sup>th</sup>-75<sup>th</sup>, 75<sup>th</sup>-100<sup>th</sup> percentile level of trade openness.

## IV. Robustness Check

To check robustness of results, OLS estimations with different rule-based measure of financial openness and different percentile groups are conducted. As different measure I used Quinn index crafted by Quinn-Toyoda (2008), which is a rule-based measure of capital restriction as KAOPEN. The main difference between KAOPEN and Quinn index is that the latter considers the intensity of capital restriction for different criteria. Publicly available index ranges from that of 1950 to 2004, hence lacking recent data. Column 1 of table 2 simply repeats the result from using KAOPEN index and column 2 reports the results from Quinn index. The results show that replacing KAOPEN with Quinn index does not affect the main argument of this study. Countries with high Trade/GDP ratio benefit from increasing financial openness and countries with low ratio are negatively affected by financial liberalization. The results suggest slightly higher effect of reducing capital restriction on growth even its level of significance is slightly lower. Table 3 reports results from estimation with finer grouping of countries. Here countries are divided according to 0-20 percentile, 20-40 percentile, 40-60 percentile, 60-80 percentile and 80-100 percentile of trade openness level. Column 1 of table 3 presents estimation with KAOPEN, column 2 presents estimation with KAOPEN excluding financial centers, tax-havens and Sub-Saharan African countries, and column 3 presents estimation with Quinn index. The results in table 3 confirm monotonically increasing effect of financial liberalization on economic growth in ascending order of degree of trade openness.

**Table 2**  
**Robustness Check: Quinn Index**

GDP per Capita	(1)	(2)
INCOME	-0.265***	-0.528***
	(0.083)	(0.089)
Population	-0.585***	-0.620***
	(0.200)	(0.207)
Investment	0.348	0.891*
	(0.395)	(0.473)
ICRG	0.002	-0.000
	(0.008)	(0.012)
OIL	-0.139	-0.555**
	(0.737)	(0.265)
TRADE	0.236**	0.024**
	(0.118)	(0.012)
FOI	-0.016**	-0.009**
	(0.006)	(0.004)
$D_{25-50}$	-1.221***	-0.253
	(0.321)	(0.938)
$D_{50-75}$	-1.588***	-1.647
	(0.538)	(1.389)
$D_{75-100}$	-1.707***	-2.045
	(0.656)	(1.913)
$D_{0-25} \times FOI$	-0.001	-0.013**
	(0.006)	(0.006)
$D_{25-50} \times FOI$	0.014**	0.001**
	(0.006)	(0.000)
$D_{50-75} \times FOI$	0.022***	0.018**
	(0.007)	(0.009)
$D_{100} \times FOI$	0.028***	0.032**
	(0.010)	(0.015)
Constant	4.155	7.336*
	(3.158)	(4.060)
$R^2$	0.40	0.35
* p<0.1, ** p<0.05, *** p<0.01		

- (1) Impact of KAOPEN measure of financial openness on growth for countries grouped by 0-25<sup>th</sup>, 25<sup>th</sup>-50<sup>th</sup>, 50<sup>th</sup>-75<sup>th</sup>, 75<sup>th</sup>-100<sup>th</sup> percentile level of trade openness.
- (2) Impact of Quinn index of financial openness on growth for countries grouped by 0-25<sup>th</sup>, 25<sup>th</sup>-50<sup>th</sup>, 50<sup>th</sup>-75<sup>th</sup>, 75<sup>th</sup>-100<sup>th</sup> percentile level of trade openness.

**Table 3**  
**Robustness Check: Quinn Index and Trade Grouping**

GDP per Capita	(1)	(2)	(3)
INCOME	-0.219**	-3.744***	-0.660***
	(0.105)	(0.623)	(0.119)
Population	-0.535***	-0.994*	-0.722***
	(0.198)	(0.554)	(0.203)
Investment	0.415	-2.878**	1.076**
	(0.362)	(1.346)	(0.452)
ICRG	-0.000	-0.020	0.000
	(0.009)	(0.013)	(0.013)
OIL	-0.158	-1.194*	-0.566
	(0.737)	(0.707)	(0.870)
TRADE	0.046**	3.068***	0.289**
	(0.019)	(0.915)	(0.141)
FOI	-0.019***	-0.002	-0.006**
	(0.007)	(0.009)	(0.003)
$D_{20-40}$	-0.759	-0.496	2.013**
	(0.658)	(0.358)	(1.007)
$D_{40-60}$	-1.493***	-1.013***	-2.396**
	(0.488)	(0.366)	(1.135)
$D_{60-80}$	-0.738	-0.586	-1.209**
	(0.631)	(0.442)	(0.573)
$D_{80-100}$	-2.037	-1.068	-1.770**
	(1.344)	(1.344)	(0.836)
$D_{0-20} \times FOI$	0.003	0.010	-0.011**
	(0.007)	(0.009)	(0.005)
$D_{20-40} \times FOI$	0.013*	0.026**	-0.023**
	(0.007)	(0.010)	(0.011)
$D_{40-60} \times FOI$	0.013*	0.022**	0.017**
	(0.007)	(0.010)	(0.008)
$D_{60-80} \times FOI$	0.022***	0.027**	0.022*
	(0.007)	(0.010)	(0.013)
$D_{80-100} \times FOI$	0.050***	0.034***	0.034**
	(0.018)	(0.011)	(0.027)
Constant	4.981	38.289***	8.694**
	(3.372)	(6.996)	(4.093)
$R^2$	0.42	0.55	0.37

\* p<0.1, \*\* p<0.05, \*\*\* p<0.01

- (1) Impact of KAOPEN measure of financial openness on growth for countries grouped by 0-20<sup>th</sup>, 20<sup>th</sup>-40<sup>th</sup>, 40<sup>th</sup>-60<sup>th</sup>, 60<sup>th</sup>-80<sup>th</sup>, 80<sup>th</sup>-100<sup>th</sup> percentile level of trade openness.
- (2) KAOPEN measure of financial openness on growth for countries excluding financial centers and Sub-Saharan African countries grouped by 0-20<sup>th</sup>, 20<sup>th</sup>-40<sup>th</sup>, 40<sup>th</sup>-60<sup>th</sup>, 60<sup>th</sup>-80<sup>th</sup>, 80<sup>th</sup>-100<sup>th</sup> percentile level of trade openness.
- (3) Quinn index of financial openness on growth for countries grouped by 0-20<sup>th</sup>, 20<sup>th</sup>-40<sup>th</sup>, 40<sup>th</sup>-60<sup>th</sup>, 60<sup>th</sup>-80<sup>th</sup>, 80<sup>th</sup>-100<sup>th</sup> percentile level of trade openness.

## **V. Conclusion and Extension**

This study shows that the effect of easing capital restriction does not always lead to growth when considering countries' varying degree of trade openness.

Countries with low level of trade openness are negatively affected by further financial liberalization. For low-level countries, insufficient commercial opening not preceded by financial market liberalization are exposed to greater external risk when capital restriction is reduced. Countries with highly integrated trade sector benefit from opening financial sector as countries with high trade volume may have low probability of debt default and are relatively safe to sudden-stop and current account reversal risk. Argument concerning the degree of financial openness seems not to be related to the intensity of the effect of current account reversals on economic growth can be reassessed for future research. Possible extension of this study is to use other indices of financial openness such as quantitative index, which embodies actual flows of capital. However these measures are imperfect have their own shortcomings and may fail to reflect different types of cross-border capital flow.

## Appendix

**Table 4 : Country List**

Trade Openness	Country	
0-25 <sup>th</sup> percentile	Argentina	Mozambique
	Japan	Iran
	Bangladesh	Spain
	Sudan	Uruguay
	Colombia	Ecuador
	Uganda	Italy
	Pakistan	Ghana
	Mexico	France
	Peru	Guatemala
	Burkina Faso	
25 <sup>th</sup> -50 <sup>th</sup> percentile	Madagascar	South Africa
	Guinea-Bissau	Chile
	Comoros	Bolivia
	Greece	United Kingdom
	Venezuela	Zimbabwe
	Indonesia	Morocco
	Benin	Vietnam
	Mali	Syria
	Germany	Portugal
	Egypt	
50 <sup>th</sup> -75 <sup>th</sup> percentile	Canada	Sweden
	Kenya	Sri Lanka
	Slovenia	Cote d'Ivoire
	Finland	Thailand
	Switzerland	Denmark
	Dominican Republic	Iceland
	Malawi	Norway
	Philippines	Austria
	Senegal	Zambia
	Korea, Republic of	
75 <sup>th</sup> -100 <sup>th</sup> percentile	Costa Rica	Cyprus
	Gambia	Botswana
	Tunisia	Jordan
	Honduras	Netherland
	Paraguay	Belgium
	Togo	Panama
	Oman	Malaysia
	Trinidad and Tobago	Hong Kong
	Gabon	Singapore
	Belize	

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# 금융통합, 무역과 성장

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## 초록

본 연구는 자본 자유화와 경제성장과의 관계를 분석하며 금융통합과 경제성장과의 관계를 분석할 시 무역개방도의 수준을 고려해야 한다고 주장한다. 자본 자유화의 법률지표를 이용한 선행 연구에서는 자본 자유화가 경제성장에 정의 효과를 미친다 하였으나, 무역수준과 금융개방 수준의 상호작용 관계를 모형에 반영하였을 시 자본 자유화가 꼭 경제성장과 정의 관계를 갖지 않으며 또한 무역개방수준이 높은 나라일수록 금융시장이 경제성장에 미치는 효과가 일정하게 증가한다. 무역 개방도가 낮은 국가가 자본시장 개방 수준을 증가 시킬 시 자본 자유화와 경제성장은 유의미한 음의 관계를 갖는다. 이는 무역 개방도가 낮은 국가가 무역 개방 이전에 자본시장을 먼저 개방하는 것은 국가 경상수지 반전과 자본유입의 ‘서든스톱’ 위험에 노출되기 때문일 가능성이 있으며 무역개방도가 증가할수록 자본시장 개방이 외부위험의 노출을 감소 시킬 가능성이 있기 때문이다. 그러므로 친편일률적인 자본개방 정책은 불가능하며 각 국가의 특정요소들을 고려해야 한다는 게 이 연구의 시사점이다.

주요어: 경제성장; 금융통합; 무역 개방

학번: 2010-20192