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Journal of Economics and Political Economy

Suggested Citation: Wei, Hsinrong P. (2014) : Does Financial Openness Affect Economic Growth in Asian Economies? A Case Study in Selected Asian Economies, 1980-2010, Journal of Economics and Political Economy, ISSN 2148-8347, KSP Journals, Istanbul, Vol. 1, Iss. 2, pp. 254-301, https://doi.org/10.1453/jepe.v1i2.85 , http://kspjournals.org/index.php/JEPE/article/view/85

This Version is available at:
https://hdl.handle.net/10419/105854

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Journal of
Economics and Political Economy
www.kspjournals.org
Volume 1 December 2014 Issue 2

Does Financial Openness Affect Economic Growth in Asian Economies? A Case Study in Selected Asian Economies, 1980-2010

By Hsinrong P. WEI †

Abstract. In recent decades, financial liberalization has been one of the most important strategies for Asian countries to promote growth. However, debate emerges following several financial crises on whether liberalizing financial markets and allowing for free access to international capital markets, would benefit or impede economic development. The objective of this study is to examine the impact of financial openness on select seventeen Asian economies and answer the three questions: 1. Is there any linkage between financial openness and economic growth for these seventeen Asian countries? 2. Does any of the financial openness pose positive or negative effects? 3. If no direct impact revealed, can financial openness still have growth effect under certain fundamental or institutional conditions? Our main findings are as follows: 1. By employing both de jure and de facto indicators of financial openness, our empirical results indicate that the de facto indicators are associated with growth of Asian economies but de jure indicator does not show statistically significant impact on growth across three methodologies. 2.Furthermore, these growth effects vary among the de facto indicators. According to our empirical results, out of the four de facto financial openness measurements, only one of them, foreign direct investment inflows, influences growth positively whereas three other measures, including foreign direct investment outflows, portfolio investment inflows and outflows exert negative impact on growth. In terms of the view that the growth effect of the financial openness depends on macroeconomic foundations or institutional conditions of an economy, our findings do not support this view due to the estimation results are not robust across five financial openness proxies.
Keywords. Financial Openness, Inward FDI, Outward FDI, Portfolio Assets, and Portfolio Liabilities
JEL. F20, F21, F43.

1. Introduction

1.1 Debates over the Effects of Financial Openness on Economic Growth

Starting in the mid-80s, international financial liberalization has become a major policy prescription for countries to promote economic growth. In particular, developing and underdeveloped countries have embarked on financial opening policies by liberalizing their current and capital accounts, and deregulating international capital transactions. These countries have been opening up their financial markets to foreign investors and adjusting capital restrictions to attract international capital investments. China and India, for instance, have been easing

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capital inflow controls by raising investment limits for foreign investors and allowing foreign financial institutions to access domestic capital markets. In addition to the liberalization of portfolio flows, most Asian countries have been reducing or lifting the restrictions on foreign direct investment by allowing cross-border mergers and acquisitions, transnational business establishments, and foreign-owned domestic corporations across industries. This wave of global financial integration has thus resulted in a surge of cross-border capital flows among countries and regions.

In theory, lifting capital restrictions should induce capital flows from rich to poor countries, thus accumulating capital for poor countries to spur growth. A broader range of financial liberalization includes liberalizing domestic financial markets, easing capital account restrictions, and further encouraging inflow and outflow of foreign investments among countries. The many benefits of liberalization include: facilitating risk-sharing, improving capital allocation efficiency, and strengthening financial market development. According to McKinnon(1973) and Shaw (1973), financial repression will lead to low savings, low credit rationing, less investment opportunities and inefficiency in capital allocation. Once financial restrictions are lifted by policymakers, economy would be stimulated through increases in saving and investment and thus promote growth.[2] This capital reallocation will then benefit both capital rich and capital poor countries in that for capital rich economies, the return rate of savings will be driven up and investment risk will be reduced down due to diversification. For capital poor economies, more investment opportunities will be offered, employment rate will be improved, financial development will be promoted, and competition will be enhanced.

However, there are also skeptics on the positive effects of financial liberalization on the economy. Devereux and Smith (1994) argue that international risk sharing will reduce saving and thus slow down growth.[3] Stiglitz (2000) also questions the profitability of foreign capital due to information asymmetries, in that foreign investment might be riskier than investors expect from the lack of complete information[4]. Moreover, policy makers are often warned that international capital flows could cause financial market instability and macroeconomic volatility. Especially short term capital flows, which are subject to the rapid and frequent withdraws when an economy is in turmoil, are not associated with long term investment growth and will not contribute to long run economic development. Short -term capital flows often play influential roles during the time of crisis. Similarly, Jagdish Bhagwati (1998)[5] finds that free capital mobility, leading to excessive short-term capital borrowings, was the main cause of the Asian crisis in 1997. Asian economies, including Indonesia, Malaysia, South Korea, Thailand, and the Philippines, have gained two folds of capital inflow from 1994 to 1996, and suffered from the sudden massive capital outflows prior to the crisis hitting Asian economies in 1997. This financial volatility and instability is the "downside of the free capital mobility"[6] that has to be considered seriously by any policymaker. Therefore, the rationale behind the Tobin tax is to ameliorate, if not eliminate, this instability caused by the short-term speculation in currency markets by levying taxes on spot currency exchange transactions.

2 Mckinnon (1973) and Shaw (1973)
3 **Devereux and Smith (1994)**
4 Stiglitz(2000)
5 Jagdish N. Bhagwati, "The Capital Myth: The Difference between Trade in Widgets and Dollars" May/June 1998 issue, *Foreign Affairs*
6 Jagdish N. Bhagwati, "---, the downside of the free capital mobility arises." In the"The Capital Myth: The Difference between Trade in Widgets and Dollars" May/June 1998 issue, *Foreign Affairs*

Recent research provides evidence of association between the cross-border capital transactions and income and consumption volatility, especially for developing and underdeveloped countries. By decomposing the effects of financial liberalization, Ranciere, Tornell, and Westermann (2008) find that liberalizing cross-border transactions increases the possibility of financial crises and in turn leads to growth loss. Schmukler (2004) also pointed out that the benefits from the risk diversification might not be as much as investors' expectation due to the potential high correlations among global markets after financial integration. Furthermore, from the policymakers' perspective, allowing free capital flows across borders inhibits difficulties in regulating and supervising the domestic financial system.[7]

Indeed, for the past few decades, there are countries that did not show strong progress and suffered a series of financial crises even with liberalizing foreign capital transactions and domestic financial markets. For instance, Malaysia, a financial liberalized country, had experienced contracting economy since the advent of financial crisis in 1997. The negative private capital flows caused the collapse of the financial and foreign exchange markets, with its GDP growth declining from 7% pre-crisis level to a negative 6.7% at the height of the crisis in 1998. Several other highly open Asian countries, such as Indonesia, Thailand, and Philippine, suffered similar fates during and after the crisis.

Camdessus (1998) and Chow (2000) both attributed Asian financial crises in 1997-98 to the twist of sequential order of financial liberalizations not the financial liberalization per se;[8] From the case of Korea and Thailand where the disorderly capital account opening policies resulted from political pressure, Chow (2000) pointed out that economies will not be benefitted from international capital flows unless " an optimum sequencing order" is observed (McKinnon 1973) and the financial system is well structured and supervised. Cole and Kehoe (1996)[9] claims that it was self- fulfilling currency crisis triggered the 1994-95 Mexican financial crisis; similarly, this self-fulfilling mechanism in which international investors lose confidence in investing government bonds could as well explain the ongoing European sovereign debt crisis. Bekaert, Harvey, and Lundblad (2005) not only find that capital account opening is associated with factor productivity which accounts for nearly two thirds of the economic growth but also prove that the financial openness does not induce financial crises**.** It is the high leverage of banks, not openness, to increase the risk of crisis.[10] By confirming the dual effects of financial liberalization, Ranciere et al. (2008) confirm that the growth gains still outweigh the growth loss by nearly 1% of growth rate.

Thus, many researchers started to cast doubts on the fast pace of financial openness with negative empirical results of the effects of financial openness on growth. In other words, the conventional wisdom that financial liberalization leads to output growth has been challenged. Therefore, policymakers mainly based one the two contrasting views of financial liberalization to determine if financial liberalization should be executed or the degree of the financial opening. Nonetheless, literature continues to deliver empirical evidence of the positive impact of financial liberalization on growth. Quinn (1997, 2008) claims that the change in financial regulation is positively associated with long-run economic

7 Schumkler (2004)

8 Chow and Gill (2000) (eds) "Weather the Storm". Brookings Institution Press. In chapter eight, "What We Have Learned from the Asian Financial Crisis", of this book (p.218), Chow further argued that "financial liberalization is often undertaken without following a proper sequential order...Many economies opened financial markets without adequate time to build necessary supervisory structures."

9 Cole, Harold L. and Timothy J. Kehoe (1996)

10 Bekaert, G., C.R. Harvey, and C. Lundblad, (2011)

growth by employing capital account openness as an indicator of openness. Applying equity market liberalization dates as an alternative measure of openness, Bekaert, Henry, and Lundblad (2005) found that liberalizing domestic capital markets leads to 1% increase in annual real economic growth. Summers (2000) adds that the increased financial openness has proven to be one of essential policies for countries that seek to improve their national income level.

Moreover, a growing number of empirical studies show no evidence on the effect of financial liberalization on economic growth. For example, by surveying fifty-seven countries from 1980-2000, Edison et.al (2002) do not reject the null hypothesis that financial openness has not effect on growth, even when comprehensive macroeconomic variables are controlled for in their model. Additionally, Prasad, Rogoff, Wei, and Kose (2003) do not find a strong supportive association between financial liberalization and economic growth or consumption volatility.[11] However, their paper shows that the impact of financial liberalization could be conducive to growth when combined with transparent government operations and good quality of human capital. That is, liberalizing financial market shows conditional impact on economy.

Another branch of literature on the effect of financial liberalization focuses on the impact of financial market opening on capital allocation efficiency. Cho (1988) documents empirical evidence of the substantial improvement in capital allocation of credit as measured in the reduced variation of firms' borrowing costs, after the Korean government started to implement various financial liberalizations since 1980. In addition, Abiad, Oomes, and Ueda (2008) showed robust evidence that financial liberalization promotes capital allocation efficiency due to reduced variation in expected returns to investment. In their research, a proxy for financial liberalization was used in place of the dispersion in Tobin's Q across firms in five emerging economies. Similarly, Umutlu, Akdeniz, and Salih (2009) study twenty-five emerging countries and find the degree of financial liberalization inversely related to the total volatility of stock returns, even after controlling for firm size, liquidity, and crisis factors.

1.2 Stylized Facts across Seventeen Countries

This study selects seventeen Asian countries as sample data and covers the time period from 1980 to 2010 to analyze how international financial liberalization, such as cross-border capital transactions, affects growth across selected Asian economies. These seventeen Asian countries include: advanced economies – Hong Kong, Japan, Korea, Singapore, Taiwan; developing economies - China, India, Indonesia, Malaysia, Pakistan, Philippines, Sri Lanka, Thailand; and underdeveloped ones - Cambodia, Laos, Myanmar, Vietnam. Data is from the most recent three decades for two reasons: 1) most Asian economies launched financial liberalization policies in the beginning of 80s; 2) the dataset spanning for thirty years allows for the estimation of long-run growth trend. There are two reasons that these select seventeen Asian economies are a good sample for this study.

First, these Asian economies have increasingly gained importance in world economy in 21st century. According to the World Bank, these seventeen Asian economies have contributed close to one fifth of the world GDP in 2011. Over the last decade, all these Asian economies continue to enjoy sustainable growth for the industrial ones, or expand rapidly for the emerging and underdeveloped ones, whereas western countries are either still suffering economic crises or trying to come out of recessions. In the Asia Pacific area, economic leaders such as Japan, Singapore, and South Korea, along with other emerging countries, such as China, India, Indonesia, Malaysia, Myanmar, Philippine, Thailand, and Vietnam, all have

11 More detailed discussion of the papers will be made in the literature review section.

shown persistent economic growth for the last two decades even after suffering the financial crises of 1997 and 2008. In particular, growth in these Asian economies is projected to be ranging from 5% to more than 7% compared to 3% of the world for next decade, according to the prediction of the World Economic Outlook of IMF[12]. Thus, the economic development of these countries is of interest for economists.

Secondly, following the trend of globalization beginning in 1980, Asian countries have been relaxing capital restrictions in order to promote growth. Economically advanced countries, including Japan and Singapore, have removed capital restrictions in the early 80s and maintained open trade policies since then. For emerging and underdeveloped countries in Asia, international financial integration has accelerated for the last ten years. In term of current account opening policies, these countries are eager to enter regional or global trade agreement and reduce or eliminate tariff or corporate taxes. For example, trade barriers have been gradually removed in China for the past decade. Strategically liberalizing the capital account to further attract foreign investments, Chinese government deregulated foreign capital investment for both inflows and outflows for the last few years. Foreign currency account restrictions are predicted to loosen soon. In mid-2005, renminbi (RMB) appreciated against US dollar by more than 15% following the new RMB exchange rate regime which allows market mechanism to come into play in affecting the exchange rate, while the Chinese government still holds main control over the price of RMB.[13] Another restriction easing is the recently lifted ban on domestic securities in RMB invested by qualified foreign institutional investors (QFII).

Moreover, India removed trade barriers for most of consumer products while still maintained restricted on certain service sectors to protect domestic industries. The same policies in terms of attracting import/export by singing free trade agreements, liberalizing the international capital ownership, and removing foreign exchange control while stabilizing exchange rate, have been implemented in the rest of the emerging markets: Indonesia, Malaysia, Thailand, and the Philippines. Even for the underdeveloped countries, such as Lao, Vietnam, and Cambodia started attracting foreign direct investment in late 80s and early 90s. Liberalizing capital restrictions and opening financial market as well as facilitating inward investment have become a necessary tool to stimulate domestic economic development. To aid in domestic infrastructural development through an easing measure on capital inflows, India government raises the ceiling of government bond holding by nonresidents. The government of the Philippines also took a measure easing on capital inflow control by eliminating repatriation requirement for the divestment proceeds from foreign investments. To develop a financial system and encourage capital flows, Cambodia's stock market commenced trading in 2001. Relaxing or abolishing on external borrowing is another easing measure implemented by officials. Once heavily controlled in the wake of 1997-1998 Asian crisis, the ban on the borrowing from nonresidents was lifted by Malaysian authorities in 2010. Similar measure appeared in India as well.

Notwithstanding the capital opening policies have been employed by all these seventeen countries for the past thirty years, or even earlier for several economic advanced countries, not all of them have shown sustainable growth. (Chart 1.1-1.3 show the relationships between growth and three financial openness indicators by country from 1981-2010.) These seventeen countries consist of high income economies, emerging economies, and the underdeveloped ones. The high income

12 See the discussion in April 2014 World Economic Outlook of IMF, Chapter 2: Country and Regional Perspectives

13 IMF Annual Report on Exchange Arrangement and Exchange Restriction 2005.

countries, including Hong Kong, Japan, Korea, Singapore, Taiwan, fall into the category of high income group based on their Gross National Income (GNI) per capita under the classification systems of World Bank. Any country with a GNI per capita of $12,746 or higher in 2013 will be classified into the group of high-income economies according to the up to date classification of the World Bank. The selected emerging economies here, including China, India, Indonesia, Malaysia, Thailand, and Philippines, are middle income countries with GNI per capita ranging from $1,045 to $12,746 based on the classification of the World Bank. We also choose several low income countries (GNI per capita is less than $1,045) as our undeveloped countries - Cambodia, Lao, Myanmar, and Vietnam- as most of the low income countries are now eager to liberalize economically and financially for the long term economic development. It appears that the economy in Japan has slowed down and went into the so-called "lost decade" in the last decades while their openness policies have been adopted and continued ever since 1980's. The emerging and underdeveloped ones have performed strong growth especially for the last ten years whereas the intensity of capital opening varies from countries to countries. According to KAOPEN (Capital Account Openness index) which is constructed by Chinn and Ito (2008) and ranges from the most restricted of -1.86 to the least of +2.44 and up, Japan and Singapore score 2.44 which indicates the least restricted, while China and India scored the -1.16 since 1993 to present. Indonesia scored high in 2.44 in 90's then constrained capital transactions after 1997 currency crisis thus scored down to 1.1 till now. The rest of countries scored from -0.11 to -1.16 in the last ten years. More information about KAOPEN will be discussed in next section.

1.2.2. Overview of the financial openness policy of the seventeen countries:

This section briefly summarizes the characteristics of the sample countries; the main sources of information are International Monetary Fund and World Bank.

A) Advanced economies:

Hong Kong:

Hong Kong has one of the world's highest sustainable growth since 1980. As one of the major international financial center, Hong Kong has been attracting global businesses for the free trade environment, no restrictions on capital investment, no exchange rate controls, and highly efficient financial markets for decades. According to the Index of Economic Freedom issued by the Heritage Foundation, Hong Kong has been ranked the top among 186 countries in the world.

Japan:

Japan has been maintaining current account liberalization policies since 60s by large exports and imports raw materials. In terms of capital account, Japan had held tight control over capital flows in 50s and 60s. Owing to deregulation in 70s, both foreign direct investment and portfolio investment that are two major capital flows had grown rapidly in 80s. In particular, Japan has experienced a steady growth in both capital inflows and outflows: starting in 1980, the foreign asset and liabilities in absolute terms accounted for 28% of GDP and then reached almost 100% of GDP in early 90s; by the end of 2010, the sum of the magnitude of capital inflows and outflows reached almost 200% of the GDP.

South Korea:

Starting in early 60s, South Korea - one of the fast growing economies, has been an export- oriented country and the domestic market has been gradually opened for imports with exception of agricultural products. At the same time, to spur growth from the war, South Korean government started to allow for foreign capital investment to supplement the low saving rate by enacting the Foreign

Capital Inducement Act in 1960. However, this early inflow capital was only limited to select manufacture sectors. The active liberalization policy towards FDI has not been promoted until late 90s. After suffering from 1997 Asian financial crisis, in contrast to other countries that mainly held conservative openness policy, the government instead promoted active FDI policies to attract foreign investment by allowing for cross-border merges and acquisitions in 1997, lifting bans on foreign land ownerships in 1998, etc.

In order to encourage foreign portfolio investment after the financial crisis, Korean government removed the cap that would otherwise limit the daily transactions by foreign investors in stock market. This capital liberalizing policy drove up the foreign share of equity market from 11.9% before the crisis in 2005 to 30% after crisis from 1998 to 2000.

Singapore:

Singapore, the highly liberalized economy, benefits from free international trade and foreign direct investment. With trade liberalization policies promoted by government, Singapore's importing and exporting volume reached four times GDP from 2008 to 2011.

With efficient infrastructure and sound financial system, Singapore has become the main destination of foreign direct investment portfolio investment. Thus Singapore benefited from the influx of international capital. The rapidly rising investment activities by their residents in neighbor countries such as China, Malaysia, Hong Kong, and India have driven up the investment outflows.

Taiwan:

An export-oriented economy, Taiwan has been maintaining open policies favorable towards international trade and foreign investments for the past few decades. Since Taiwan has experienced more than 5% annual GDP growth on average for the last three decades, most studies attributed Taiwan's sustained growth to the effort of liberalization economically and financially. Due to the open policy in foreign direct investment and financial markets, the industries in Taiwan have grown and been competitive with the capital infusion and technology transferring.

According to the statistics provided by UNCTAD (United Nation Conference on Trade and Development), Taiwan's FDI has risen steadily from 35% of GDP in 1980 to 60% of GDP in 2010.

B) Developing countries:

China:

Since 1978, China has undertaken liberal policies to attract foreign capital for growth through permitting foreign direct investment in several cities along the coast. Since then, the government had expanded the liberalization through strengthening domestic infrastructure, institutionalizing the market-oriented economy, and relaxing the laws to attract multinational corporations.

Ever since China accessed to the World Trade Organization in 2001, China has further been liberalizing their current and capital accounts to fully comply with the regulations under international opening policies under WTO. Not only has China become the leading trading nation by minimizing tariff and non-tariff trading barriers in goods and services across sectors substantially, but also China has become the major destination of global capital investments. The foreign direct investment has accounted for less than 1% during the 80s due to restricted regulations for protecting domestic industries from foreign ownerships. Through liberalizing the laws that govern the legal entities of foreign direct investments and opening up selective capital markets for portfolio investment, the amount of capital investment flowing into China from the rest of world has been drastically rising. The inflow funds from global markets have actively invested in China in the forms

of foreign direct investment across industries, portfolio equities and bonds, and other types of capital instruments. In terms of exchange rate regime, starting in mid-80s, China had conducted a controlled float exchange rate policy then in 90s, the Chinese exchange control regulations have been gradually relaxed by allowing foreign currency transactions through authorized banks for export and import trades.

India:

India had been a closed and inward-looking economy up until 1991. Under the economic reforms implemented by the new political regime in 1991, international trades were liberalized by reducing tariffs on imported goods, taxes on exported goods and quotas as well as deregulated foreign direct investment and portfolio investment. In 2005, India government substantially liberalized the foreign direct investment in many sectors by allowing non-residents to take a full ownership or raising the participations of foreign equity stakes across sectors.

Indonesia:

Indonesia has remained an open economic environment since late 1980 in both international trade and foreign investment. In 2012, foreign fund accounts for two thirds of the market capitalization. Overseas capital investments are strongly needed and officially welcomed. The major impediment that discourages the investment abroad is the ineffective law enforcement.

FDI inflows slowed down after financial crisis. Soon after the crisis, in 1999, Indonesia was able to recover by government policies, including taking over nonperforming loans and restructuring debts. And since the outbreak of financial crisis, FDI approvals by the officials fell.

Malaysia:

As one of the founders of ASEAN Free Trade Area, Malaysia has been promoting international trades among members and continued to enter free trade agreements to integrate its economy into global market.

Malaysian has long been one of the most favored investment destinations by foreign investors since 1986 when the government announced a series of measures to welcome foreign direct investments, such as tax exemptions and liberal rules. The rising trend of foreign investments in Malaysia discontinued due to 1997 financial crisis. The foreign capital inflows had declined from 1998 to 2001.

However, by adopting effective measures, including foreign exchange controls, local currency de-internationalization, and foreign ownership deregulation, in the aftermath of the Asian financial crisis from 1997 to 2000, Malaysia was able to regain the foreign investment confidence. The inflows of cross-board investments started to increase in 2002.

Pakistan:

In spite of the political instability and poor infrastructure, Pakistan has been rapidly growing since the beginning of the 21st century. The rapid economic growth of this semi- industrialized country is due mainly due to the transformation from Agricultural to a manufacture and service economy and the liberalization on trades, FDI and portfolio investments.

Both imports and exports in Pakistan have been increasing since 1980. In 2012, the FDI flows accounted for 12% of Pakistan's GDP compared to 2% back in 1980. Portfolio investments from foreign investors have risen as well for the past two decades thanks to the openness in financial market.

The Philippines:

After the long dictatorship of F. Marcos, the Philippines had undergone a series of economic reforms. Now the Philippines, a newly industrializing country, has showed steady growth over the past decade and became one of the major investment destinations.

With the rising of international trade volume since 1990 and currently both imports and exports accounting for 40% of GDP in 2012, the Philippines has remained liberalized foreign trade policies.

Despite facing similar challenges, such as corruption, poor infrastructure, and bureaucracy, as its emerging counterparts to attract investments abroad, the Philippine government has been liberalizing long-term foreign investment for economic growth.

FDI inflows declined beginning the third quarter of 1997 following the Asian financial crisis.

Sri Lanka:

Sri Lanka has experienced highly economic growth especially for the last decade. Expected to be higher than 10% in next ten years, annual GDP of Sri Lanka grew from 5% in 2000 to more than 7% in 2010 with a temporary decline in 2009 due to the financial crisis.[14]

The growing volume of imports and exports as well as FDI contribute to Sri Lanka's economic success.

Thailand:

Thailand has been one of export-led economies as most neighbors in Asia. From 2003 to 2010, Thailand has continued to welcome international trades by negotiating free trade agreements for selected products with various countries, including China, India, Australia, Japan, and United States.

Even though attracting foreign investment is one of the reforms leading to growth, Thai government imposed restrictions on capital account transactions by passing the 1999 Foreign Business Act. In this Act, 49% of foreign ownerships of equity are capped for many sectors, such as media, agriculture, and construction. In addition, political and macroeconomic instabilities, corruptions, and inefficient institutions discourage foreign capital investments.

Surprisingly, the inflows of FDI to Thailand had been stable ever since the 1997 financial crisis.

C) Underdeveloped ones:

Cambodia:

It is not until 1989 that Cambodia implemented open market system and embraced international integration. The major capital resource is from foreign aid throughout 90s and started to attract investment overseas after adopting an economic reform in 2006 to improve the infrastructure and corruption conditions.

According to IMF, both imports and exports of Cambodia have been rising since late 1980. Foreign direct investment net inflows continued to rise from 1.37% of GDP in 1992 and reached more than 8% of GDP in 1996. The FDI started to fall from 1998 after Asian crisis broke through to 2003. Foreign investors regained the confidence and pushed the investment to the record high of 10% of GDP in 2007. In terms of portfolio investment in equities, due to the fact that the Cambodia securities exchange-CSX was not established until 2010 and only one listed company is traded, the channel of foreign financing is very limited.

Laos:

As one of the poorest countries in Asia, Laos has relied heavily on foreign aid and loans as capital resources required for growth. Not until 1989, Lao government lifted trade barriers, promoted foreign investment and maintained a market exchange rate. The financial development has progressed slowly and the domestic stock market was inaugurated in 2011 and so far in 2013 only two company stocks are listed.

Myanmar:

14 "Sri Lanka". *International Monetary Fund*, July 2014.

Myanmar, once the largest exporter of rice, have suffered the macroeconomic and political instability ever since its independence in 1948.

Even though the liberalization of foreign investment in 1989, the country would not induce much of investment overseas due to the insufficient infrastructure, poor managed institutions and corruption. In addition, in 2003 US and European Union imposed sanctions and embargos against Myanmar that further deteriorated the international trades.

The financial system of Myanmar is under developed: the Myanmar securities exchange was formed in 1996 but only two firms are listed as of 2012; major bank crisis in 2005 brought down investment climate.

Vietnam:

Vietnam started to integrate into the global market economically and financially mainly after the dissolution of the Comecon in 1991. Ever since then, Vietnam has been liberalizing their current account through an open trading policy and foreign direct investment has been encouraged. Although the short history of their stock market established in 2000, international capital investment has been encouraged by reduced foreign equity ownership limit and full ownership for international bond investors since 2003. The exchange rate is under market - oriented "crawling peg".

Following the 1997 Asian Financial crisis, Vietnam had one time encountered contracted economy for three years by limiting foreign trade. Overall, throughout the past three decades, Vietnam has been mainly maintaining openness policies to attract foreign capital to support domestic economic development.

1.3 Statement of problem

The main contributions of this study are the following:

1) The purpose of this study is to investigate the financial openness effect on economic growth in Asian economies. Most of the literature surveys the sample countries across continents but few provide the effect of financial openness on growth for Asian countries. The growth effect of financial openness will be tested across countries and income groups.

2) Both de jure and de facto measurements of financial liberalization are employed in this study. Unlike most of empirical literature considering the coarse index AREAER (Annual Report on Exchange Arrangements and Exchange Restrictions) of the IMF, this study uses a new indicator, KAOPEN, as the de jure proxy of financial openness measure. KAOPEN index is finer and more accurate compared to the IMF's index, as KAOPEN contains more information by including four opening categories rather than IMF's binary indicator. As for de facto proxy, this study considers the quantitative capital activities as the de facto proxy. In particular, two major capital activities are employed as the measurements in our analysis for testing growth effects of financial liberalization: foreign direct investment (FDI) and portfolio investment flows. This study is an attempt to improve the assessment by separating capital inflows from outflows in empirical examination. Therefore, this study ultimately uses four de facto proxies of financial liberalization: inward FDI, outward FDI, Portfolio Investment in assets, and Portfolio Investment in liabilities.

3) In terms of econometrics techniques, two panel estimation procedures are conducted for: least square with country and time dummy variables and system GMM. One advantage of conducting system GMM instead of difference GMM is that time invariant or country specific variable can be incorporated in system GMM. While most earlier studies provided results with cross-sectional estimations that inhibited biases, this study utilizes panel estimators with country-specific effects seek to deliver more efficient results.

4) The last three decades of dataset are included in the analysis, from 1980 to 2010.

5) This study investigates the growth effect of financial openness as well as the interactive effects of financial openness.

The organization of the paper is as follows: Section II discusses financial liberalization indicators employed in literature. Prior studies on the relationship between the financial liberalization and economic growth are reviewed in the second part of this section. Section III introduces the model, data, summary statistics, and various econometric methodologies implemented. Section IV analyzes empirical results. Finally, Section V concludes and with policy implications based on empirical results.

2. Financial Liberalization and Economic Growth

2.1 Financial Liberalization Indicators

The broad definition of financial liberalization refers to free cross-boundary capital flows resulted from less capital restrictions imposed by government and more free market role in capital market. Ever since the debate over the impact of financial liberalization on growth started, many research studies have presented different findings. One of the main reasons that complicates empirical analysis and has caused the mixed results across studies is the variety of the measurements of financial openness proxied in the literature. Therefore, in this section provides a comparison on characteristics, advantages and disadvantages of a range of different financial openness indicators employed in current studies.

At present, more than ten different types of financial openness indicators have been used as proxies of financial liberalization. There are mainly two types of measures of financial openness employed in the literature: de jure and de facto measures. The former, determined by policy makers, reflects the degree of a country's restrictions on capital market integration, international financial investment, and foreign exchange rate regime; the latter captures the actual capital account flows across border. [15] Supposedly, the de facto measure should reflect the de jure restriction imposed by officials, but for certain economies, this is not the case. There are four scenarios showing how these two measures are related: countries with openness policies experiencing high volume of capital flows, as industrialized countries; countries with openness policies but still facing low volume of capital flows, as certain less developed countries with undeveloped infrastructure; countries with highly regulated and thus restricted policies but still attracting large financial flows, as emerging economies; and countries with fully closed policies resulted in low flows of capital. Thus, it is essential to consider these two types of measures in the analysis to test for the robustness of the effect of financial liberalization on growth.

De jure indicators employed in most of the early literature differ somewhat but are all developed based on IMF's record of capital account restriction for countries. Starting in 1966, the IMF issues an annual Report on Exchange Arrangements and Exchange Restrictions (AREAER). Drawing on information provided by member countries and observed by IMF's staff, this IMF's restriction report reflects capital account information in the following categories: capital account openness, current account openness, surrender requirements on the proceeds of export, and exchange rate practices. Earlier international finance literature directly used IMF's report as their openness measurement or generates their own de jure indicators with the information mainly from the category of capital account openness for their studies.

15 Kose, Prasad, Rogoff, and Wei, (2006). "Financial Globalization: A Reappraisal" *International Monetary Fund*, 2006

All these categories are reported in the form of binary variables. These binary indicators show either 0 when a country is always restricted or 1 when never restricted. Updated annually, this IMF report provides restriction information of member countries in terms of exchange rates and trade practices and capital control. This report, namely AREAER, spans 188 countries and is considered the largest sample coverage available.

Several challenges should be highlighted for considering the data source derived from this apparently comprehensive AREAER report. First, this binary indicator assigned based on IMF's judgment does not provide the level of a country's capital account openness. Second, as long as one restriction imposed, this country scores 0 regardless other openness policies might be in place. Third, the detailed composition of the openness which could be sensitive to analysis cannot be found in this on/off indicator. For example, according to IMF's record, a country that is open to foreign investment but prohibits residents to invest abroad scores the same as a country that imposes restrictions on foreign investment but no restrictions on their residents' investment abroad. Fourth, there are two different dataset formats for AREAER. To improve the coarseness of earlier version (before 1996) discredited by literature, starting in 1996, IMF has extended the old version by including thirteen subcategories in the report to provide additional information on capital control. Although this modification provides more detail information, a data inconsistency arises. Therefore, the dataset presents inconsistent formats: four main categories up to the 1997 publication for the record of 1996, but these four coarse categories had been disaggregated into thirteen categories after 1997 data sets. Thus, there was a disruption in the series and the dataset before 1997 and after 1997 are inconsistent. Therefore, for the contemporary research including our study that often requires dataset for multiple decades finds this IMF indicator inappropriate for empirical analysis.

Although IMF's annual report does not provide intensity and features of capital account openness (or restriction), the number of years in which a country has opened capital markets is recorded in IMF's AREAER report. Therefore, studies such as Grilli and Milesi-Ferretti (1995), Rodrik (1998) and Klein and Olivei (1999) generate a variable ranging from 0 to one as an alternative indicator by calculating the proportion of years that a country has opened capital markets during certain period. For example, based on the IMF's record, Japan had open markets for eight years during the period of 1976-1985 and thus Japan score 0.8 in this index. The advantage of this "proportion" index is that it reflects the degree of the openness rather than the binary index. However, the shortfall of this index is that the duration of the openness is not necessary consistent with the timing of the undertaking the openness policy. For instance, in case of Japan, IMF's record does not show the exact year in which Japan had opened up their capital markets. It might be the case that Japan's capital markets had been opened for the first eight years (from 1976-1985) out of this ten-year period then closed for the last two years (1985-86). Or Japan had closed capital markets for the first two years then opened till the end of the period. Another possible scenario is that Japan had not continuously liberalized or restricted their capital markets over the ten-year period.

In order to capture the intensity of capital transaction controls other than the "proportion" index described earlier, Quinn (1997) develops coding rules by assigning scores ranging from 0-4 associated with the intensity of capital controls based on the capital and current account restrictions reported in AREAER. Rather than IMF's on/off indicator, Quinn's measure quantifies a nation's capital restrictions by ranking the control instruments. For instance, 0 will be assigned for the country that capital account transactions are completely restricted, 0.5 will be assigned if some regulations are imposed, and 1 will be assigned when heavy taxes

are levied on capital transactions. In general, Quinn's indicator outperformed IMF's coarse one for two reasons: first, Quinn (1997) was the first to classify capital flows into inflows and outflows; second, Quinn's measure quantifies the level of de-jure controls a country imposes. These assigned values are financial indicators and they are available annually since 1950, covering 64 countries (OECD and non-OECD). However, this subjective measure draws some criticism since it may not capture the direction of capital flow restrictions and the types of transactions targeted.

KAOPEN is another de jure financial liberalization measure, constructed by two economists, Chinn and Ito, and is the most frequently used by current studies. In order to better measure the intensity of cross border financial openness, Chinn and Ito (2008) constructed an index based on the four assigned binary indicators (the presence or absence of multiple exchange rates, current account restrictions, capital account restrictions, and the repatriation and surrender of trading proceeds) from the tables in the IMF's AREAER by reversing the value of IMF binary variables which originally indicate more controls when the value is higher. Instead, 1 will be assigned when restrictions are lifted (open) and 0 when restrictions imposed (close) under each category in constructing KAOPEN. For the variable of capital account restrictions, the value takes on the average of shares of a five-year window that capital restrictions were not in effect. By conducting standardized principal component analysis, the value of the first principal component is KAOPEN index. The important advantage of this de jure alternative is first the comprehensive openness information obtained by incorporating four main financial liberalization policies related to the capital flows instead of focusing solely on capital account transactions as in Quinn (1997). Second, KAOPEN not only captures comprehensive restrictions but also inflow and outflow transactions of a country. Third, Chinn and Ito (2008) find the correlation between KAOPEN and IMF AREAER is more than 80%. Another advantage of this publicly available index is that it is frequently updated and currently encompasses 182 countries for the period of 1970-2011. Nevertheless, critics have raised the concerns on this index. First, the information required to construct KAOPEN is based on AREAER and the criteria of opening policies has never been clearly defined in AREAER.[16] In addition, the five year average of the capital account openness could not show the change of policies in a given year and the country needs to wait five years to be assigned 1 in this subcategory even with a fully opening policy executed that could arise measurement error issue. This index has a mean of zero and it ranges from minimum value of -1.86 to maximum value of 2.44 for all 182 countries surveyed between 1970 and 2011.

A growing number of studies such as Bekaert et al. (2005) and Chari and Henry (2004) have considered stock market openness as a proxy for financial liberalization instead of conventional capital account openness. The indicator is based on the official date of equity market liberalization. The binary variable takes on the value one when foreign investors are able to own domestic equities and zero otherwise.

From the policymakers' perspective, de jure measures might be more relevant since the authorities have control over policy implementation. Nevertheless, de facto measures are gaining importance in the literature as the de facto measures focus on quantitative measurement of financial openness as opposed to the qualitative de jure measurements, and thus may better capture the actual effects and the intensity of liberalization. These de facto measures are especially important when the focus is on countries with lax regulations.

16 See the discussion in the paper by Karcher and Steinberg (2013)

Most of these outcome-based measures involve capital account inflows as well as outflows. For example, Lane and Milesi-Ferretti (2007) proxy financial liberalization by aggregating a nation's gross foreign direct investment and portfolio of asset and liabilities. It is done via the accumulated inflows and outflows of foreign capital in sample countries as a share of GDP. This stock of capital flows indicates the diversifying opportunities of nonresidents' investment in a country and residents' outward foreign investments. This most widely used de facto indicator covers 145 countries during the period of 1970-2010. Recent studies decomposed the aggregation of capital flows into FDI and foreign portfolio investment as the openness indicator variables due to the different nature of these types of investment tools.

Another type of de facto measure, proposed by Bekaert (1995), indicates the level of the equity market openness by identifying the ratio of the availability of foreign holdings to the total domestic equity market capitalization. As an alternative to measure the market liberalization by assigning either 0 or 1 based on if the equity market is accessible to foreign investors, this continuous variable quantifies the degree of equity market openness with scale 0-1 where two extreme opposites refer to fully open to foreign investor (1) or closed . Much research is done now by incorporating both de jure and de facto measures to provide a more comprehensive examination. This approach is done so as to capture more dimensions of financial integration, e.g., Edison et al. (2002) proxy four indicators: the degree of capital account restriction from the IMF as a de jure indicator and three other de facto indicators involving stock of assets and liabilities. Although this strategy intends to clarify previous results on the effects of financial liberalization, it tends to overlap information and presents itself with inter-correlation problems. Quinn and Toyoda (2008) point out that the variables that were assumed to be independent and were used in growth regressions turn out to be not independent but rather exhibit a strong correlation between them. The advantage of de jure measures is that they reflect policy levers, and thus results based on them may have policy implications for reforms that a government might consider. Their disadvantage is that they may capture poorly the actual degree of financial integration, either because the true nature of legal restrictions is erroneously measured, or because these government impediments are imperfectly enforced. Nonetheless, from the volume of the literature, authors' place more weight on the de jure measures, since the de facto ones represent equilibrium outcomes, and may be more noisy reflections of policy.

2.2 Literature Review

There has been little consensus in empirical literature over the effects of opening financial flows on the economic growth. Different estimation results stem from various financial liberalization indicator, econometrics techniques, and data coverage. This section surveys various studies that are most cited on this topic and provides detailed review of the papers along different dimensions, including the financial openness indicators, model specifications, methodologies, and main results. As shown in Appendix A, the literature surveyed is classified into three groups based on different measures employed: the first group of the literature considers de jure measures as the proxy of financial liberalization, the second one employs de facto measures, and the third group employs both.

The first group employing de jure measures in their studies include Quinn (1997), O'Donnell (2001), Klein and Oliveri (2008), and Baker (2005). These papers either employ IMF's AREAER record for the financial liberalization measure or construct their own measure based on IMF's record of capital restrictions imposed by countries as their de jure measures in the studies. Although de jure measures are commonly used in these empirical studies, ambiguous results

are still found. Quinn (1997) was the pioneer to create a financial liberalization index based on the IMF's capital account control report. The Quinn index quantifies the capital account control (or openness) by subjectively assigning scores within 0-4 range of scale for each country based on the narrative description provided by IMF and thus this Quinn index is more informative relative to IMF's 0 or 1 record of capital account control. The advantage of this manually adjusted index is that it is able to capture the intensity of the financial openness rather than IMF's on/off category. With data collected from 64 countries over the period from 1958 to 1988, Quinn (1997) is able to present positive effect of capital account openness on economic growth, by employing cross sectional OLS growth regression with a number of control variables. Quinn's result suggests that financial liberalization significantly improved growth. However, without the inclusion of trade openness in his regression, it raises concerns on the results due to the correlation between financial openness and trade openness.

Other studies have shown that liberalization policy may affect countries differently. By using Share measure (years of liberalization as a share of the years considered), O'Donnell (2001) documents that there is a positive impact of liberalization on poor countries but a negative effect on rich countries. Klein and Olivei (2008) find similar results that financial liberalization has greatly impacted solely the middle-income countries but not the poorest and the richest countries. Employing the date of equity market opening to foreign investors as a proxy for financial liberalization, Bekaert et al. (2005) implement a growth model that includes the ratio of trade to GDP as one of the control variables. Their study shows strong evidence that financial market opening leads to a 1% increase in annual GDP growth per capita. For comparison, two other de jure measures of capital account openness are used in Bekaert's (2005): IMF capital account openness and Quinn's measures. Interestingly, the results show that the growth effect is not significant with IMF indicator, but there is a strong growth effect with Quinn's measure.

Recently, a growing research area is to study the indirect benefits of international financial liberalization on economies and indicated the microeconomic effect of liberalizing the financial sector on the return volatility for firm level. In particular, several papers claim that liberalization leads to a decline of capital return volatilities, which in turn benefits the macro condition of the country. Abiad et al. (2008) study whether financial openness improves efficiency of capital allocation, as measured by the dispersion of Tobin's Q across firms from five countries: India, Jordan, Korea, Malaysia, and Thailand. In this paper, two proxies of financial liberalization are considered: the ratio of bank credit to GDP and the ratio of stock market capitalization to GDP. By controlling for stock market liquidity proxied by trading volume and trade openness that measures imports and exports, their paper finds that the Tobin's Q dispersions are greatly reduced and thus it implies that financial liberalization significantly improves efficiency in capital allocation.

Prasad et al. (2003) find no robust evidence supporting the effect of financial openness on economic growth. The paper reports that consumption might fluctuate in some countries where one might interpret the liberalization policy as harmful to the economy. It is worth noting that their results also show that countries with better macroeconomic policies, including more stable political environment, more sound financial system, more stable and transparent government operation, better quality of human capital, and more sound financial system, tend to perform better in attracting foreign direct investment. The authors conclude that the benefit of financial openness can only be derived fully with preconditions of systematic stable macroeconomic frameworks. This finding is consistent with the result

documented in the paper by Rodrik (1999) that, in order to be benefitted from the financial openness, countries require good domestic governance with regulatory policies and supervisory agencies.

While most of the financial openness literature in the field of international economics investigates whether the liberalizing financial markets leads to growth or crisis, some researchers claim that trade openness also plays a determined role in promoting economy. Their claim is documented by the link between trade and financial openness. Aizenman (2009) analyzes the relationship between financial openness and trade openness. He proxies capital inflows and outflows as a financial openness measure, and exports and imports as the trade openness measure. The main finding in this paper is that greater trade liberalization will inevitably lead to financial openness. However, his analysis focuses solely on the impact of trade openness on financial openness and not the reverse feedbacks.

Recently, many studies utilize both de jure and de facto measures to proxy financial liberalization in their research. Employing four different types of proxies for financial liberalization, and a variety of econometric approaches, Edison et al. (2002) find no support for the effect of financial openness on economic growth even when controlling for macroeconomic characteristics from data of fifty-seven countries over the period from 1980 to 2000. To assess the potential effects on certain countries, they add several interaction terms between financial openness indicator and several key macroeconomic conditions in the model specification. The study presents mixed results. First, they find no significant result of employing both types of liberalization proxies for either poor or rich countries. Second, by considering fiscal surplus as one measure of macro policies, they found that the interaction term does not enter significantly. Third, by using inflation as the other measure of policies, their results suggest that the effect of liberalization is inversely related to inflation. Furthermore, the result is not robust across four proxies.

3. Model, Data, and Methodologies

3.1 Growth Model and Data Description

This dissertation is to answer the core questions whether financial opening affects economic growth among these seventeen Asian economies. By following the framework of Edison et al. (2002), we construct our growth model in which financial openness along with other growth determinants affects economic progress.

We consider standardized growth model in our study:

$$Y_{it} = f(FO_{it}, X_{it})$$

where

Y_{it} : real per capita GDP growth rate

FO_{it} : one of the five measures of financial Openness indicators

X_{it} : a matrix of control variables

The following remarks provide details about all variables employed in the model.

(a) The dependent variable in the growth model

Real per capita GDP growth rate represents the dependent variable that measures a country's growth in the model. The growth rates collected from Penn World Table 7.1 are adjusted for the purchasing power parity. Table A.1 shows the rising trend of economic growth among these Asian economies over the last three decades. The second, third, and fourth columns in Table A.1 report average growth rate by country for each decade, respectively. The last row of Table A.1 shows that on average, all these Asian economies grow 3.87% in 1980s, 3.90% in 1990s, 4.72%

in 2000s) while the increases intensify during the last decade and mainly focus on the emerging and less developed economies.

(b) The financial openness proxies

In this study, financial openness refers to the extent to which a country's cross-border capital transactions that comprise not only capital inflows contributed by the global investors but also capital outflows stemming from the home investors' global diversification portfolios. Two types of financial openness proxies are employed in the model: de jure and de facto.

i) De jure proxy (officially announced restriction)

This study uses KAOPEN index as the de jure financial opening measurement. As mentioned earlier, KAOPEN is constructed by Chinn and Ito (2006) and has been regularly updated as one advantage. The second advantage is that this index captures four categories of capital restrictions and provides more information compared to the coarse measure (1 or 0) based on the IMF's Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER). In particular, KAOPEN absorbs four categories of countries' official opening tendency (current account, capital account, exchange rate regime, and the surrender requirement of export proceeds) according to the IMF's record and constructs KAOPEN index which takes on values from -1.86 to +2.44 that indicates the higher the number, the less restricted. As Table A.3 indicated, advanced countries in our sample except Korea, such as Hong Kong, Japan, and Singapore all score higher than 2 and considered more financially opened economies. While all four underdeveloped countries stay still financially closed and receive negative KAOPEN index, emerging markets show mixed scores (China, India, Philippines, and Thailand scores negative but Indonesia and Malaysia score positive). KAOPEN serves as a popular de jure proxy not only is the dataset available publicly but also highly correlated to the IMF indicator as well as it quantifies the intensity of capital controls.

ii) De facto proxy (quantitative capital flows)

Two types of capital activities are measured to detect the degree of a country's financial openness: foreign directive investment (FDI) and portfolio investment.

1. Defined by the IMF and UNCTAD, "FDI refers to a cross-border investment associated with a resident in one country having control or a significant degree of influence on the management of an enterprise that is resident in another economy"[17]. The controlling or investment entity could be a foreign direct investor or a parent enterprise. According to the UNCTAD, FDI includes not only the transactions between two entities but also all subsequent transactions between the two entities and among all immediate foreign subsidiaries and associates.[18] The rationale of choosing FDI as a financial opening proxy is that it is considered the major external capital sources by foreign investors for domestic enterprises. FDI is measured by the foreign ownership of domestic businesses and mainly includes three components: the share of the capital, retained profits, and intra-company loans. We use the database from United Nation Conference on Trade and Development as our data source. In Table A.1, the columns of Inward FDI stock and Outward FDI stock report the average as percentage of GDP over the last three decades by country.

17 The Coordinated Direct Investment Survey (CDID) by IMF defines Foreign Direct Investment:" direct investment arises when an investor resident in one economy makes an investment that gives control or a significant degree of influence over the management of an enterprise that is resident in another economy."

18 From the note of the summary of Inward and Outward foreign direct investment stocks, UNCTAD 2014

2. Another de facto financial openness indicator considered in this study is foreign portfolio investment. Similar to FDI, foreign portfolio investment provides another cross-border measurement for openness. Foreign portfolio investment includes the financial claims of equity and debt transactions and positions other than those included in direct investment or reserve assets.[19] In contrast to FDI, foreign portfolio investment plays a less or no role in business decision making process. However, the amount of foreign portfolio investments has been rising due to the higher liquidity and flexibility relative to FDI investments for the past three decades. This study draws two more de-facto indicators - foreign portfolio assets and foreign portfolio liabilities- from the updated database of the External Wealth of Nations Mark II database from Lane and Milesi-Ferretti (2007). This dataset has been widely employed by many empirical studies and it contains data for the period 1970-2011 and for 188 countries. Since our study traces back to 1980 and IMF's dataset only covers data for the last two decades, the LMF dataset provides good sources for capital flows data.

3. Many empirical papers aggregated both capital inflows and outflows as the proxy. As described earlier, Lane et al. (2007), Edison et al. (2002), and Prasad et al. (2003) all employ bilateral capital account transactions by combining the amount of assets and liabilities without the breakdown. However, theoretically, inward capital and outward capital are considered to have different impact on growth. Moreover, while most empirical papers use combined FDI and portfolio investment flows as the proxy, this study sets to report the growth effect of these two main types of capital account transactions separately. Thus, to capture the effects of both incoming and outgoing capital funds on growth, we employ both inward and outward of FDI and Portfolio investment as our financial opening proxies, namely FDI inflows, FDI outflows, Portfolio Assets (Portfolio investment outflows), and Portfolio Liabilities (Portfolio investment inflows). These are all stock measures and divided by GDP.

(c) The control variables

There are six control variables in the growth model including the initial income, schooling, government expenses, domestic credit to private sectors, terms of trade, and trade openness. First, this study employs lag of log income per capita as our initial income regressor. Secondly, the schooling measures the secondary school enrollment ratio which is the ratio of total enrollment to the total population. Thirdly, since government plays an essential role in the economic growth, the government expenses as a share of GDP, is another variable to be controlled for in our growth model. Fourthly, domestic credit provided to private sectors by domestic financial institutions as a percentage of GDP is employed as well in the growth model. This study refers it to a country's financial fundamental led to economic growth. Fifthly, another variable is controlled in this model is the terms of trade. A country's terms of trade is defined as the ratio of the price of exports to the price of imports. To prompt economic growth, many countries export goods and services overseas to take advantages of the global market in order to promote growth. However, a country might not benefit from rising exports if terms of trade deteriorates. In other words, a significant decline of the terms of trade can impede economic growth by offsetting the gain from exporting[20]. The last variable included in our model is Trade Openness as the growth effect of trade opening has been emphasized by countries. This study measures a country's trade openness by aggregating imports and exports. All datasets are collected from United Nation

19 Chapter 6 function categories, IMF
20 Bhagwati, (1998).

Conference on Trade and Development, World Bank World Development Indicators and Penn World Table 7.1.

Table A.4 summarizes the correlation relationships among all the variables, including dependent variable, five FL measures, and control variables in the model. There are three major correlations of the variables worth noting. First, we summarize the correlations between control variables and financial liberalization measures. 1) Trade openness is positively and significantly correlated with KAOPEN, FDI inflows, FDI outflows, Portfolio assets, and Portfolio Liabilities. It reveals that countries with high trading volume tend to be more financially open. 2) Similarly, initial income is positively and significantly associated with all five FL measures. It implies that richer economies tend to ease the capital restrictions and have more international capital flows. 3) Countries with higher education attainment tend to deregulate capital restrictions as the schooling is positively and significantly correlated with KAOPEN. Countries with higher education level tend to be more open to foreign investors to invest in domestic portfolio equities and debt markets as the positive and significant correlation between schooling and portfolio liabilities. 4) Government expenses are negatively, significantly correlated with KAOPEN, FDI inflows, and Portfolio Liabilities. Countries with large volumes of expenditures in public sector tend to be more restricted in capital transactions and discourage foreign direct investments and portfolio investments. 5) Domestic credit is significantly and positively associated with all five FL measures. It signifies that the economies with easing credit markets tend to have greater level of financial openness. 6) Again, corruption is significantly and positively correlated with all five FL indicators. It suggests that less corrupted countries (high score on corruption index) tend to be more financially open, as measured by de jure and de facto indicators. Second, among the measures of financial liberalization, KAOPEN is significantly and positively correlated with four other capital transactions. It shows that countries largely deregulated the capital restrictions have high volume of foreign direct investment and equity and debt portfolio transactions. Third, the correlations between economic growth rate and financial openness are . According to the first column of Table A.4, Growth is significantly and negatively correlated with KAOPEN but positively associated with FDI inflows.

Due to the data limitation, our research focuses on the following seventeen Asian economies: China, India, Indonesia, Japan, Hong Kong, Lao, Malaysia, Myanmar, Pakistan, Philippines, Singapore, South Korea, Sri Lanka, Taiwan, Thailand, and Vietnam. We collect annual data starting from 1980 to 2010. Table A.1 reports the growth trend of our sample countries. Table A.2 presents the summary statistics by country. Table A.3 describes all variables.

3.2 Methodologies

I perform Pooled OLS, panel procedures- random effects and fixed effects, dynamic panel system GMM, and two stage least squares as implemented in many prior studies to estimate whether the five liberalization proxies affect growth.

First, our Pooled OLS framework is to conduct analysis by pooling our dataset pertaining 17 countries from 1980 to 2010 and is based on heteroskedasticity-robust standard errors. The baseline regression specification is as follows:

$$Y = \beta_0 + \beta_1 FL + \beta_2 X + u \qquad (1)$$

Y represents three years moving averaged real per capita GDP growth rate

FL represents one of the five measures of financial indicators

X represents a matrix of control variables

u the error term

Second, scholars acknowledge the drawback of inefficiency by pooling cross-section and time-series data. Thus, we perform random effects analysis for our panel data in a generalized least squares (GLS) framework. By adding a time dummy variable, our specification of random effect is as follows:

$$Y_{it} = \beta_0 + \beta_1 FL_{it} + \beta_2 X_{it} + \alpha D_t + u_{it} \quad (2)$$

Y_{it} is the dependent variable where i=1…17, and t=1…30

FL_{it} represents one of the five measures of financial indicators

X_{it} represents a matrix of control variables

D_t represents Time dummy variables

u_{it} is the error term

The composite error term (u_{it}) includes country specific unobservable term (c_i) and an idiosyncratic error term (v_{it}) : $u_{it} = c_i + v_{it}$ [21]. Under the random effects framework, we assume that

$E = (c_i) = 0, = (v_{it}) = 0, = (c_i v_{it}) = 0$, $E = (c_i c_j) = 0$, $E = (v_{it} v_{is}) = 0$, and $\mathrm{var}(c_i) = \sigma_c^2, \mathrm{var}(v_{it}) = \sigma_v^2$. Third, we continue another panel procedure- fixed effects since there could be correlations between time invariant (country specific) components and control variables for our sample countries. We consider least square dummy variable (LSDV) structure with fixed effects for both countries and time periods for our fixed effect framework. Our LSDV model specification is as followed:

$$Y_{it} = \beta_0 + \beta_1 FL_{it} + \beta_2 X_{it} + \alpha_0 D_t + \alpha_1 D_i + u_{it}$$

Y_{it} is the dependent variable where i=1…17, and t=1…30

FL_{it} represents one of the five measures of financial indicators

X_{it} represents a matrix of control variables

D_t represents time dummy variables

D_i represents country dummy variables

u_{it} is the error term

3.3 Hausman Test

After running random and fixed effects regressions, a conventional test, Hausman test, is preformed to determine between random effect model and fixed effect model. The key difference between fixed and random effects is the orthogonality of the error terms. So, the null hypothesis of a Hausman test is that the error terms are uncorrelated with the regressors. Thus, fixed effects model will be more appropriate than random effects if the null hypothesis is rejected; otherwise, the random effects will be preferred if the test statistic is insignificant.

The statistic of Hausman test is

$$[\beta_{FE} - \beta_{RE}]' [\mathrm{var}(\beta_{FE}) - \mathrm{var}(\beta_{RE})]^{-1} [\beta_{FE} - \beta_{RE}]' \approx x^2$$

21 Wooldridge J. M. (2002).

Based on our Hausman test result with a p vale of 0.02 which means that we are able to reject the null hypothesis of no correlation between error terms and regressors. Therefore, our fixed effects model produces more appropriate estimators than random effects model does and we report the estimation result for our fixed effects model.

Fourth, for more consistent and efficient estimation, we implement dynamic system GMM panel approach proposed by Alrellano and Bond (1998). System GMM, unlike traditional one equation GMM, is consisted of two linear growth equations: one is in level and the other one is in differenced.

The so called Dynamic panel system GMM proposed by Arellano and Bond (1991) is the followings:

$$Y_{it} = \alpha_1 Y_{it-1} + \alpha_2 X_{it} + \eta_i + \varepsilon_{it} ----------level$$

$$Y_{it} - Y_{it-1} = (Y_{it-1} - Y_{it-2}) + \alpha_2 (X_{it} - X_{it-1}) + (\varepsilon_{it} - \varepsilon_{it-1}) --difference\,d$$

where Y is real GDP per capital growth rate, X represents all explanatory variables including FL indicators, η is unobserved country specific factor, and u is the error term.

Two types of instruments are employed in system GMM by considering both equations in levels and differences: 1) lagged levels as instruments for the equation in differences and 2) lagged differences as instruments for the equation in levels. The four moment conditions for system GMM are the followings:

$$E[Y_{it-s} * (\varepsilon_{it} - \varepsilon_{it-1})] = 0, s \geq 2, t = 3,...,T$$

$$E[X_{it-s} * (\varepsilon_{it} - \varepsilon_{it-1})] = 0, s \geq 2, t = 3,...,T$$

$$E\left[(Y_{it-1} - Y_{it-2}) * (\eta_i + \varepsilon_{it})\right] = 0$$

$$E\left[(X_{it-1} - X_{it-2}) * (\eta_i + \varepsilon_{it})\right] = 0$$

As noted in Arellano and Bover (1995) and Blundell and Bond (1997), lagged levels are weak instruments as variables tend to be persistent in nature. By adding lagged differences as additional instruments, the system GMM estimator generated thus will be more consistent and efficient relative to traditional GMM. Lastly, Researchers often concern about simultaneous bias in the growth regression. In this section, as an alternative examination, the methodology of a panel two stage least squares instrumental variable estimator is implemented to control for this bias arising from the endogeneity that might plague our estimation . In particular, the most likely endogenous regressors identified in our model are trade openness and portfolio flows. The most challenging part for conducting two stage least squares is to identify an appropriate IV for endogenous regressors. Two conditions are required for a valid IV candidate: first, high correlations between IV and endogenous variables; second, IV should not be correlated with the error terms. Thus, I consider exchange rates of US and Europe as instruments for the variable of trade openness. Since US and European economies are the main import and export partners of these seventeen Asian economies, the exchange rates of US and Europe are deemed to be correlated with the variable of trade openness which aggregates the imports and exports and uncorrelated with the error term of the growth equation. Moreover, the real interest rate of US and Europe are employed as instruments for variables of portfolio assets and liabilities. In Asia, the majority of foreign portfolio investments are from US and Europe; and for the local residents of Asian countries, the capital markets of US and Europe are the most attracted financial markets for diversifying their investment portfolios. Thus, the real interest rates of US and Europe should be influential in portfolio flows into and out of Asian economies.

The dataset of the real effective exchange rate of US and Europe was collected from Bank International Settlement; and the source of the real interest rate of US and Europe is the World Development Index of World Bank.

4. Empirical results

4.1 Financial Liberalization and Economic Growth

We conduct an array of econometric analyses on the association between the financial opening and economic growth for all seventeen sample countries. We employ: i) pooled ordinary least square (OLS) ; ii) fixed effects model; iii) dynamic panel system GMM as implemented in many prior studies. There are six specifications estimated by each econometric method: we first estimate our growth model without financial liberalization variables. We then add our five proxies of financial liberalization one at a time along with other control variables in our growth model. After conducting Hausman test, we omit the estimation result from the random effect model, and report results of OLS, fixed effects, and system GMM. Table 1.1 - Table 1.3 present the estimation results by three methodologies, respectively.

Table 1.1 reports estimation results by conducting pooled OLS method. Across six specifications, the coefficient of the de jure measure - KAOPEN is not statistically significant while three out of four de facto proxies show significant coefficients. Both Portfolio assets and liabilities show negative effect of financial liberalization on growth with significant level of 1% as indicated in column 5 and column 6. While FDI inflows do not show impacts on growth (no significance in column 3), FDI outflows have negative growth effects at 1% statistical significant level as in column 4 of Table 1.1.

In Table 1.2, we use fixed effects method by assuming the country specific factor is correlated with control variables. Under this estimation, The de jure measure, KAOPEN is insignificant again in the regression (column 2 of Table 2) whereas all the de facto indicators have significant coefficients: while both the portfolio flows stay significant and negative coefficients; FDI inflow shows positive impact on growth (column 3 of Table 1.2) but FDI outflows affect growth negatively (column 4-6 of Table 1.2).

Under the fixed effects model, quantity based de facto measures including long term featured FDI and short term featured portfolio investments all affect growth. Despite a small intensity, inward FDI produces positive growth effects.

By implementing the system GMM, Table 1.3 shows estimation results: once again, the de jure measure, KAOPEN, does not enter the regression significantly (column 2). None of the inward investment flows of the de facto indicators, FDI inflows and portfolio liabilities, show a significant coefficient (column 3 and 6 of Table 1.3). We interpret the results under GMM estimation in Table 1.3 as outward foreign investments regardless long term or short term impede growth significantly while inward foreign investments do not have growth effects.

In Table 1.4, we report results of two stage least squares by using IVs for variables of Trade Openness and Portfolio assets/ liabilities. The estimation results revealed that all financial openness proxies but FDI outflows show statistical insignificance. FDI outflows enter the regression significantly negatively. This further confirms the results from POLS and fixed effects. The negative coefficient of FDI outflows indicates that a country 's growth will be slowed down if a country experiences large outward direct investments made by the residents.

Three post-estimation standard tests are conducted: Over-identification test, Weakly identification test, and Hansen J test.

Overall we have same estimation result for the de jure measure and similar result for the other four de facto measures from our three estimation processes. However, we will summarize our results based on the fixed effect model (Table 2) due to the drawback of the OLS methodology and potential overstated standard errors by GMM. The policy related de jure measure, KAOPEN, seems to have no impact on economic growth and this result is consistent with most of the empirical studies. Moreover, both portfolio assets and liabilities (outflows and inflows) seems to have negative effects on growth. Capital is a crucial factor especially for countries in the process of economic development. If massive capital outflowing occurs, the economy will not only suffer from reduced local capital accumulations but also to certain extent deter capital inflow overseas. Other than FDI, two major financing instruments, equities and debt issuances are included in portfolio. Compared to FDI, portfolio investments tend to be more volatile in financial market due to the easiness of reversibility.

In terms of FDI inflows, our results are consistent with economic predictions. Our result supports that FDI inflows boost economies. Theoretically, countries tend to gain from foreign direct investment through different forms of business expansions, such as new factories/machinery, merger and acquisition, joint ventures, etc. By these business expansions, countries open to FDI attain valuable skills and expertise, introduce updated technologies, help domestic job markets, and benefit local consumers by providing higher quality products due to more intense competition.

Some other findings for control variable are worth noted: 1) Terms of Trade show negatively significant coefficients across all specifications at 5% significant level. This negative sign suggests that the improvement of terms of trade in a country could affect economic growth negatively through declining exports unless foreign demand for exports are inelastic. The exports of our sample countries except for industrialized ones are hardly price inelastic in the world market, thus any improved terms of trade would lead to the lowered exports which would subsequently impede the country's economic growth. 2) In line with the theory and the past studies, the positive coefficients of Trade openness variable suggest that more open on trades, countries benefit more; 3) however, Initial income, Schooling, and Government Expenses do not enter the regression significantly across all six specifications.

4.2 Robustness check of the models

As a robustness check of my models, China and Japan are omitted in a separate regression since the growth rates of these two countries are considered outliers because China's growth rate is abnormally high while Japan's growth rate remains extremely low especially for the past two decades.

Table 2 compares the results for all five financial openness indexes among three different sub-sample countries after excluding the two outliers.

After conducting fixed effects methodology, we report that KAOEPN does not significantly impact the growth when either China or Japan is excluded in the dataset. As for the effect of FDI inflows, sample countries still are able to benefit from the FDI inflows when China is excluded in the our list; whereas when Japan is excluded in the our sample countries, FDI inflows does not enter the regression significantly. FDI outflows and both Portfolio assets and liabilities remain significantly negative in the regressions with or without China or Japan in our sample.

4.3 Interactive Effects- Financial Openness under other growth factors

Recent papers report mixed results of interactive effects of financial openness on growth. Edison et.al (2002) reports no growth effects of the financial

liberalization under different economic and political environment.[22] Prasad et al. (2003) and Borenstein et al. (1998) find that positive growth effects of FDI are shown in countries with high level of human capital. Boyd and Smith (1992) reports that only the countries with high level of law enforcement and sound financial market will have positive growth effects of international financial liberalization. Thus, in this section, we investigate where financial openness exerts any influence on GDP growth under varying macroeconomic environment by interacting financial measures with our control variables.

By adding the interaction terms in the regression, we will investigate where the growth effects of financial liberalization depend on various social and economic conditions including trade openness, initial income, schooling, government expenses, domestic credit, and terms of trade. The specification with the interaction terms is the following:

$$Y_{it} = \beta_0 + \beta_1 FO_{it} + \beta_2 (FO_{it} * X_{it}) + \beta_3 X_{it} + u_{it}$$

Y : real per capita GDP growth rate

FO : one of the five measures of financial openness indicators

X : control variables

Essentially, we are interested to assess if β_2 is positive with different x to assess if financial openness leads to growth only under certain situations, while we still report β_1, β_2, and β_3 in Table 3.1-3.6.

In Table 3.1, All financial openness proxies and all interaction terms are significant (all β1's and β2's are statistically significant). The growth effects enter the regressions significantly positive when all the financial openness proxies interacted with Trade Openness. The results suggest that financial openness, whether it is measured by de jure or de facto indexes, can stimulate economic growth in countries with more opened trade markets.

In Table 3.2, we examine if the relationship between growth and financial opening changes as the initial income varies. Three financial openness proxies and only two interactive terms enter the regressions significantly out of five regressions: KAOPEN*Initial Income and FDI Inflows*Initial income. The negative coefficients of the interactive terms indicate that financial openness (KAOPEN and FDI inflows) can promote growth for poorer countries or as countries become rich, the effect of opening financial market on growth become negative. This result contradicts with the theory that FDI contributes negatively to growth when initial level of income is low. Thus, financial openness has no growth effect under different income levels.

We then interact schooling with financial openness proxies. The results from Table 3.3 show that two financial openness proxies have growth effects and only two out of five interactive terms, KAOPEN*Schooling and FDI Inflows*, have significant but negative coefficients. The results suggest that when proxied by KAOPEN and FDI inflows, financial openness have growth effects for countries with lower education level. Again, the sign of the interactive terms is contrary to theory.

Table 3.4 shows the Financial openness-growth effect varies with government expenses. Out of five regressions, only one interactive term -KAOPEN*Government Expenses- enters the regression significantly but negatively. This suggests that easing financial restrictions (higher KAOPEN) can boost growth for countries with minimum government spending or easing financial restrictions might actually impede growth as countries spend more in public sectors.

22 Edison et.al (2002).

Table 3.5 reports the estimation results of interactive terms of financial openness with domestic credit. Out of five interaction effects added regressions, only the one with FDI inflows enters significantly. It is concluded that the relationship between financial openness and growth does not vary with the domestic credit market condition.

The last economic condition we examine is Terms of Trade. From Table 3.6, we report that four interactive terms have significantly positive coefficients. This suggests that when the economies with higher terms of trade, frequent cross-border direct investments, opening financial markets or deregulated financial policies can exert positive effects on economic growth.

From Table 3.1-3.6, we have mixed results for the view that the growth effect of the financial openness varies with social and economic conditions. In summary, the growth effects of financial liberalization vary only with trade market openness and terms of trade. Financial openness will contribute to growth positively when the level of trade openness is high. In addition, with the improvement of terms of trade, financial openness can exert positive effects on economic growth. Nevertheless, no growth effects of financial openness have been found even when other economic conditions (initial income level, schooling, government spending, and domestic credit) are varied.

5. Conclusion & Policy Implications

5.1 Conclusion and Policy Implications

This paper uses dynamic macroeconomic panel data to explore the long-run effects of financial liberalization on economic growth for seventeen Asian economies during the 1980-2010 periods.

The main contributions of this research are:

. While the existing literature spans sample countries across several continents, we specifically focus our sample region on Asian economies due to the abrupt growth and the increasing reliance on the international financial integration of this region.

. We employ new financial liberalization indicators as proxies to predict the growth effects of financial liberalization - while most of current literature consider coarse measures, such as capital flows, my paper instead uses the components of capital flows, such as FDI and portfolio investment, as our main de facto measures and to improve upon the existing de facto financial liberalization measures, we further consider not only the components but also directions of capital flows in our study to investigate the impact of the inflows and outflows on growth respectively. As far as de jure measure, by employing KAOPEN, we are able to capture all aspects of officially announced financial openness policies.

. We examine the growth impact of financial liberalization by employing econometric methods appropriate for dynamic panel data in our research.

By focusing on Asian region, using most updated panel data, and employing comprehensive econometric techniques, our study examines whether financial openness boosts economy and assesses interactive effects on economies through the gain from the capital flows under certain institutional development, including initial income level, education attainment, government expenses, domestic credit availability, trade openness and terms of trade. The study uses both de jure and de facto measures as the financial openness indicators, and the main findings are as follows:

i) Robust estimation results support the correlation between financial openness and GDP growth even when controlling for economic foundations.

Albeit the small intensity of the growth impact brought by financial openness to Asian economies, the results indicate that all four de facto measures - FDI inflows and outflows as well as portfolio assets and liabilities - affect GDP growth.

ii) Directions of capital flows matters. Our estimation results indicate that FDI inflows has positive growth effects while FDI outflows, and portfolio investments all impose negative growth effects. Foreign portfolio investment does not contribute to economic growth, plausibly due to the speculative nature and volatilities.

iii) Mixed results that support the idea that the growth effects of financial liberalization vary with macroeconomic fundamentals. Specifically, the financial openness exerts positive contributions to economic growth with higher level of trade openness (more imports and exports) and improved terms of trade not just the growth of export. However, we do not find growth effects of financial openness increases under other economic or financial environment.

5.2. Recommendations for Further Study

To identify aspects of financial openness affecting growth is not a simple task. One of the difficulties that complicates and plagues the past literature on this subject has been the effectiveness of the selected indicators associated with financial liberalization. Although we consider different dimensions of capital flows as our indicators, in essence, capital flows consist of funds transacted in many industries, and thus, it may be an interesting extension of this study to analyze the growth effects of financial liberalization across industries.

Acknowledgements

I would like to give acknowledgement and special thanks to my advisor Professor Peter Chow, and my two committee members Professor Thom Thurston and Professor Wim Vijverberg. This dissertation would not have been completed without guidance, and their patience in working with a student who works full-time.

My appreciation goes to Professor Chow for helping me with topics, structure, and methodologies of this paper. His vast knowledge in international trade and expertise in Asian economies are especially impressive. Additionally, my appreciation goes to Professor Vijverberg for providing me his opinions and ideas to improve my paper. Moreover, my appreciation goes to Professor Thurston for his expertise in macroeconomics, and giving me suggestions in completing my degree.

Finally, this paper could not have been done without the support of my family: my husband for his love and inspiration; our daughter Annie and our twin sons Leo and Andrew.

Bibliography

Abiad, A., Oomes, N., & Ueda, K. (2008). The quality effect: Does financial liberalization improves the allocation of capital?, *Journal of Development Economics* 87(2), 270-282.

Aizenman, N. (2009). Endogenous financial and trade ppenness, *Review of Development Economics* 13(2), 175-189.

Arellano, M., & Bond, S. (1998). Dynamic Panel Data Estimating Using DPD98-A Guide for Users, *Institute for Fiscal Studies*, Mimeo.

Arellano, M., & Bover, O. (1995). Another Look At the Instrumental Variable Estimation of Error Components Models, *Journal of Econometrics* 68(1), 29-51.

Bhagwati, J. N. (1998). The Capital Myth: The Difference between Trade in Widgets and Dollars, *Foreign Affairs*, 77(3), 7.

Barro, R. & Jong-Wha Lee, J. W. (2011). A new data set of educational attainment in the World, 1950-2010, forthcoming, *Journal of Development Economics*.

Bekaert, G. (1995). Market Integration and Investment Barriers in Emerging Equity Markets?, *World Bank Economic Review* 9, 75-107.

Bekaert, G., Harvey, C. R., & Lundblad, C. (2005). Does financial liberalization spur growth?, *Journal of Financial Economics*, 77(1). 3-55.

Bekaert, G., Harvey, C. R., & Lundblad, C. (2011). Financial openness and productivity?, *World Development*, 99(1), 1-19.

Blundell, R., & Bond, S. (1998). Initial Conditions and Moment Restrictions in Dynamic Panel Data Models, *Journal of Econometrics* 87(1), 115-143.

Borensztein, E., Gregorio, J. D., & Lee, J.-W. (1998). How does foreign direct investment affect growth?, *Journal of International Economics*, 45, 115–35.

Boyd, J., & Smith, B. (1992). Intermediation and the Equilibrium Allocation of Investment Capital: Implication of Economic Development, *Journal of Monetary Economics* 30(3), 409-432.

Camdessus, M. (1998). The IMF's Role in Today's Globalized World, *International Monetary Fund*, Frankfurt, Germany.

Chari, A., & Henry, P.Y. (2004). Risk sharing and asset prices: Evidence from a natural experiment, *Journal of Finance*, 59(3), 1295-1324

Chinn, M. D., & Ito, H. (2008). A new measure of financial openness, *Journal of Comparative Policy Analysis*, 10(3), 309-322.

Chinn, M. D. & Ito, H. (2006). What matters for financial development? Capital controls, institutions, and interactions, *Journal of Development Economics*, 81(1), 163-192.

Cho, Y. J. (1988). The effect of financial liberalization on the efficiency of credit allocation: some evidence from Korea, *Journal of Development Economics*, 29(1), 101-110.

Chow, P. C., & Gates G. (eds) (2000), *Weathering The Storm*. Brookings Institution Press.

Cole, H. L. & Kehoe, T. J. (1996). A self-fulfilling model of Mexico's 1994-1995 Debt Crisis, *Journal of International Economics*, 41(3-4), 309-330.

Devereux, M. B. & Smith, G. W. (1994). International Risk-Sharing and Economic Growth, *International Economic Review*, 35(3), 535-550.

Edison, H., Levine, R., Ricci, L., & Slok, T. (2002). International financial liberalization and economic growth, *Review of International Economic*, 9, 688-702.

Edison, H., & Warnock, F. (2003). A simple measure of the intensity of capital controls, *Journal of Empirical Finance*, 10, 81-104.

Edison, H., Klein, M., Ricci, L., & Slok, T. (2004). Capital account liberalization and economic performance: Survey and synthesis, *IMF Staff Papers*, 51(2), 220-256.

Grilli V., & Milesi-Ferretti, M. G. (1995). Economic Effects and Structural Determinants of Capital Controls, *IMF Staff Papers*, 42(3), 517-551.

Karcher, S., & Steinberg, D. (2013). Assessing the Causes of Capital Account Liberalization: How Measurement Matters, *International Studies Quarterly*, 57(1), 128-137.

Klein, M., & Olivei, G. (2008). Capital account liberalization, financial deepness and economic growth, *Journal of International Money and Finance*, 27(6), 861-875.

Klein, M., & Olivei, G. (1999). Capital Account Liberalization, Financial Depth, and Economic Growth, *Working Papers, 99-6*, Federal Reserve of Boston.

Kose, M., Prasad, E., Rogoff, K., & Wei, S. (2006). Financial Globalization: A Reappraisal, *IMF Staff Papers*, 06/189.

Lane, M.-F. (2007). The external wealth nations mark II: Revised and extended estimates of foreign assets and liabilities, 1970-2004, *Journal of International Economics*, 73, 223-250

McKinnon, R. I. (1973). *Money and Capital in Economic Development*. Oxford Press.

McKinnon, R. I., (1991). *The Order of Economic Liberalization: Financial Control in the Transition to a Market Economy*. Baltimore: Johns Hopkins University Press

O'Donnell, B. (2001). *Financial openness and economic performance*, Dublin, Trinity College

Prasad, E., Rogoff, K., Wei, S., & Kose, M. (2003). Effects of financial globalisation on developing countries, *Economic and Political Weekly*, 4319-4330

Quinn, D. (1997). The correlates of change in international financial regulation, *American Political Science Review* 91, 531-551.

Quinn, D., & Toyoda, A. M. (2008). Does capital account liberalization lead to economic growth?, *Review of Financial Studies*, 21(3), 1403-1449.

Ranciere R., Tornell A., & Westermann F. (2008). Decomposing the effects of financial liberalization: Crises vs. growth, *Journal of Banking & Finance*, 30(12), 3331-3348.

Rodrik, D. (1998). *Who Needs Capital-Account Convertibility*, Harvard University.

Rodrik, D. (1999). *Making openness work: The new global economy and the developing countries*, Overseas Development Council, Washington, DC.

Schumkler, S. (2004). *Financial Globalization: Gain and Pain for Developing Countries*, Federal Reserve Bank of Atlanta, Economic Review, Second Quarter, 2004.

Shaw, E. S. (1973). *Financial Deepening in Economic Development*, Brooking Institute

Stiglitz, J. (2000). Capital Market Liberalization, Economic Growth, and Instability, *World Development*, 28(6), 1075-1086.

Schumkler, S. (2004). Financial globalization: Gain and Pain for developing countries, Federal Reserve Bank of Atlanta, *Economic Review*, Second Quarter.

Summers, L. (2000). International financial crises: Causes, prevention, and cures, *American Economic Review*, 90(2), 1-16.

Umutlu, M., Akdeniz, L. & Salih, A. A. (2009). The degree of financial liberalization and aggregated stock-return volatility in emerging markets, *Journal of Banking & Finance*, 509-521.

Wooldridge, J. M. (2002). *Econometric Analysis of Cross Section and Panel Data*. Cambridge, Massachusetts, London. The MIT Press.

Tables

TABLEA 1. *The averaged growth rate over each decade by countries*

COUNTRY	1980-1989	1990-1999	2000-2010
Cambodia	2.25	2.82	6.33
China	7.93	8.85	9.65
Hong Kong	5.83	1.98	4.02
India	3.66	3.71	5.79
Indonesia	4.18	3.18	3.74
Japan	3.77	1.17	0.79
Korea	7.09	5.91	4.05
Lao	3.85	3.64	5.22
Malaysia	2.95	4.53	3.03
Myanmar	-0.20	4.60	11.38
Pakistan	3.13	1.26	2.27
Philippines	-0.70	0.42	2.80
Singapore	5.52	4.54	3.35
Sri Lanka	2.72	4.34	4.30
Taiwan	6.24	5.47	3.52
Thailand	5.29	4.32	3.86
Vietnam	2.36	5.60	6.19
All countries	3.87	3.90	4.72

Note: The numbers reported in Table A.1 for countries are the averages of data from 1980-2010.

TABLE A.2.*Summary*

	Growth	Terms of Trade	Trade Openness	Initial Income	Schooling	Gov. Expense	Domestic Credit	KAOPEN	Inward FDI stock	Outward FDI stock	Portfolio Assets	Portfolio Liabilities
Cambodia	3.89	96.21	10.07	183.47	27.80	6.06	6.06	-0.22	22.04	2.76	2.08	0.13
China	8.84	97.97	37.06	222.78	50.10	17.31	92.95	-1.32	8.67	1.88	1.65	2.35
Hong Kong	3.95	99.66	280.22	10344.02	75.16	8.09	149.27	2.46	349.78	148.31	129.69	48.64
India	4.43	99.02	25.21	284.37	45.50	12.62	29.00	-1.17	3.21	0.97	0.10	6.42
Indonesia	3.70	113.52	51.71	545.17	52.82	8.86	30.75	1.78	10.50	1.17	0.45	6.20
Japan	1.87	94.39	23.28	21120.24	98.64	6.08	181.23	2.35	1.19	6.49	25.64	17.37
Korea	5.63	110.40	70.57	3804.09	94.38	6.02	66.65	-0.40	5.86	3.42	2.58	13.11
Lao	4.27	101.90	56.90	187.89	30.92	17.22	8.44	-1.36	15.81	0.49	0.00	0.17
Malaysia	3.49	95.98	154.68	2339.92	59.63	5.50	103.71	1.10	30.74	10.23	3.08	26.09
Myanmar	5.45	238.53	37.18	83.60	31.42	11.86	6.55	-1.51	19.97	0.00	0.00	0.04
Pakistan	2.22	104.94	34.64	430.00	18.40	11.33	25.08	0.16	6.51	0.52	0.13	1.65
Philippines	0.90	84.62	70.71	1108.57	73.63	4.99	30.02	-0.38	9.97	1.28	2.24	10.45
Singapore	4.43	106.08	358.27	9793.31	83.76	9.34	90.63	2.35	116.02	58.97	104.75	30.27
Sri Lanka	3.81	90.55	70.40	528.00	78.76	11.02	23.53	0.37	9.53	0.33	0.00	0.58
Taiwan	2.95	91.38	101.21	4400.56	89.83	14.63	NA	NA	7.84	23.84	20.37	13.37
Thailand	4.47	112.88	90.16	920.19	48.59	6.70	95.85	-0.22	17.62	1.89	1.21	12.41
Vietnam	4.77	99.04	109.91	198.22	44.87	11.40	51.03	-1.32	25.11	0.00	0.00	0.89
Mean	4.34	108.06	104.78	3702.43	54.27	9.78	70.31	0.18	42.95	17.62	17.56	12.53
Std. Dev.	4.13	57.36	99.58	5694.02	28.82	4.29	55.08	1.60	97.43	59.36	55.83	23.32
Min	-14.38	57.63	11.66	83.60	1.54	2.79	0.96	-1.86	0.08	0.00	0.00	0.00
Max	17.99	721.07	445.62	21120.24	104.45	22.85	227.75	2.46	616.82	535.02	406.42	225.71

TABLE A.3. *Variables in dataset*

Variable	Description	Units	Source
Growth	Real GDP per capita annual growth rate	% ppy +	UNCTAD*
Initial Income	Logarithm of Real per capital GDP in 1980	Log (US $)	UNCTAD*
Schooling	Secondary school enrollment as a share of total population	% ppy	WB/WBI ^
Gov. Expense	General government final consumption expenditure/GDP	% ppy	UNCTAD*
Domestic credit	Domestic credit to private sectors/GDP	% ppy	WB/WBI
Terms of Trade	The ratio of the export unit value index to the import unit value index	% ppy	UNCTAD*
Trade Openness	Trade Openness measure: (Imports + Exports)/GDP	% ppy	UNCTAD*
KAOPEN	An index measuring a country's degree of capital account openness	[-1.86-2.44]	Chinn and Ito (2006)
FDI Inflows	Inward foreign direct investment stock/GDP	% ppy	UNCTAD
FDI Outflows	Outward foreign direct investment stock/GDP	% ppy	UNCTAD
Portfolio Assets	Portfolio Assets/GDP	% ppy	UNCTAD
Portfolio Liabilities	Portfolio Liabilities/GDP	% ppy	UNCTAD

% ppy+ - Percentage points per year

* - UNCTAD - United Nations Conference on Trade and Development

^ - WB/WBI - World Band and World Bank Index

TABLE A.4. *Correlation Matrix*

	Growth	KAOPEN	Inward FDI stock	Outward FDI stock	Portfolio Assets	Portfolio Liabilities	Terms of Trade	Trade Openness	Initial Income	Schooling	Gov. Expense	Domestic Credit
Growth	1											
KAOPEN	-0.100*	1										
Inward FDI stock	0.037	0.456*	1									
Outward FDI stock	-0.042	0.360*	0.641*	1								
Portfolio Assets	-0.047	0.413*	0.597*	0.882*	1							
Portfolio Liabilities	-0.053	0.442*	0.536*	0.869*	0.854*	1						
Terms of Trade	-0.028	-0.109*	-0.065	-0.059	-0.079	-0.119*	1					
Trade Openness	0.039	0.570*	0.653*	0.622*	0.664*	0.603*	-0.109*	1				
Initial Income	-0.122*	0.692*	0.325*	0.295*	0.375*	0.358*	-0.097*	0.337*	1			
Schooling	-0.014	0.530*	0.184*	0.239*	0.293*	0.389*	-0.234*	0.372*	0.608*	1		
Gov. Expense	0.231*	-0.404*	-0.126*	-0.031	-0.045	-0.208*	0.069	-0.180*	-0.302*	-0.254*	1	
Domestic Credit	-0.032	0.602*	0.333*	0.336*	0.349*	0.471*	-0.176*	0.396*	0.752*	0.657*	-0.227*	1

TABLE 1.1: *Dependent Variable: Real GDP per capita growth, estimated by Pooled Ordinary Least Square (POLS)*

	POLS1	POLS2	POLS3	POLS4	POLS5	POLS6
KAOPEN		0.5065				
		(0.2890)				
FDI Inflows			0.004			
			(0.0040)			
FDI Outflows				**-0.0181*** **		
				(0.0050)		
Portfolio Assets					**-0.0167*** **	
					(0.0050)	
Portfolio Liabilities						**-0.0303** **
						(0.0120)
Terms of Trade	-0.0085***	-0.0089***	-0.0082***	-0.0079***	-0.0084***	-0.0081***
	(0.0030)	(0.0030)	(0.0030)	(0.0030)	(0.0030)	(0.0030)
Trade Openness	0.0219***	0.0210***	0.0208***	0.0382***	0.0353***	0.0316***
	(0.0070)	(0.0070)	(0.0070)	(0.0080)	(0.0080)	(0.0080)
Initial Income	0.0964	-0.017	0.0382	0.4151	0.6513	0.5745
	(0.9720)	(0.9800)	(0.9750)	(0.9660)	(0.9790)	(0.9830)
Schooling	0.0305	0.0328	0.031	0.0123	0.0075	0.0201
	(0.0280)	(0.0280)	(0.0280)	(0.0280)	(0.0280)	(0.0280)
Government Expense	-0.0491	-0.0745	-0.0441	0.008	-0.0128	-0.0474
	(0.0990)	(0.0980)	(0.0990)	(0.0970)	(0.0980)	(0.0980)
Domestic Credit	-0.0487***	-0.0495***	-0.0477***	-0.0547***	-0.0542***	-0.0523***
	(0.0130)	(0.0130)	(0.0130)	(0.0130)	(0.0130)	(0.0130)
Adjusted R square	0.2543	0.2601	0.2559	0.2783	0.2744	0.2664
N	510	510	510	510	510	510

Numbers in parenthesis are heteroskedasticity-robust standard errors.
*, **, and *** represent 10%, 5%, and 1% level of statistical significance, respectively.
The first column reports coefficients in the benchmark growth regression. The second to the sixth column report coefficients of one financial openness and all other control variables in the growth regression.

TABLE 1.2. *Dependent Variable: Real GDP per capita growth , estimated by Fixed Effects*

	FE1	FE2	FE3	FE4	FE5	FE6
KAOPEN		0.3722				
		(0.2540)				
FDI Inflows			**0.0062***			
			(0.0040)			
FDI Outflows				**-0.0166*****		
				(0.0040)		
Portfolio Assets					**-0.0170*****	
					(0.0040)	
Portfolio Liabilities						**-0.0434*****
						(0.0110)
Terms of Trade	-0.0087**	-0.0091***	-0.0083**	-0.0080**	-0.0082**	-0.0076**
	(0.0030)	(0.0030)	(0.0030)	(0.0030)	(0.0030)	(0.0030)
Trade Openness	0.0188***	0.0182***	0.0175***	0.0334***	0.0311***	0.0298***
	(0.0070)	(0.0070)	(0.0070)	(0.0070)	(0.0070)	(0.0070)
Initial Income	0.2852	0.2376	0.3118	0.2883	0.3431	0.1155
	(1.0220)	(1.0210)	(1.0200)	(1.0060)	(1.0060)	(1.0060)
Schooling	0.0389	0.0404	0.0407	0.0181	0.0086	0.0125
	(0.0280)	(0.0280)	(0.0280)	(0.0280)	(0.0280)	(0.0280)
Government Expense	-0.0047	-0.0233	0.0078	0.0369	0.0188	-0.0207
	(0.0960)	(0.0970)	(0.0970)	(0.0960)	(0.0950)	(0.0950)
Domestic Credit	-0.0416***	-0.0423***	-0.0410***	-0.0470***	-0.0454***	-0.0432***
	(0.0110)	(0.0110)	(0.0110)	(0.0110)	(0.0110)	(0.0110)
Constant	2.408	3.0624	1.7816	2.0014	2.3579	4.0901
	(6.6170)	(6.6240)	(6.6140)	(6.5170)	(6.5160)	(6.5220)
Adjusted R square	0.269	0.2724	0.2735	0.2928	0.2928	0.2944
N	510	510	510	510	510	510

Numbers in parenthesis are standard errors.
*, **, and *** represent 10%, 5%, and 1% level of statistical significance, respectively.
The first column reports coefficients in the benchmark growth regression. The second to the sixth column report coefficients of one financial openness and all other control variables in the growth regression.

TABLE 1.3. *Dependent Variable: Real GDP per capita growth , estimated by System GMM*

	GMM1	GMM2	GMM3	GMM4	GMM5	GMM6
KAOPEN		0.3683				
		(0.2500)				
FDI Inflows			0.0068			
			(0.0040)			
FDI Outflows				**-0.0090****		
				(0.0040)		
Portfolio Assets					**-0.0090****	
					(0.0040)	
Portfolio Liabilities						**-0.0082*****
						(0.0030)
Initial Income	0.2644***	0.3151***	0.2662***	0.2545***	0.3080***	0.3127***
	(0.0340)	(0.0350)	(0.0340)	(0.0340)	(0.0350)	(0.0360)
Terms of Trade	-0.0226***	-0.0167**	-0.0226***	-0.0233***	-0.0174***	-0.0162**
	(0.0060)	(0.0070)	(0.0060)	(0.0060)	(0.0070)	(0.0070)
Trade Openness	0.0192***	0.0155***	0.0141**	0.0259***	0.0256***	0.0203***
	(0.0050)	(0.0050)	(0.0060)	(0.0060)	(0.0060)	(0.0050)
Schooling	-0.0195	0.0091	-0.0134	-0.0207	0.0093	0.0109
	(0.0230)	(0.0160)	(0.0240)	(0.0230)	(0.0160)	(0.0160)
Government Expense	-0.1492*	-0.101	-0.1598*	-0.1191	-0.0792	-0.1102
	(0.0820)	(0.0830)	(0.0830)	(0.0830)	(0.0840)	(0.0830)
Domestic Credit	-0.0664***	-0.0523***	-0.0639***	-0.0674***	-0.0521***	-0.0508***
	(0.0100)	(0.0090)	(0.0100)	(0.0100)	(0.0090)	(0.0090)
N	510	510	510	510	510	510

Numbers in parenthesis are standard errors.
*, **, and *** represent 10%, 5%, and 1% level of statistical significance, respectively.
The first column reports coefficients in the benchmark growth regression. The second to the sixth column report coefficients of one financial openness and all other control variables in the growth regression.

TABLE 1.4. *Dependent Variable: Real GDP per capita growth, estimated by TSLS*

	TSLS1	TSLS2	TSLS3	TSLS4	TSLS5	TSLS6
KAOPEN		-0.6829				
		(1.3320)				
FDI Inflows			0.0077			
			(0.0070)			
FDI Outflows				**-0.0791****		
				(0.040)		
Portfolio Asse					-0.0297	
					(0.0430)	
Portfolio Liab						-0.0353
						(0.0720)
Terms of Trade	-0.0058	-0.0060	-0.0082	-0.0038	-0.0074	-0.0610
	(0.0090)	(0.0090)	(0.0080)	(0.0070)	(0.013)	(0.0160)
Trade Openne	0.2631***	0.2568**	0.2502***	0.2309***	0.0927**	0.0867*
	(0.1210)	(0.1190)	(0.0960)	(0.0840)	(0.0450)	(0.0430)
Initial Income	0.1282	0.1207	0.1200	0.1353	0.2560	0.2640
	(0.1450)	(0.1450)	(0.1440)	(0.1360)	(0.1260)	(0.1650)
Schooling	0.0479	0.0457	0.0480	0.0474	0.0707	0.0507
	(0.0440)	(0.0440)	(0.0440)	(0.0610)	(0.0480)	(0.0870)
Government Expense	-0.0119	-0.0125	-0.0229	-0.0193	-0.0536	-0.0212
	(0.1400)	(0.1410)	(0.1550)	(0.1640)	(0.1340)	(0.1470)
Domestic Credit	-0.0770***	-0.0764***	-0.0729***	-0.0644***	-0.0726**	-0.0731***
	(0.0170)	(0.0170)	(0.0200)	(0.0170)	(0.0190)	(0.0150)
N	510	510	510	510	510	510
Underid Test	0.2415	0.3741	0.1895	0.2722	0.4872	0.4814
Weak id	0.2331	0.3532	0.1336	0.2642	0.61	0.57
Hansen J	0.2672	0.3113	0.3831	0.2285	0.5292	0.4883

Numbers in parenthesis are standard errors.
*, **, and *** represent 10%, 5%, and 1% level of statistical significance, respectively.
The second column reports coefficients in the benchmark growth regression. The third to the seventh column report coefficients of one financial openness and all other control variables in the growth regression.
Note: In TSLS1-TSLS4 regressions, the instrumented variable is trade openness and the excluded instruments are one lag of US real effective exchange rate and EUR real effective exchange rate.
In TSLS5 regression, the instrumented variables are trade openness and portfolio assets; the excluded instruments are one lag of US real effective exchange rate , one lag EUR real effective exchange rate, one lag of US real Interest rate, and one lag of EUR real Interest rate.
In TSLS6 regression, the instrumented variables are trade openness and portfolio liabilities; the excluded instruments are one lag of US real effective exchange rate , one lag EUR real effective exchange rate, one lag of US real Interest rate, and one lag of EUR real Interest rate.
Note: Last three rows of the table present p values of under-identification test, weak i, and Hansen J (over-identification test). All test statistics are heteroskedasticity-robust.
Underid: H0: underidentified
Weak id: H0:equation is weakly identified
Hansen J: H0: overidentified test

TABLE 2. *Estimations comparison: All countries, countries without China, and countries without Japan*

	All	**China excluded**	**Japan excluded**
KAOPEN	0.3722	0.3669	0.3452
	(0.2540)	(0.2580)	(0.2600)
FDI Inflows	**0.0062***	**0.0062***	0.0058
	(0.0040)	(0.0040)	(0.0040)
FDI Outflows	**-0.0166*****	**-0.0161*****	**-0.0174*****
	(0.0040)	(0.0040)	(0.0040)
Portfolio Assets	**-0.0170*****	**-0.0167*****	**-0.0173*****
	(0.0040)	(0.0040)	(0.0040)
Portfolio Liabilities	**-0.0434*****	**-0.0432*****	**-0.0443*****
	(0.0110)	(0.0110)	(0.0110)

Numbers in parenthesis are standard errors.
*, **, and *** represent 10%, 5%, and 1% level of statistical significance, respectively.

TABLE 3.1. *Interactive Effect-* ***Trade Openness*** *- for all sample countries Dependent variable: real GDP per capita growth*

Financial Openness Proxies	FO	**FO*TradeOpenness**	TradeOpenness
KAOPEN	1.0570***	**0.0096*****	0.0236***
	(0.3130)	(0.0030)	(0.0070)
FDI Inflows	0.0211***	**0.0001***	0.0163***
	(0.0070)	(0.0000)	(0.0060)
FDI Outflows	-0.0599***	**0.0001*****	0.0152**
	(0.0220)	(0.0000)	(0.0060)
Portfolio Assets	-0.0620***	**0.0001*****	0.0132**
	(0.0220)	(0.0000)	(0.0050)
Portfolio Liabilities	-0.0777**	**0.0002***	0.0117**
	(0.0310)	(0.0000)	(0.0060)

Numbers in parenthesis are heteroskedasticity-robust standard errors.
*, **, and *** represent 10%, 5%, and 1% level of statistical significance, respectively.

TABLE 3.2. *Interactive Effect-* ***Initial Income*** *- for all sample countries Dependent variable: real GDP per capita growth*

Financial Openness Proxies	FO	**FO*Initial Income**	Initial Income
KAOPEN	5.1713***	**-0.6919*** **	-1.6427**
	(1.2530)	(0.1770)	(0.8080)
FDI Inflows	0.1770***	**-0.0333*** **	-0.3505
	(0.0290)	(0.0070)	(0.8960)
FDI Outflows	-0.3683**	0.0142	-1.3267*
	(0.1660)	(0.0160)	(0.7920)
Portfolio Assets	-0.2172	0.0218	-1.2922
	(0.2480)	(0.0270)	(0.7910)
Portfolio Liabilities	-0.1327	0.0096	-1.2286
	(0.2080)	(0.0230)	(0.7910)

Numbers in parenthesis are heteroskedasticity-robust standard errors.
*, **, and *** represent 10%, 5%, and 1% level of statistical significance, respectively.

TABLE 3.3. *Interactive Effect-* ***Schooling*** *- for all sample countries Dependent variable: real GDP per capita growth*

Financial Openness Proxies	FO	**FO*Schooling**	Schooling
KAOPEN	2.0950***	**-0.0354*** **	0.0201
	(0.4820)	(0.0080)	(0.0430)
FDI Inflows	0.0694***	**-0.0010*** **	0.0575
	(0.0220)	0.0000	(0.0500)
FDI Outflows	-0.0002	-0.0002	0.038
	(0.0500)	(0.0010)	(0.0500)
Portfolio Assets	0.0315	-0.0006	0.0317
	(0.0450)	(0.0010)	(0.0490)
Portfolio Liabilities	0.1327**	-0.0021	0.032
	(0.0640)	(0.0020)	(0.0460)

Numbers in parenthesis are heteroskedasticity-robust standard errors.
*, **, and *** represent 10%, 5%, and 1% level of statistical significance, respectively.

TABLE 3.4. *Interactive Effect- Government Expenses - for all sample countries Dependent variable: real GDP per capita growth*

Financial Openness Proxies	FO	**FO*Gov. Expenses**	Gov. Expenses
KAOPEN	1.3976***	**-0.1223****	-0.0872
	(0.5300)	(0.0560)	(0.1350)
FDI Inflows	0.0246	-0.0027	0.0738
	(0.0170)	(0.0020)	(0.1250)
FDI Outflows	0.0231	-0.0039	0.0624
	(0.0220)	(0.0020)	(0.1120)
Portfolio Assets	0.0342	-0.0033	0.0492
	(0.0230)	(0.0020)	(0.1040)
Portfolio Liabilities	0.0126	-0.0064	0.0166
	(0.0580)	(0.0060)	(0.1070)

Numbers in parenthesis are heteroskedasticity-robust standard errors.
*, **, and *** represent 10%, 5%, and 1% level of statistical significance, respectively.

TABLE 3.5. *Interactive Effect-* ***Domestic Credit*** *- for all sample countries Dependent variable: real GDP per capita growth*

Financial Openness Proxies	FO	**FO*Domestic Credit**	Domestic Credit
KAOPEN	0.6842	-0.0074	0.0125
	(0.5590)	(0.0050)	(0.0110)
FDI Inflows	0.0386**	**-0.0003****	0.0177*
	(0.0160)	(0.0001)	(0.0100)
FDI Outflows	-0.0223	0.0001	0.0066
	(0.0320)	(0.0000)	(0.0120)
Portfolio Assets	-0.0200**	0.0013	0.007
	(0.0080)	(0.0020)	(0.0120)
Portfolio Liabilities	-0.0208	-0.0006	0.0083
	(0.0350)	(0.0010)	(0.0130)

Numbers in parenthesis are standard errors.
*, **, and *** represent 10%, 5%, and 1% level of statistical significance, respectively.

TABLE 3.6. *Interactive Effect-* ***Terms of Trade*** *- for all sample countries Dependent variable: real GDP per capita growth*

Financial Openness Proxies	FO	**FO*Terms of Trade**	Terms of Trade
KAOPEN	0.1270**	**0.0144*** **	0.0111
	(0.0745)	(0.0050)	(0.0090)
FDI Inflows	-0.0760***	**0.0013*** **	-0.006
	(0.0250)	(0.0001)	(0.0040)
FDI Outflows	-0.1335**	**0.0012***	-0.0061
	(0.0600)	(0.0010)	(0.0040)
Portfolio Assets	-0.0166*	-0.0008	-0.0057
	(0.0100)	(0.0010)	(0.0040)
Portfolio Liabilities	-0.2539***	**0.0022*** **	-0.0068**
	(0.0590)	(0.0010)	(0.0030)

Numbers in parenthesis are standard errors.
*, **, and *** represent 10%, 5%, and 1% level of statistical significance, respectively.

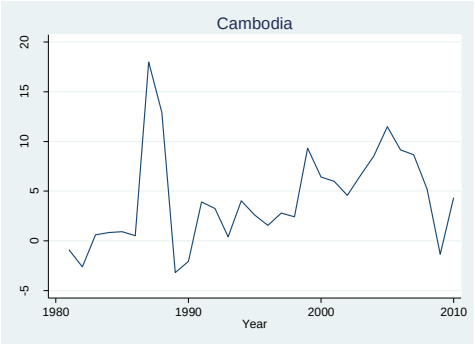
TABLE 3.7. *Interactive Effect across Financial Liberalization indicators*

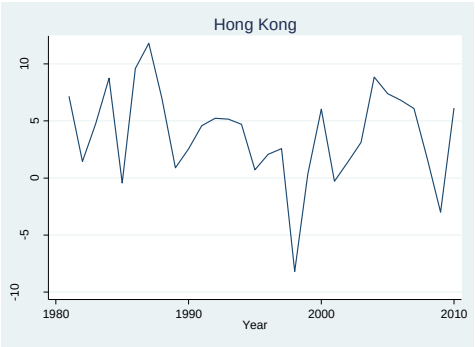
Financial Openness Proxies	FO*Trade Openness	FO*Initial Income	FO*Schooling	FO*Gov. Expenses	FO*Domestic Credit	FO*Terms of Trade
KAOPEN	**0.0096*** **	**-0.6919*** **	**-0.0354*** **	**-0.1223** **	-0.0074	**0.0144*** **
	(0.0030)	(0.1770)	(0.0080)	(0.0560)	(0.0050)	(0.0050)
FDI Inflows	**0.0001***	**-0.0333*** **	**-0.0010*** **	-0.0027	**-0.0003** **	**0.0013*** **
	(0.0000)	(0.0070)	0.0000	(0.0020)	(0.0001)	(0.0001)
FDI Outflows	**0.0001*** **	0.0142	-0.0002	-0.0039	0.0001	**0.0012***
	(0.0000)	(0.0160)	(0.0010)	(0.0020)	(0.0000)	(0.0010)
Portfolio Assets	**0.0001*** **	0.0218	-0.0006	-0.0033	0.0013	-0.0008
	(0.0000)	(0.0270)	(0.0010)	(0.0020)	(0.0020)	(0.0010)
Portfolio Liabilities	**0.0002***	0.0096	-0.0021	-0.0064	-0.0006	**0.0022*** **
	(0.0000)	(0.0230)	(0.0020)	(0.0060)	(0.0010)	(0.0010)

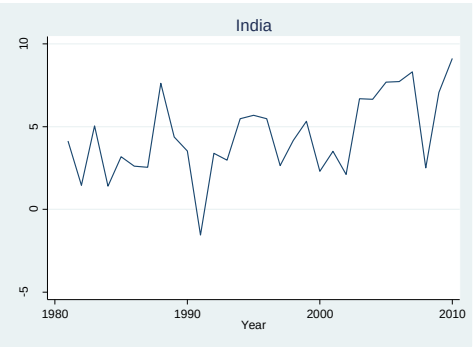
Dependent variable: real GDP per capita growth
Numbers in parenthesis are standard errors.
*, **, and *** represent 10%, 5%, and 1% level of statistical significance, respectively.

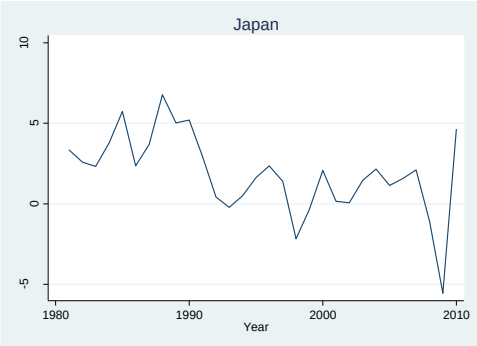
7. List of Charts

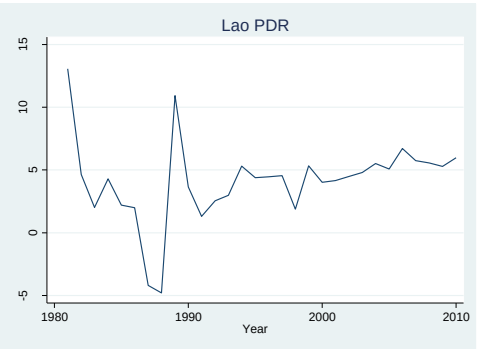
Chart A1: Real GDP per capita growth from 1980-2010 by countries

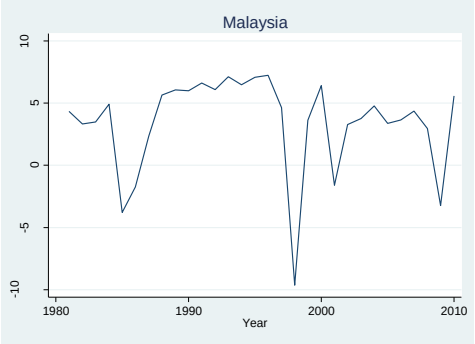


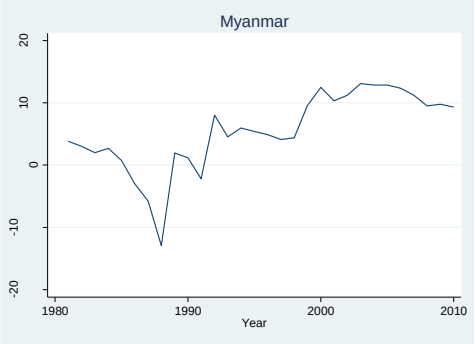


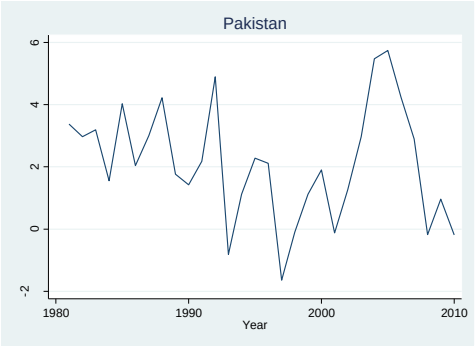


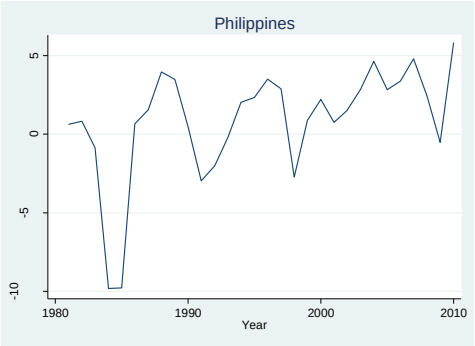





Malaysia
10
5
0
-5
-10
1980
1990
2000
2010
Year


Myanmar
20
10
0
-10
-20
1980
1990
2000
2010
Year


Pakistan
6
4
2
0
-2
1980
1990
2000
2010
Year


Philippines
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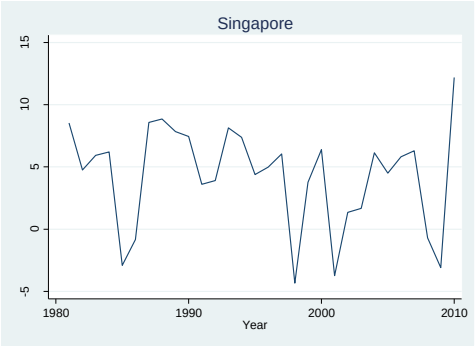
0
-5
-10
1980
1990
2000
2010
Year


Singapore
15
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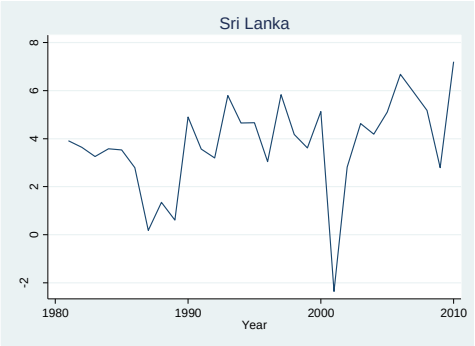
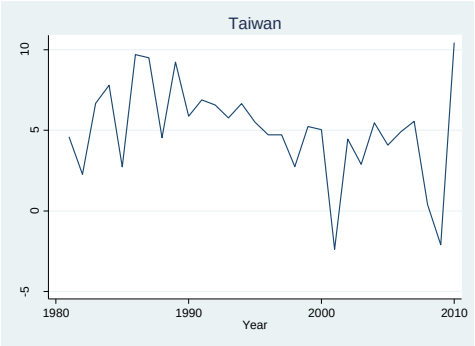
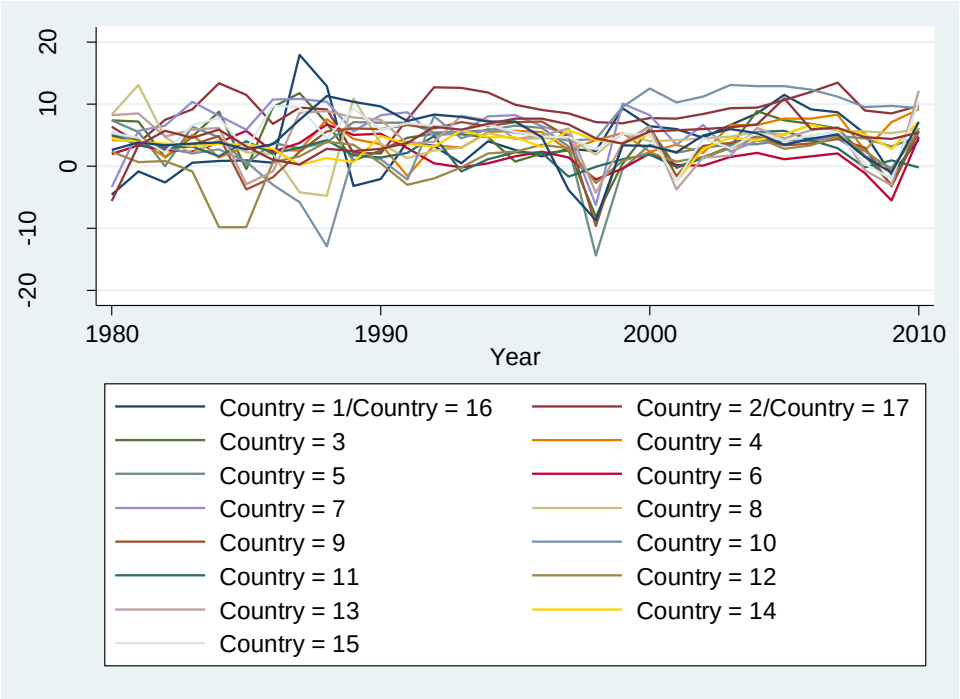
5
0
-5
1980
1990
2000
2010
Year

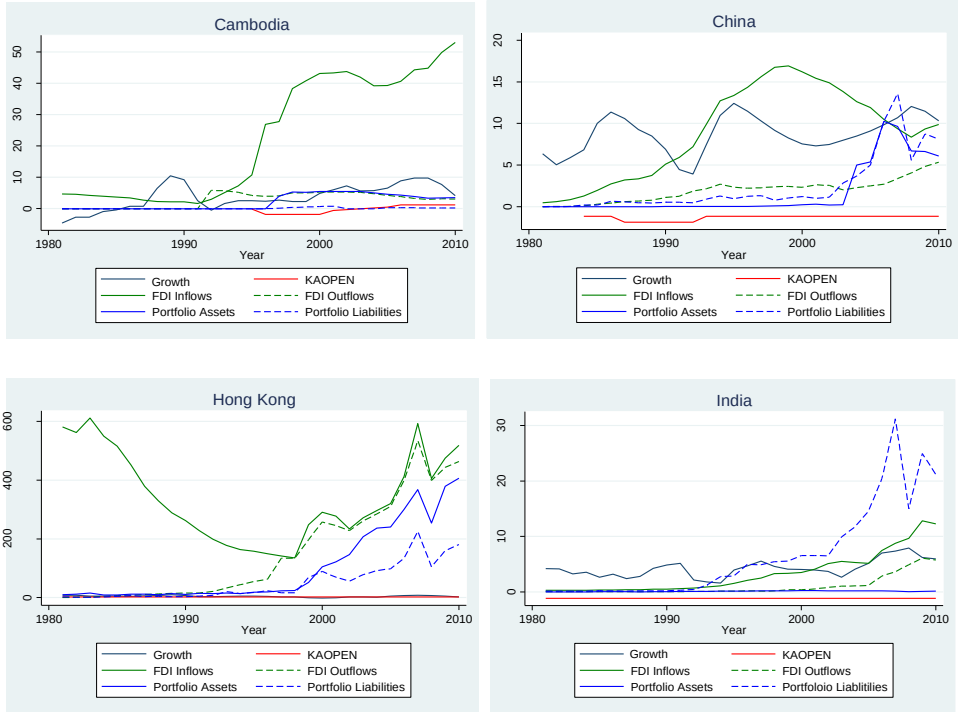

Sri Lanka
8
6
4
2
0
-2
1980
1990
2000
2010
Year

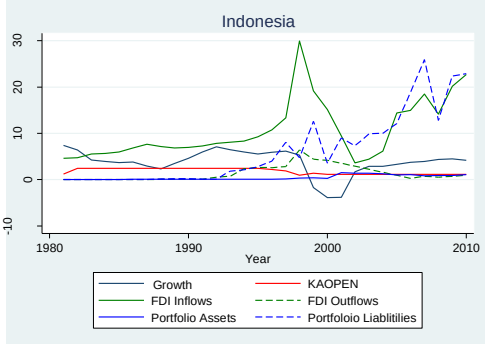

Taiwan
10
5
0
-5
1980
1990
2000
2010
Year

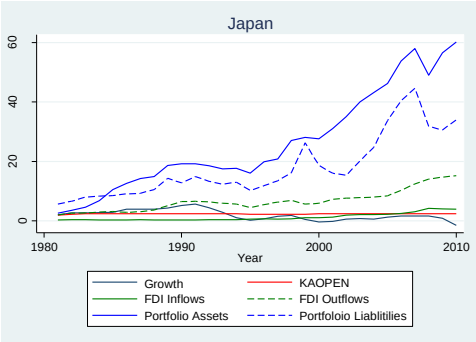
Thailand
10
5
0
-5
-10
1980
1990
2000
2010
Year

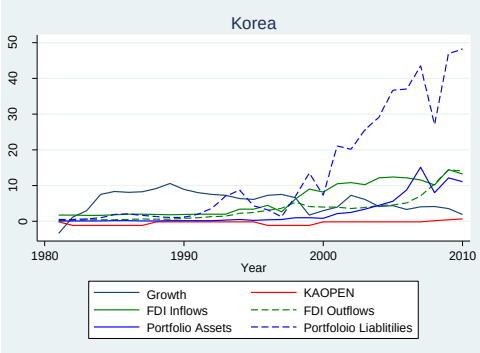


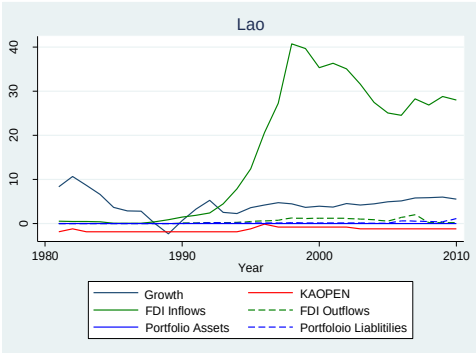
Real GDP per capita growth vs. financial liberalization for 15 Asian economies from 1980-2010

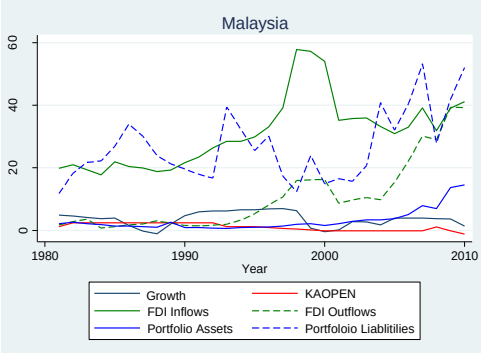


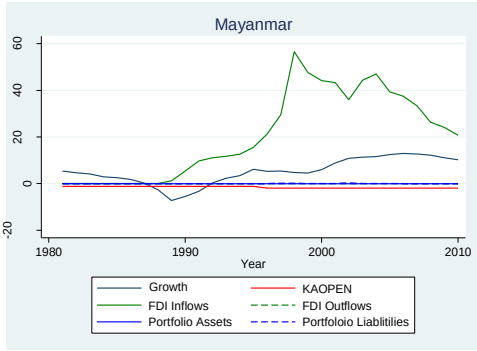

Indonesia
Year
Growth
KAOPEN
FDI Inflows
FDI Outflows
Portfolio Assets
Portfoloio Liablitilies

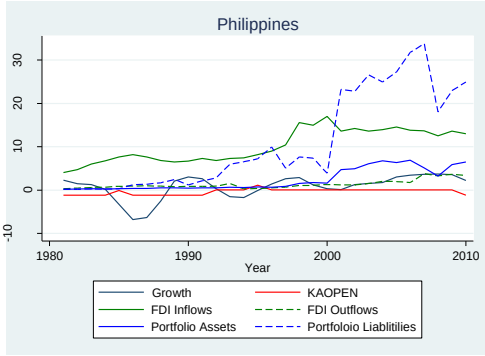

Japan
Year
Growth
KAOPEN
FDI Inflows
FDI Outflows
Portfolio Assets
Portfoloio Liablitilies

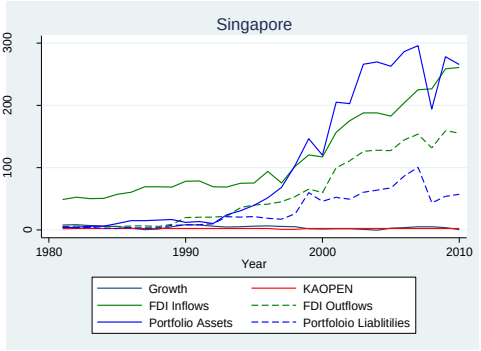

Korea
Year
Growth
KAOPEN
FDI Inflows
FDI Outflows
Portfolio Assets
Portfoloio Liablitilies

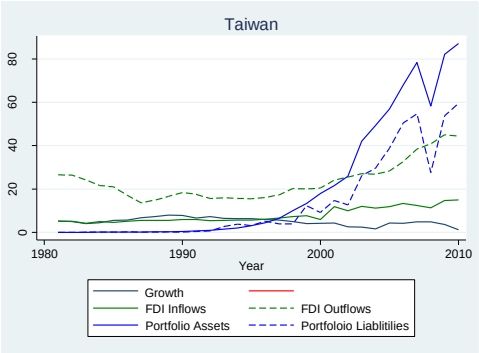

Lao
Year
Growth
KAOPEN
FDI Inflows
FDI Outflows
Portfolio Assets
Portfoloio Liablitilies

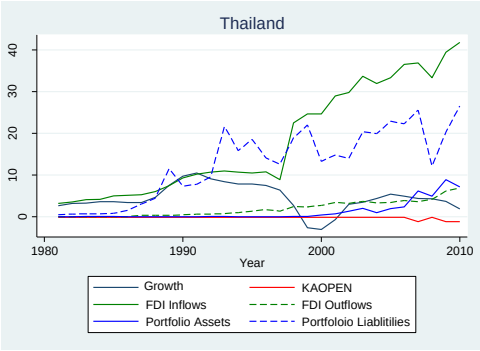

Malaysia
Year
Growth
KAOPEN
FDI Inflows
FDI Outflows
Portfolio Assets
Portfoloio Liablitilies

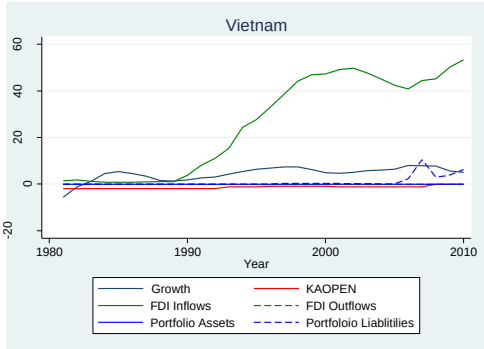

Mayanmar
Year
Growth
KAOPEN
FDI Inflows
FDI Outflows
Portfolio Assets
Portfoloio Liablitilies


Philippines
Year
Growth
KAOPEN
FDI Inflows
FDI Outflows
Portfolio Assets
Portfoloio Liablitilies


Singapore
Year
Growth
KAOPEN
FDI Inflows
FDI Outflows
Portfolio Assets
Portfoloio Liablitilies


Taiwan
0
20
40
60
80
1980
1990
2000
2010
Year
Growth
FDI Inflows
Portfolio Assets
FDI Outflows
Portfoloio Liablitilies


Thailand
0
10
20
30
40
1980
1990
2000
2010
Year
Growth
FDI Inflows
Portfolio Assets
KAOPEN
FDI Outflows
Portfoloio Liablitilies


Vietnam
-20
0
20
40
60
1980
1990
2000
2010
Year
Growth
FDI Inflows
Portfolio Assets
KAOPEN
FDI Outflows
Portfoloio Liablitilies

Appendix

TABLE B. *Literature review*

Year	Author	FinLib Indicator	Methodology	Specification	Dataset	Main Results
Dejure Measures						
1997	Quinn	Change in Quinn	Cross-Section OLS	DV:Ave Growth of Real per Capita GDP	64 countries	Positive impact
		from 1958 to 1988		Control: Initial GDP pre capita,	from 1958 -1988	
				Investment share,		
				population Growth,		
				Secondary- school enrollment		
2001	O'Donnell	Share	OLS regression	DV: Average Growth Rate of	94 countries	Not robustly significant
				Real Per Capita GDP	from 1971-1994	effect
				IndV: interactaction between FD and Share		
				Volume and FD		
2008	Klein and Olivei	Share	IV	DV: Growth in income per capita	84 countries	Positive impact for
				IV: change in Financial Depth as IV	from 1976-1995	middle-income countries
2005	BeKaert, Harvey,	Official dates of	OLS	DV: Five-year nonoverlapping	95 countries	Positive impact on
	and Lundblad 2005	stock market liberalization	GMM	average Growth Rate of Real Per Capita GI	from 1980-1997	Growth of Real GDP
				IndV: Enrollment, Population Growth		per capita
				Life expectancy, Trade/GDP		
				Inflation, Turnover, Banking crisis		
				Law and order, ICRG econmic index		
Defacto Measures						
2008	Abiad, Oomes,	Official dates of	Panel	DV: Tobin's Q	5 countries	Negative impact on
	Ueda	stock market liberalization		IndV: Stock Market liquidity, Trade Opennes	from 1980-1994	Tobin's Q dispersion
2003	Prasad, Rogoff,	Foreign assets and liabilitie	Panel	DV: change in consumption/Growth in GDP	76 countries	conditional results on growth
	Wei, and Kose	as a share of GDP		per capita	from 1960-1999	and consumption volitility
Dejure & Defacto Measures						
2002	Edison, Levine, Ricci,	Degree of fin intergration	OLS	DV: Growth in GDP per capita	57 countries	Not robustly significant
	and Slok	and capital flows crossing	IV	IndV: FinLib, Initial income, Schooling,	from 1980 -2000	effect
		the border	Panel GMM	Institutional factors, Macro policies, and		
				interaction terms with FinLib		
2009	Umutlu, Akdeniz,	KAOPEN (CI)	OLS regression	DV: log total volatility	25 countries	Negative impact on
	Altay-Salih	EW	Binary modeling:	IndV: TO, Size, AsianCrisis, PesoCrisis,	from 1991-2005	total volatility of
		FEL	Regress volitility on	Country	SP/IFC global index	stock returns
		LMF	Pre/During/Post/After		of the EMBD	

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